Rainbow® CCTV

LENSES

CAMERAS

INFRARED

MONITORS

ACCESSORIES

INFORMATION

INTERNATIONAL SPACE OPTICS, S.A.

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Version 3.4

L163VCS

1.6~3.4mm F1.4 – CS-Mount

Compatible with 1/3” & 1/4” Cameras

Focal Length: 1.6~3.4mm

Max. Relative Aperture: 1:1.4

Iris: F1.4~Close

Angular Field of View:
1/3": 180.0° × 114.1° at 1.6mm
84.3° × 55.8° at 3.4mm
1/4”: 140.0° × 88.9° at 1.6mm
67.4° × 43.5° at 3.4mm

Min. Object Distance (M.O.D.): 0.05~0.2m (From Front Vertex)

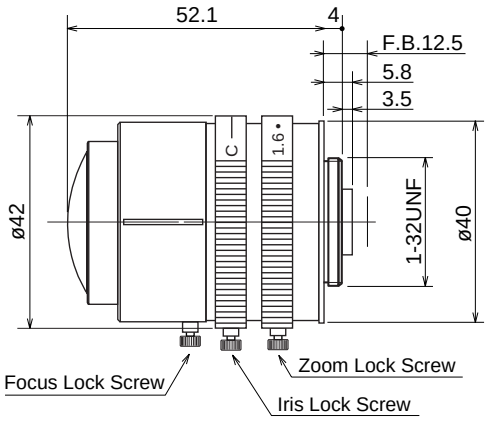
Optical Back Focal Distance: 7.07~11.55mm (In Air)

Operation:
Zoom: Manual
Focus: Manual
Iris: Manual

Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

Filter Size: None

Size, Approx. Weight: ø42 × 52.1mm, 98g
(Approx. ø1.7 × 2.1in., 3.5oz.)



L2864VCS

2.8~6.4mm F1.4 – CS-Mount

Compatible with 1/3” & 1/4” Cameras

Focal Length: 2.8~6.4mm

Max. Relative Aperture: 1:1.4

Iris: F1.4~Close

Angular Field of View:
1/3": 88.7° × 68.2° at 2.8mm
41.1° × 31.4° at 6.4mm
1/4”: 68.2° × 51.5° at 2.8mm
31.4° × 23.8° at 6.4mm

Min. Object Distance (M.O.D.): 0.2m (From Front Vertex)

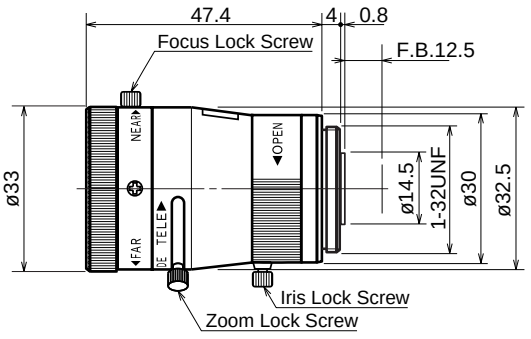
Optical Back Focal Distance: 8.45mm (In Air)

Operation:
Zoom: Manual
Focus: Manual
Iris: Manual

Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

Filter Size: None

Size, Approx. Weight: ø33 × 47.4mm, 45g
(Approx. ø1.3 × 1.9in., 1.6oz.)



L308VCS

3~8mm F1.4 – CS-Mount

Compatible with 1/3” & 1/4” Cameras

Focal Length: 3~8mm

Max. Relative Aperture: 1:1.4

Iris: F1.4~Close

Angular Field of View: 1/3": 92.9° × 68.4° at 3mm
35.7° × 26.8° at 8mm
1/4”: 61.9° × 44.5° at 3mm
26.8° × 19.1° at 8mm

Min. Object Distance (M.O.D.): 0.3m (From Front Vertex)

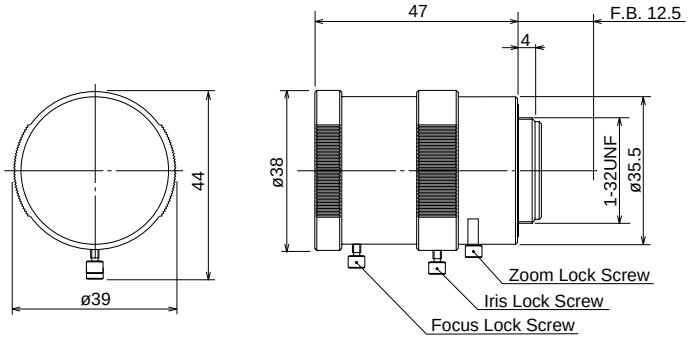
Optical Back Focal Distance: 7.25~12.81mm (In Air)

Operation: Zoom: Manual
Focus: Manual
Iris: Manual

Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

Filter Size: None

Size, Approx. Weight: ø39 × 47mm, 45g
(Approx. ø1.5 × 1.9in., 1.6oz.)



L540VCS

5~40mm F1.6 – CS-Mount

Compatible with 1/3” & 1/4” Cameras

Focal Length: 5~40mm

Max. Relative Aperture: 1:1.6

Iris: F1.6~Close

Angular Field of View: 1/3": 53.6° × 40.2° at 5mm
6.5° × 4.8° at 40mm
1/4”: 40.2° × 32.3° at 5mm
4.8° × 4.2° at 40mm

Min. Object Distance (M.O.D.): 0.1~1.0m (From Front Vertex)

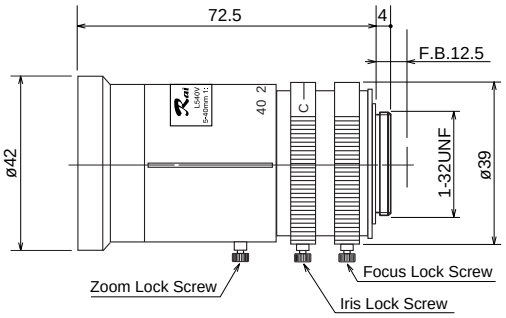
Optical Back Focal Distance: 9.6~15.9mm (In Air)

Operation: Zoom: Manual
Focus: Manual
Iris: Manual

Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

Filter Size: 40.5 P0.75

Size, Approx. Weight: ø42 × 72.5mm (dia/d), 134g
(Approx. ø1.7 × 2.9in., 4.8oz.)



L582VCS

5.5~82.5mm F1.8 – CS-Mount

Compatible with 1/3” & 1/4” Cameras

Focal Length: 5.5~82.5mm

Max. Relative Aperture: 1:1.8

Iris: F1.8~Close

Angular Field of View:
1/3": 47.1° × 36.2° at 5.5mm
3.3° × 2.5° at 82.5mm
1/4”: 36.2° × 29.5° at 5.5mm
2.5° × 2.0° at 82.5mm

Min. Object Distance (M.O.D.): 0.2~1.0m (From Front Vertex)

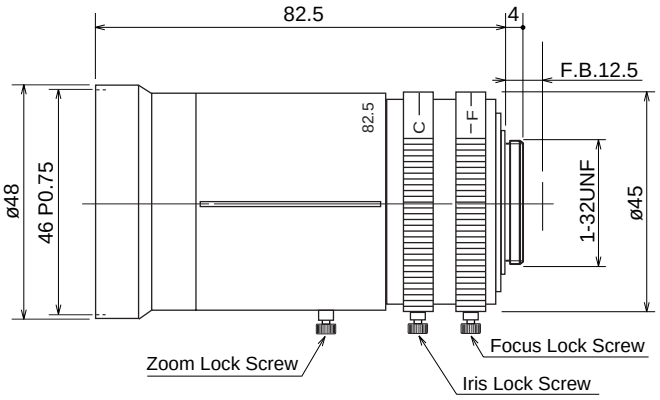
Optical Back Focal Distance: 10.32~8.65mm (In Air)

Operation:
Zoom: Manual
Focus: Manual
Iris: Manual

Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

Filter Size: 46mm P0.75

Size, Approx. Weight: ø48 × 82.5mm, 210g
(Approx. ø1.9 × 3.2in., 7.4oz.)



L639VCS

6.5~39mm F1.4 – CS-Mount

Compatible with 1/3” & 1/4” Cameras

Focal Length: 6.5~39mm

Max. Relative Aperture: 1:1.4

Iris: F1.4~Close

Angular Field of View:
1/3": 40.5° × 31.0° at 6.5mm
7.0° × 5.3° at 39mm
1/4”: 31.0° × 23.5° at 6.5mm
5.3° × 4.0° at 39mm

Min. Object Distance (M.O.D.): 0.8m (From Front Vertex)

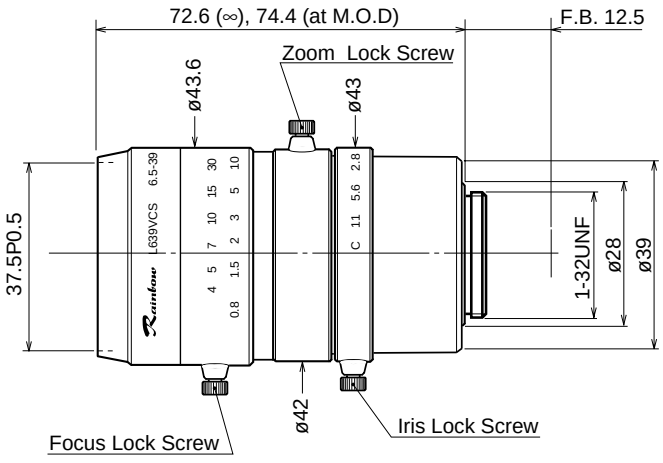
Optical Back Focal Distance: 11.85mm (In Air)

Operation:
Zoom: Manual
Focus: Manual
Iris: Manual

Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

Filter Size: 37.5mm P0.5

Size: ø43.6 × 74.4mm
(Approx. ø1.7 × 2.9in.)



H612VCS

6~12mm F1.4 – CS-Mount

Compatible with 1/2”, 1/3”, & 1/4” Cameras

Focal Length: 6~12mm

Max. Relative Aperture: 1:1.4

Iris: F1.4~Close

Angular Field of View:
1/2”: 56.1° × 43.6° at 6mm
29.9° × 22.6° at 12mm
1/3": 43.6° × 33.4° at 6mm
22.6° × 17.1° at 12mm
1/4”: 33.4° × 25.4° at 6mm
17.1° × 12.8° at 12mm

Min. Object Distance (M.O.D.): 0.25m (From Front Vertex)

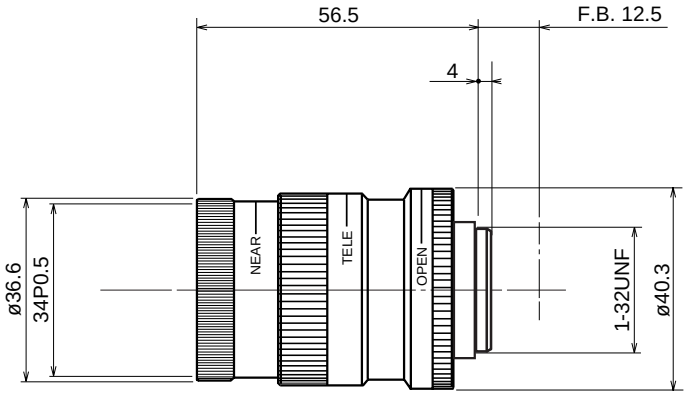
Optical Back Focal Distance: 11.0mm (In Air)

Operation:
Zoom: Manual
Focus: Manual
Iris: Manual

Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

Filter Size (Front Thread): 34mm P0.5

Size, Approx. Weight: ø40.3 × 56.5mm, 60g
(Approx. ø1.6 × 2.2in., 2.1oz.)



L851VCS

8.5~51mm F1.6 – CS-Mount

Compatible with 1/2”, 1/3”, & 1/4” Cameras

Focal Length: 8.5~51mm

Max. Relative Aperture: 1:1.6

Iris: F1.6~Close

Angular Field of View:
1/2”: 41.3° × 31.5° at 8.5mm
7.2° × 5.4° at 51mm
1/3": 31.5° × 23.9° at 8.5mm
5.4° × 4.0° at 51mm
1/4”: 23.9° × 18.0° at 8.5mm
4.0° × 3.0° at 51mm

Min. Object Distance (M.O.D.): 0.8m (From Front Vertex)

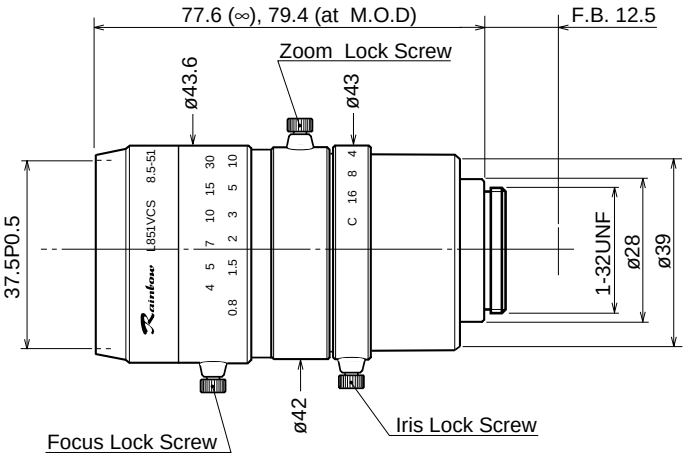
Optical Back Focal Distance: 15.89mm (In Air)

Operation:
Zoom: Manual
Focus: Manual
Iris: Manual

Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

Filter Size (Front Thread): 37.5mm P0.5

Size: ø43.6 × 79.4mm, 120g
(Approx. ø1.7 × 3.1in., 4.2oz.)



L163VDC4P

1.6~3.4mm F1.4 – CS-Mount

Compatible with 1/3” & 1/4” Cameras

Focal Length: 1.6~3.4mm

Max. Relative Aperture: 1:1.4

Iris: F1.4~Approx. F360
With ND Spot Filter

Angular Field of View: 1/3": 180.0° × 114.1° at 1.6mm
84.3° × 55.8° at 3.4mm
1/4”: 140.0° × 88.9° at 1.6mm
67.4° × 43.5° at 3.4mm

Min. Object Distance (M.O.D.): 0.05~0.2m (From Front Vertex)

Optical Back Focal Distance: 7.06~11.54mm (In Air)

Operation: Zoom: Manual
Focus: Manual
Iris: IG (Auto-Close System)

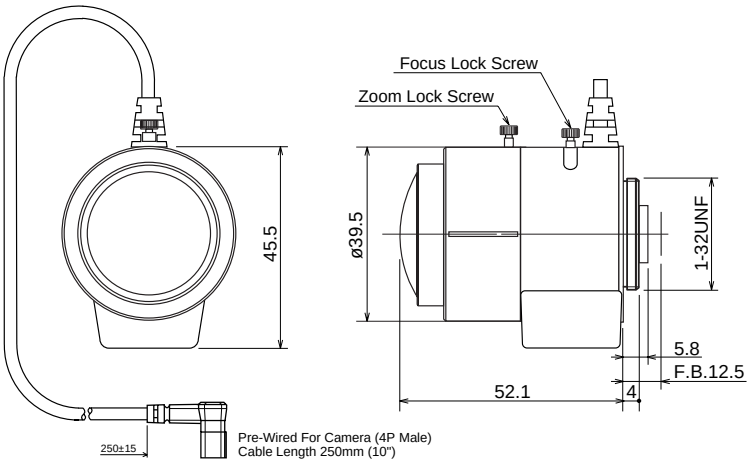
Operation Voltage: Close to Open: Less than 3V
Open to Close: More than 0.5V

Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

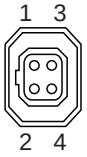
Filter Size: None

Mount: CS-Mount
(Adjustable Lens Postion)

Size, Approx. Weight: 39.5 × 45.5 × 52.1mm (w/h/d), 105g
(Approx. 1.6 × 1.8 × 2.1in., 3.7oz.)



Camera Connector Wiring



Pin	Signal
1	Brake – *
2	Brake + *
3	Drive +
4	Drive –

* Also referred to as DAMP, CONTROL, or DUMP

L212VDC4P

2.7~12mm F1.4 – CS-Mount

Compatible with 1/3” & 1/4” Cameras

Focal Length: 2.7~12mm

Max. Relative Aperture: 1:1.4

Iris: F1.4~Approx. F360
With ND Spot Filter

Angular Field of View: 1/3": 83.2° × 67.3° at 2.7mm
22.6° × 17.1° at 12mm
1/4”: 68.2° × 51.5° at 2.8mm
17.1° × 12.8° at 6.4mm

Min. Object Distance (M.O.D.): 0.25m (From Front Vertex)

Optical Back Focal Distance: 8.526~20.976mm (In Air)

Operation: Zoom: Manual
Focus: Manual
Iris: IG (Auto-Close System)

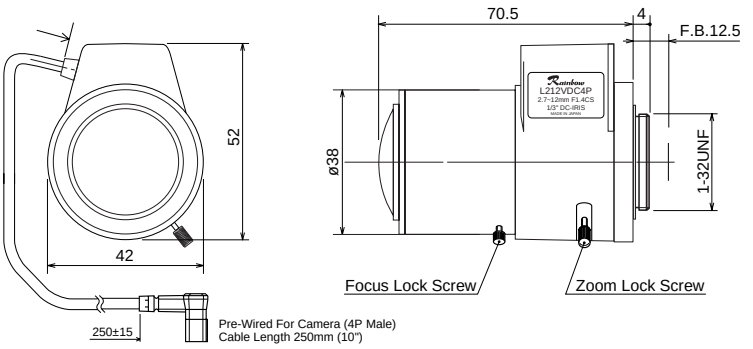
Operation Voltage: Close to Open: Less than 4V
Open to Close: More than 0.5V

Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

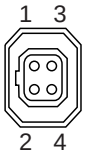
Filter Size: None

Mount: CS-Mount
(Adjustable Lens Postion)

Size, Approx. Weight: 42 × 52 × 70.5mm (w/h/d), 80g
(Approx. 1.7 × 2.0 × 2.8in., 2.8oz.)



Camera Connector Wiring



Pin	Signal
1	Brake – *
2	Brake + *
3	Drive +
4	Drive –

* Also referred to as DAMP, CONTROL, or DUMP

L2864VDC4P

2.8~6.4mm F1.4 – CS-Mount

Compatible with 1/3” & 1/4” Cameras

Focal Length: 2.8~6.4mm

Max. Relative Aperture: 1:1.4

Iris: F1.4~Approx. F360
With ND Spot Filter

Angular Field of View:
1/3": 88.7° × 68.2° at 2.8mm
41.1° × 31.4° at 6.4mm
1/4”: 68.2° × 51.5° at 2.8mm
31.4° × 23.8° at 6.4mm

Min. Object Distance (M.O.D.): 0.2m (From Front Vertex)

Optical Back Focal Distance: 8.45mm (In Air)

Operation:
Zoom: Manual
Focus: Manual
Iris: IG (Auto-Close System)

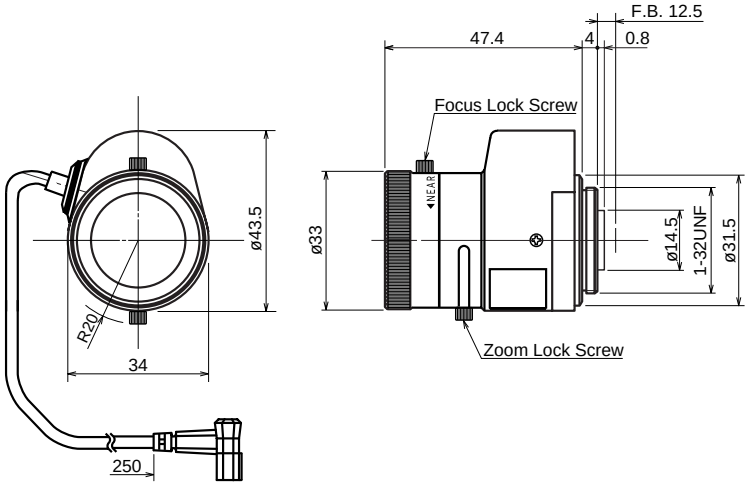
Operation Voltage: Close to Open: Less than 3V
Open to Close: More than 0.5V

Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

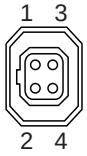
Filter Size: None

Mount: CS-Mount
(Adjustable Lens Postion)

Size, Approx. Weight: 34 × 43.5 × 47.4mm (w/h/d), 65g
(Approx. 1.3 × 1.7 × 1.9in., 2.3oz.)



Camera Connector Wiring



Pin	Signal
1	Brake – *
2	Brake + *
3	Drive +
4	Drive –

* Also referred to as DAMP, CONTROL, or DUMP

L298AVDC4P (Aspheric)

2.9~8mm F0.95 – CS-Mount

Compatible with 1/3” & 1/4” Cameras

Focal Length: 2.9~8mm

Max. Relative Aperture: 1:0.95

Iris: F0.95~Approx. F360
Built-in ND Spot Filter

Angular Field of View:
1/3": 93.3° × 68.5° at 2.9mm
34.5° × 26.1° at 8mm
1/4”: 60.5° × 43.5° at 2.9mm
26.1° × 19.1° at 8mm

Min. Object Distance (M.O.D.): 0.3m (From Front Vertex)

Optical Back Focal Distance: 7.7~14.61mm (In Air)

Operation:
Zoom: Manual
Focus: Manual
Iris: IG (Auto-Close System)

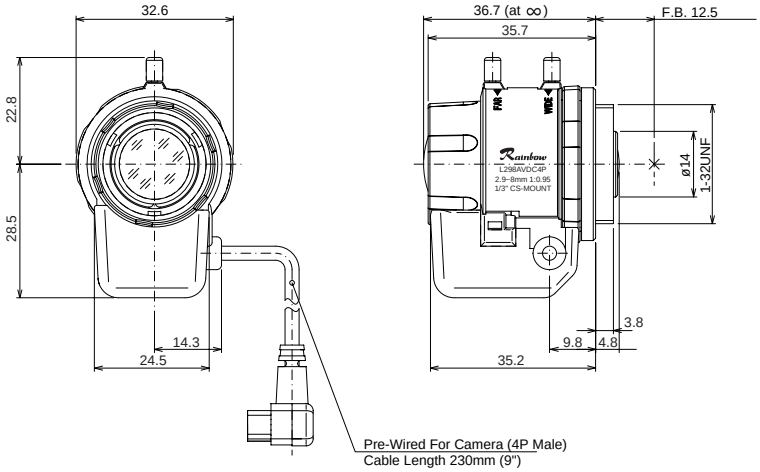
Operation Voltage: Close to Open: Less than 3V
Open to Close: More than 0.5V

Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

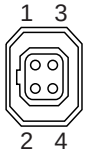
Filter Size: None

Mount: CS-Mount
(Adjustable Lens Postion)

Size, Approx. Weight: 32.6 × 51.3 × 36.7mm (w/h/d), 50g
(Approx. 1.3 × 2.0 × 1.4in., 1.8oz.)



Camera Connector Wiring



Pin	Signal
1	Brake – *
2	Brake + *
3	Drive +
4	Drive –

* Also referred to as DAMP, CONTROL, or DUMP

L308VDC4P

3~8mm F1.4 – CS-Mount

Compatible with 1/3” & 1/4” Cameras

Focal Length: 3~8mm

Max. Relative Aperture: 1:1.4

Iris: F1.4~Approx. F360
With ND Spot Filter

Angular Field of View: 1/3": 92.9° × 68.4° at 3mm
35.7° × 26.8° at 8mm
1/4”: 61.9° × 44.5° at 3mm
26.8° × 19.1° at 8mm

Min. Object Distance (M.O.D.): 0.3m (From Front Vertex)

Optical Back Focal Distance: 7.25~12.81mm (In Air)

Operation: Zoom: Manual
Focus: Manual
Iris: IG (Auto-Close System)

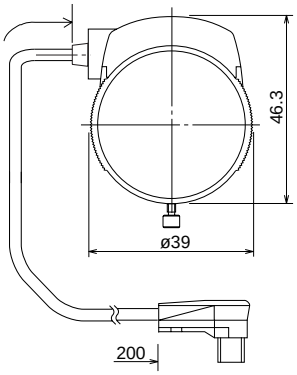
Operation Voltage: Close to Open: Less than 3V
Open to Close: More than 0.5V

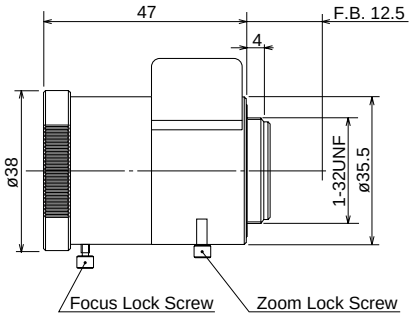
Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

Filter Size: None

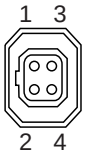
Mount: CS-Mount
(Adjustable Lens Postion)

Size, Approx. Weight: 39 × 46.3 × 47mm (w/h/d), 65g
(Approx. 1.5 × 1.8 × 1.9in., 2.3oz.)





Camera Connector Wiring



Pin	Signal
1	Brake – *
2	Brake + *
3	Drive +
4	Drive –

* Also referred to as DAMP, CONTROL, or DUMP

L540VDC4P

5~40mm F1.6 – CS-Mount

Compatible with 1/3” & 1/4” Cameras

Focal Length: 5~40mm

Max. Relative Aperture: 1:1.6

Iris: F1.6~Approx. 360
With ND Spot Filter

Angular Field of View: 1/3": 53.6° × 40.2° at 5mm
6.5° × 4.8° at 40mm
1/4”: 40.2° × 32.3° at 5mm
4.8° × 4.2° at 40mm

Min. Object Distance (M.O.D.): 0.1~1.0m (From Front Vertex)

Optical Back Focal Distance: 9.6~15.9mm (In Air)

Operation: Zoom: Manual
Focus: Manual
Iris: IG (Auto-Close System)

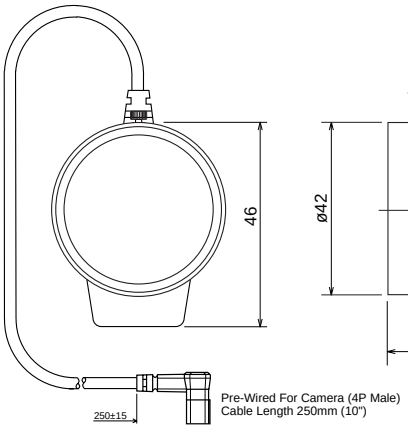
Operation Voltage: Close to Open: Less than 3V
Open to Close: More than 0.5V

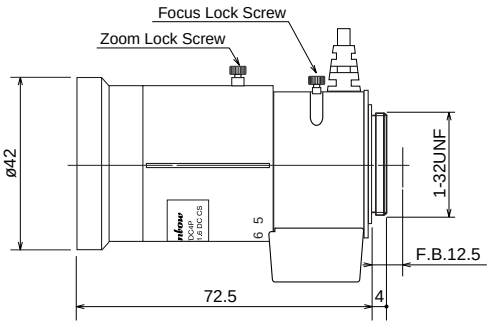
Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

Filter Size: 40.5 P0.75

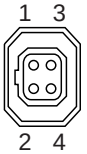
Mount: CS-Mount
(Adjustable Lens Postion)

Size, Approx. Weight: 42 × 46 × 72.5mm (w/h/d), 155g
(Approx. 1.7 × 1.8 × 2.9in., 5.5oz.)





Camera Connector Wiring



Pin	Signal
1	Brake – *
2	Brake + *
3	Drive +
4	Drive –

* Also referred to as DAMP, CONTROL, or DUMP

L550VDC4P

5~50mm F1.45 – CS-Mount

Compatible with 1/3” & 1/4” Cameras

Focal Length: 5~50mm

Max. Relative Aperture: 1:1.45

Iris: F1.45~Approx. F360
Built-in ND Spot Filter

Angular Field of View: 1/3": 54.2° × 40.4° at 5mm
5.6° × 4.2° at 50mm
1/4”: 40.4° × 30.1° at 5mm
4.2° × 3.1° at 50mm

Min. Object Distance (M.O.D.): 0.3m (From Front Vertex)

Optical Back Focal Distance: 15.23mm (In Air)

Operation: Zoom: Manual
Focus: Manual
Iris: IG (Auto-Close System)

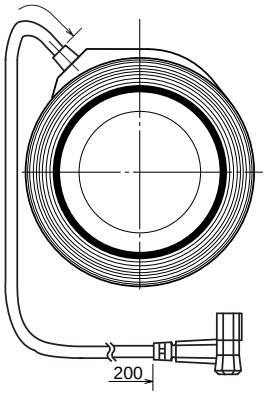
Operation Voltage: Close to Open: Less than 3V
Open to Close: More than 0.5V

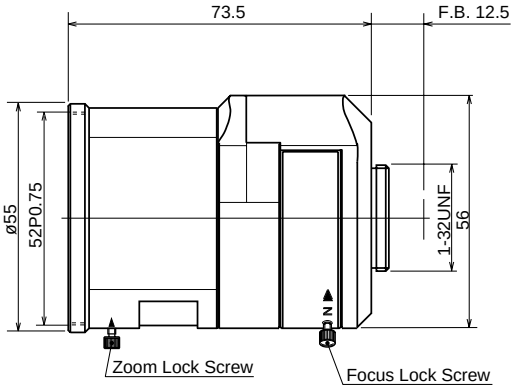
Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

Filter Size: 52mm P0.75

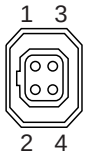
Mount: CS-Mount
(Adjustable Lens Postion)

Size, Approx. Weight: 55 × 56 × 73.5mm (w/h/d), 140g
(Approx. 2.2 × 2.2 × 2.9in., 4.9oz.)





Camera Connector Wiring



Pin	Signal
1	Brake – *
2	Brake + *
3	Drive +
4	Drive –

* Also referred to as DAMP, CONTROL, or DUMP

L582VDC4P

5.5~82.5mm F1.8 – CS-Mount

Compatible with 1/3”, & 1/4” Cameras

Focal Length: 5.5~82.5mm

Max. Relative Aperture: 1:1.8

Iris: F1.8~Approx. F360
With ND Spot Filter

Angular Field of View: 1/3": 47.1° × 36.2° at 5.5mm
3.3° × 2.5° at 82.5mm
1/4”: 36.2° × 29.5° at 5.5mm
2.5° × 2.0° at 82.5mm

Min. Object Distance (M.O.D.): 0.2~1.0m (From Front Vertex)

Optical Back Focal Distance: 10.32~8.65mm (In Air)

Operation: Focus: Manual
Iris: IG (Auto-Close System)

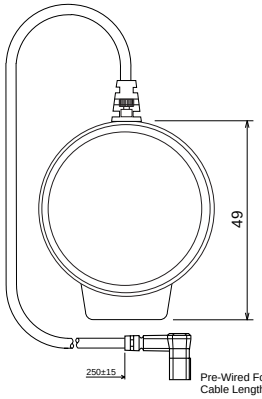
Operation Voltage: Close to Open: Less than 3V
Open to Close: More than 0.5V

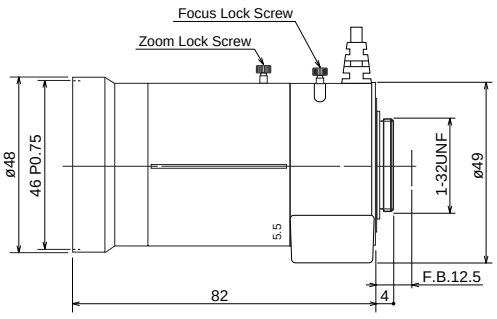
Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

Filter Size (Front Thread): 46mm P0.75

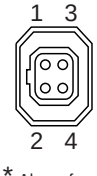
Mount: CS-Mount
(Adjustable Lens Postion)

Size, Approx. Weight: 48 × 49 × 82mm (w/h/d), 220g
(Approx. 1.9 × 1.9 × 3.2in., 7.8oz.)





Camera Connector Wiring



Pin	Signal
1	Brake – *
2	Brake + *
3	Drive +
4	Drive –

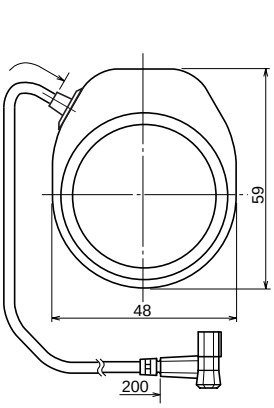
* Also referred to as DAMP, CONTROL, or DUMP

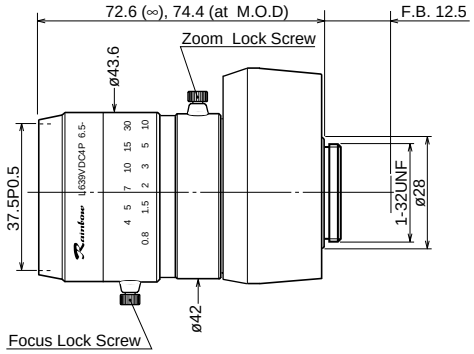
L639VDC4P

6.5~39mm F1.4 – CS-Mount

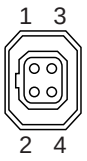
Compatible with 1/3” & 1/4” Cameras

Focal Length:		6.5~39mm
Max. Relative Aperture:		1:1.4
Iris:		F1.4~Approx. F360 With ND Spot Filter
Angular Field of View:		1/3": 40.5° × 31.0° at 6.5mm 7.0° × 5.3° at 39mm 1/4": 31.0° × 23.5° at 6.5mm 5.3° × 4.0° at 39mm
Min. Object Distance (M.O.D.):		0.8m (From Front Vertex)
Optical Back Focal Distance:		11.85mm (In Air)
Operation:	Zoom: Focus: Iris:	Manual Manual IG (Auto-Close System)
Operation Voltage:		Close to Open: Less than 3V Open to Close: More than 0.5V
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		37.5mm P0.5
Mount:		CS-Mount (Adjustable Lens Postion)
Size, approx. Weight:		48 × 59 × 74.4mm (w/h/d) 130g (Approx. 1.9 × 2.3 × 2.9in., 4.6oz.)





Camera Connector Wiring



Pin	Signal
1	Brake – *
2	Brake + *
3	Drive +
4	Drive –

* Also referred to as DAMP, CONTROL, or DUMP

L612VDC4P

6~12mm F1.4 – CS-Mount

Compatible with 1/2”, 1/3”, & 1/4” Cameras

Focal Length: 6~12mm

Max. Relative Aperture: 1:1.4

Iris: F1.4~Approx. F88
With ND Spot Filter

Angular Field of View:
1/2”: 56.1° × 43.6° at 6mm
29.9° × 22.6° at 12mm
1/3”: 43.6° × 33.4° at 6mm
22.6° × 17.1° at 12mm
1/4”: 33.4° × 25.4° at 6mm
17.1° × 12.8° at 12mm

Min. Object Distance (M.O.D.): 0.25m (From Front Vertex)

Optical Back Focal Distance: 11.0mm (In Air)

Operation:
Zoom: Manual
Focus: Manual
Iris: IG (Auto-Close System)

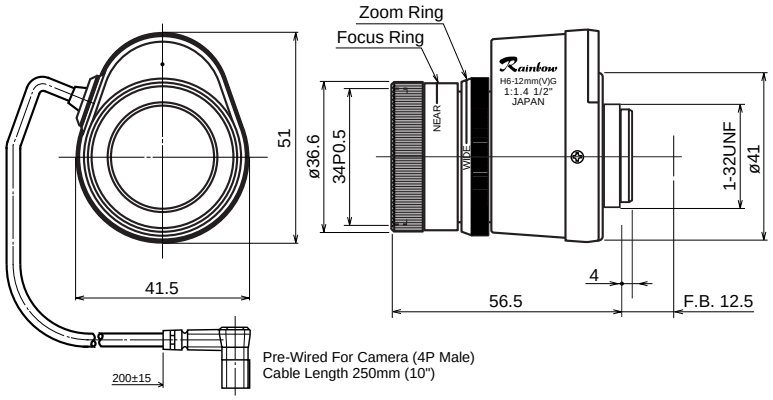
Operation Voltage: Close to Open: Less than 3V
Open to Close: More than 0.5V

Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

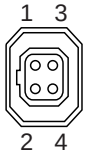
Filter Size (Front Thread): 34mm P0.5

Mount: CS-Mount
(Adjustable Lens Postion)

Size, Approx. Weight: 41.5 × 51 × 56.5mm (w/h/d), 65g
(Approx. 1.6 × 2.0 × 2.0in., 2.3oz.)



Camera Connector Wiring



Pin	Signal
1	Brake – *
2	Brake + *
3	Drive +
4	Drive –

* Also referred to as DAMP, CONTROL, or DUMP

L851VDC4P

8.5~51mm F1.6 – CS-Mount

Compatible with 1/2”, 1/3”, & 1/4” Cameras

Focal Length: 8.5~51mm

Max. Relative Aperture: 1:1.6

Iris: F1.6~Approx. F360
With ND Spot Filter

Angular Field of View:
1/2”: 41.3° × 31.5° at 8.5mm
7.2° × 5.4° at 51mm
1/3”: 31.5° × 23.9° at 8.5mm
5.4° × 4.0° at 51mm
1/4”: 23.9° × 18.0° at 8.5mm
4.0° × 3.0° at 51mm

Min. Object Distance (M.O.D.): 0.8m (From Front Vertex)

Optical Back Focal Distance: 15.89mm (In Air)

Operation:
Zoom: Manual
Focus: Manual
Iris: IG (Auto-Close System)

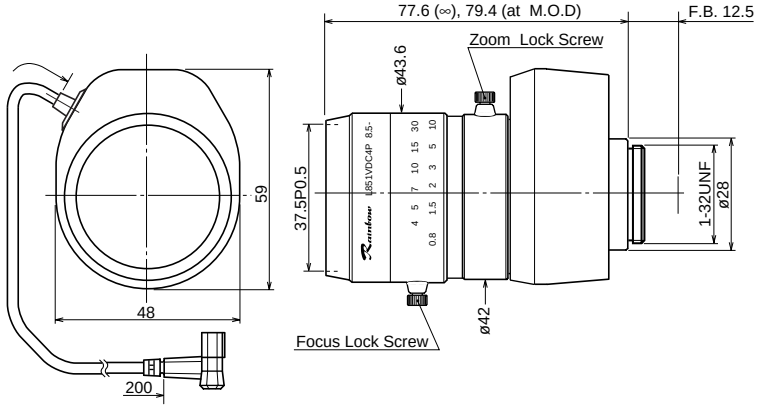
Operation Voltage: Close to Open: Less than 3V
Open to Close: More than 0.5V

Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

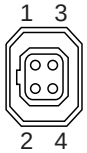
Filter Size: 37.5mm P0.5

Mount: CS-Mount
(Adjustable Lens Postion)

Size, Approx. Weight: 48 × 59 × 79.4mm (w/h/d) 130g
(Approx. 1.9 × 2.3 × 3.1in., 4.6oz.)



Camera Connector Wiring



Pin	Signal
1	Brake – *
2	Brake + *
3	Drive +
4	Drive –

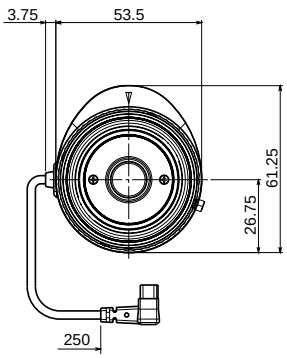
* Also referred to as DAMP, CONTROL, or DUMP

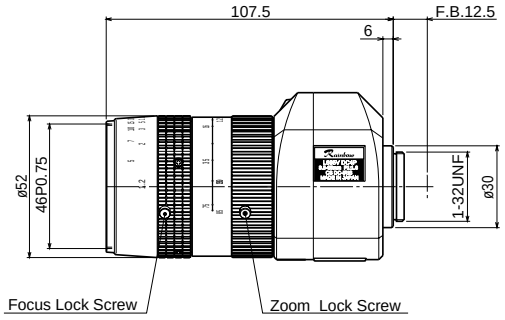
L885VDC4P

8.5~85mm F1.6 – CS-Mount

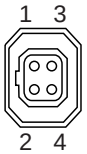
Compatible with 1/2”, 1/3”, & 1/4” Cameras

Focal Length:		8.5~85mm
Max. Relative Aperture:		1:1.6
Iris:		F1.6~Approx. F88 With ND Spot Filter
Angular Field of View:		1/2”: 41.3° × 31.5° at 8.5mm 4.3° × 3.2° at 85mm 1/3": 31.5° × 23.6° at 8.5mm 3.2° × 2.4° at 85mm 1/4”: 23.9° × 18.0° at 8.5mm 2.4° × 1.8° at 85mm
Min. Object Distance (M.O.D.):		1.2m (From Front Vertex)
Optical Back Focal Distance:		15.56mm (In Air)
Operation:	Zoom:	Manual
	Focus:	Manual
	Iris:	IG (Auto-Close System)
Operation Voltage:		Close to Open: Less than 3V Open to Close: More than 0.5V
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size (Front Thread):		46mm P0.75
Mount:		CS-Mount (Adjustable Lens Postion)
Size, Approx. Weight:		53.5 × 61.3 × 107.5mm (w/h/d), 216g (Approx. 2.1 × 2.4 × 4.2in., 7.6oz.)





Camera Connector Wiring



Pin	Signal
1	Brake – *
2	Brake + *
3	Drive +
4	Drive –

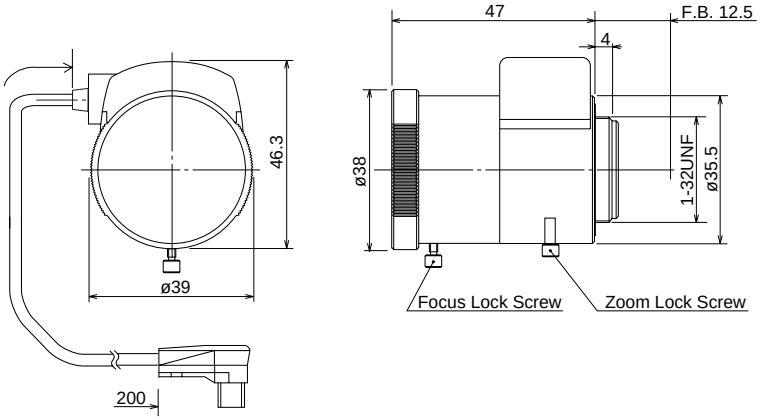
* Also referred to as DAMP, CONTROL, or DUMP

L308VGECS

3~8mm F1.4 – CS-Mount

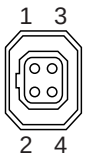
Compatible with 1/3” & 1/4” Cameras
Pre-wired with 4-pin connector

Focal Length:		3~8mm
Max. Relative Aperture:		1:1.4
Iris:		F1.4~Approx. F360 With ND Spot Filter
Angular Field of View:		1/3": 92.9° × 68.4° at 3mm 35.7° × 26.8° at 8mm 1/4": 61.9° × 44.5° at 3mm 26.8° × 19.1° at 8mm
Min. Object Distance (M.O.D.):		0.3m (From Front Vertex)
Optical Back Focal Distance:		7.25~12.81mm (In Air)
Operation:	Zoom:	Manual
	Focus:	Manual
	Iris:	Auto (DC+6.5~16V: Fixed Voltage, Max. 40mA) Auto-Close System Speed Within 4 sec.
Auto-Iris Accuracy:		With Input Video Signal 0.7Vp-p Within ±10% of Mean Value
Auto-Iris Input Signal:		Composite Video Signal or Video Signal
Input Impedance:		High Impedance
Sensitivity Adjustment:		Image Signal Level 0.5~1.5Vp-p
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		None
Mount:		CS-Mount (Adjustable Lens Position)
Size, Approx. Weight:		39 × 46.3 × 47mm (w/h/d), 65g (Approx. 1.5 × 1.8 × 1.9in., 2.3oz.)



This model is a combination of our L308VDC4P and DLA DC to Video Lens adapter. (specification is located in the Accessories section)

Camera Connector Wiring



Pin	Signal
1	+8-16VDC
2	N.C.
3	Video
4	Ground

VIDEO TYPE LENS

For cameras with standard wiring for Video type lenses (Rainbow, Panasonic, Sanyo, Sony, etc.)

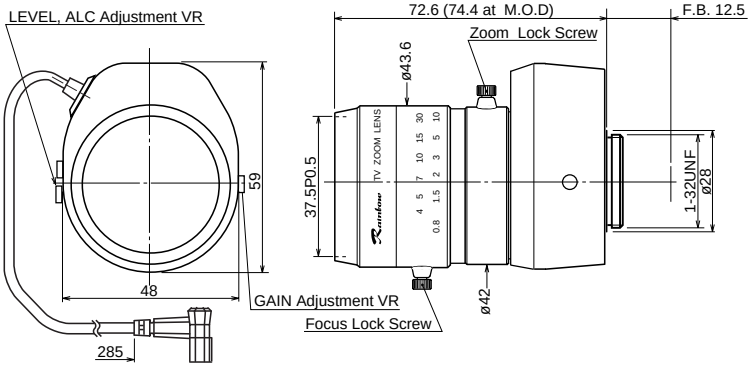
Note: Some brands (incl. Everfocus, Javelin, Watec) use the same 4-pin connector with non-standard wiring. **To avoid camera damage, compare wiring instructions in camera box to this diagram.**

L639VGECS

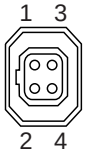
6.5~39mm F1.4 – CS-Mount

Compatible with 1/3” & 1/4” Cameras
Pre-wired with 4-pin connector

Focal Length:		6.5~39mm
Max. Relative Aperture:		1:1.4
Iris:		F1.4~Approx. F360 With ND Spot Filter
Angular Field of View:		1/3": 40.5° × 31.0° at 6.5mm 7.0° × 5.3° at 39mm 1/4": 31.0° × 23.5° at 6.5mm 5.3° × 4.0° at 39mm
Min. Object Distance (M.O.D.):		0.8m (From Front Vertex)
Optical Back Focal Distance:		11.85mm (In Air)
Operation:	Zoom:	Manual
	Focus:	Manual
	Iris:	Auto (DC+8.5~16V: Fixed Voltage, Max. 40mA) Auto-Close System Speed Within 4 sec.
Auto-Iris Accuracy:		With Input Video Signal 0.7Vp-p Within ±10% of Mean Value
Auto-Iris Input Signal:		Composite Video Signal or Video Signal
Input Impedance:		High Impedance
Sensitivity Adjustment:		Image Signal Level 0.5~1.5Vp-p
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		37.5mm P0.5
Mount:		CS-Mount (Adjustable Lens Position)
Size, Approx. Weight:		48 × 59 × 74.4mm (w/h/d) 140g (Approx. 1.9 × 2.3 × 2.9in., 5.5oz.)



Camera Connector Wiring



Pin	Signal
1	+8-16VDC
2	N.C.
3	Video
4	Ground

VIDEO TYPE LENS

For cameras with standard wiring for Video type lenses (Rainbow, Panasonic, Sanyo, Sony, etc.)

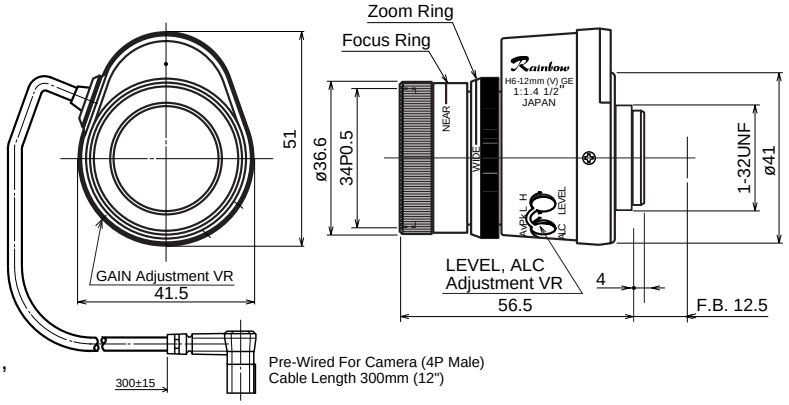
Note: Some brands (incl. Everfocus, Javelin, Watec) use the same 4-pin connector with non-standard wiring. **To avoid camera damage, compare wiring instructions in camera box to this diagram.**

H612VGECS

6~12mm F1.4 – CS-Mount

Compatible with 1/2", 1/3", & 1/4" Cameras
Cable Assembly Required – Sold Separately

Focal Length: 6~12mm
Max. Relative Aperture: 1:1.4
Iris: F1.4~Approx. F88
With ND Spot Filter
Angular Field of View: 1/2": 56.1° × 43.6° at 6mm
29.9° × 22.6° at 12mm
1/3": 43.6° × 33.4° at 6mm
22.6° × 17.1° at 12mm
1/4": 33.4° × 25.4° at 6mm
17.1° × 12.8° at 12mm
Min. Object Distance (M.O.D.): 0.25m (From Front Vertex)
Optical Back Focal Distance: 11.0mm (In Air)
Operation: Zoom: Manual Focus: Manual
Iris: Auto (DC+8~16V: Fixed Voltage, Max. 40mA) Auto-Close System Speed Within 4 sec.
Auto-Iris Accuracy: With Input Video Signal 0.7Vp-p Within ±10% of Mean Value
Auto-Iris Input Signal: Composite Video Signal or Video Signal
Input Impedance: High Impedance
Sensitivity Adjustment: Image Signal Level 0.5~1.5Vp-p
Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)
Filter Size (Front Thread): 34mm P0.5
Mount: CS-Mount (Adjustable Lens Position)
Size, Approx. Weight: 41.5 × 51 × 56.5mm (w/h/d), 70g (Approx. 1.6 × 2.0 × 2.0in., 2.2oz.)



Camera Connector Wiring

Pin	Signal
1	+8-16VDC
2	N.C.
3	Video
4	Ground

VIDEO TYPE LENS

For cameras with standard wiring for Video type lenses (Rainbow, Panasonic, Sanyo, Sony, etc.)

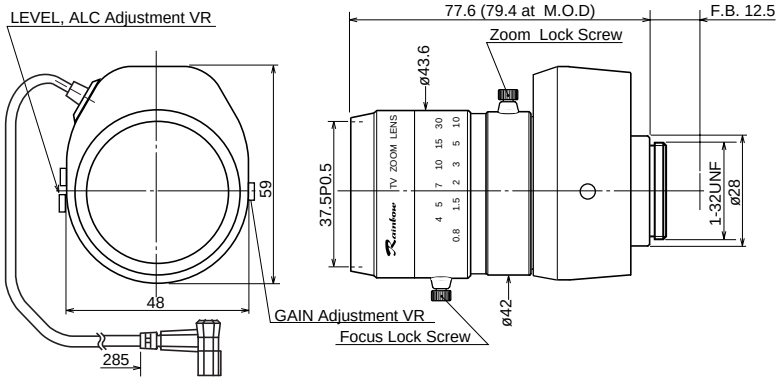
Note: Some brands (incl. Everfocus, Javelin, Watec) use the same 4-pin connector with non-standard wiring. **To avoid camera damage, compare wiring instructions in camera box to this diagram.**

L851VGECS

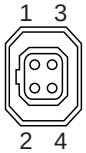
8.5~51mm F1.6 – CS-Mount

Compatible with 1/2", 1/3", & 1/4" Cameras
Cable Assembly Required – Sold Separately

Focal Length: 8.5~51mm
Max. Relative Aperture: 1:1.6
Iris: F1.6~Approx. F360
With ND Spot Filter
Angular Field of View: 1/2": 41.3° × 31.5° at 8.5mm
7.2° × 5.4° at 51mm
1/3": 31.5° × 23.9° at 8.5mm
5.4° × 4.0° at 51mm
1/4": 23.9° × 18.0° at 8.5mm
4.0° × 3.0° at 51mm
Min. Object Distance (M.O.D.): 0.8m (From Front Vertex)
Optical Back Focal Distance: 15.89mm (In Air)
Operation: Zoom: Manual Focus: Manual
Iris: Auto (DC+8~16V: Fixed Voltage, Max. 40mA) Auto-Close System Speed Within 4 sec.
Auto-Iris Accuracy: With Input Video Signal 0.7Vp-p Within ±10% of Mean Value
Auto-Iris Input Signal: Composite Video Signal or Video Signal
Input Impedance: High Impedance
Sensitivity Adjustment: Image Signal Level 0.5~1.5Vp-p
Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)
Filter Size: 37.5mm P0.5
Mount: CS-Mount (Adjustable Lens Postion)
Size, Approx. Weight: 48 × 59 × 79.4mm (w/h/d) 140g (Approx. 1.9 × 2.3 × 3.1in., 5.5oz.)



Camera Connector Wiring



Pin	Signal
1	+8-16VDC
2	N.C.
3	Video
4	Ground

VIDEO TYPE LENS

For cameras with standard wiring for Video type lenses (Rainbow, Panasonic, Sanyo, Sony, etc.)

Note: Some brands (incl. Everfocus, Javelin, Watec) use the same 4-pin connector with non-standard wiring. **To avoid camera damage, compare wiring instructions in camera box to this diagram.**

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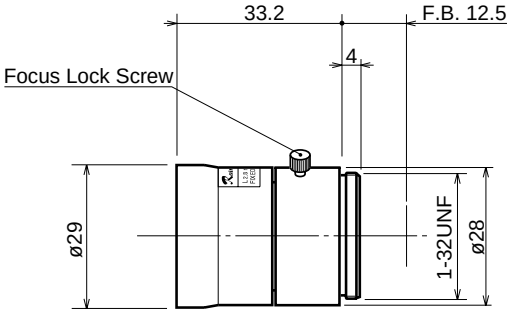
L28CS

2.8mm F1.3 – CS-Mount

Compatible with 1/3” & 1/4” Cameras

Focal Length:		2.8mm
Max. Relative Aperture:		1:1.3
Iris:		Without Iris
Angular Field of View:		1/3": 92.0° × 71.7° 1/4”: 68.2° × 51.5°
Min. Object Distance (M.O.D.):		0.1m (From Front Vertex)
Optical Back Focal Distance:		8.5mm (In Air)
Operation:	Focus:	Manual
	Iris:	Without Iris
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		None
Size, Approx. Weight:		ø29 x 33.2mm, 35g (Approx. ø1.2 × 1.3in., 1.2oz.)

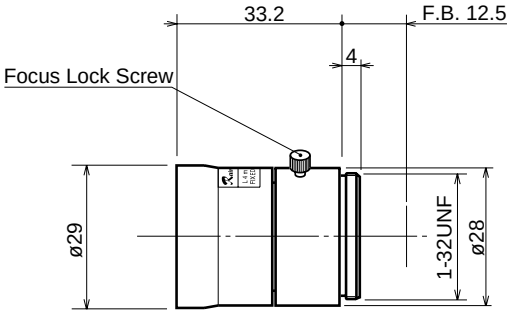


L4CS

4mm F1.2 – CS-Mount

Compatible with 1/3” & 1/4” Cameras

Focal Length:		4mm
Max. Relative Aperture:		1:1.2
Iris:		Without Iris
Angular Field of View:		1/3": 70.7° × 53.41° 1/4”: 49.1° × 37.3°
Min. Object Distance (M.O.D.):		0.1m (From Front Vertex)
Optical Back Focal Distance:		9.0mm (In Air)
Operation:	Focus:	Manual
	Iris:	Without Iris
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		None
Size, Approx. Weight:		ø29 × 33.2mm, 35g (Approx. ø1.2 × 1.3in., 1.2oz.)

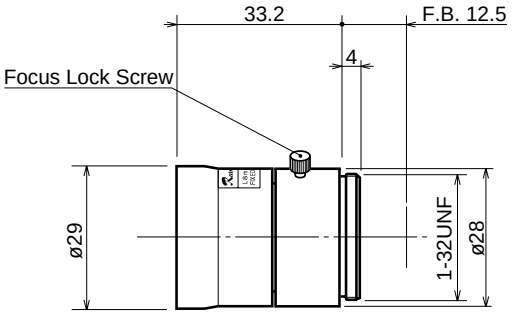


L8CS

8mm F1.2 – CS-Mount

Compatible with 1/3” & 1/4” Cameras

Focal Length:		8mm
Max. Relative Aperture:		1:1.2
Iris:		Without Iris
Angular Field of View:		1/3": 35.7° × 26.4° 1/4”: 26.4° × 19.2°
Min. Object Distance (M.O.D.):		0.1m (From Front Vertex)
Optical Back Focal Distance:		10.7mm (In Air)
Operation:	Focus:	Manual
	Iris:	Without Iris
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		None
Size, Approx. Weight:		ø29 × 33.2mm, 35g (Approx. ø1.2 × 1.3in., 1.2oz.)

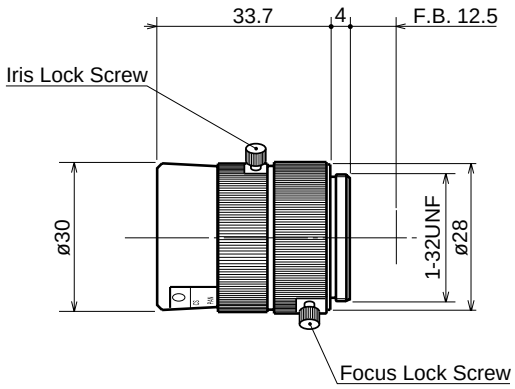


L28CSWI

2.8mm F1.3 – CS-Mount

Compatible with 1/3” & 1/4” Cameras

Focal Length:		2.8mm
Max. Relative Aperture:		1:1.3
Iris:		F1.3~Close
Angular Field of View:		1/3": 91.7° × 68.2° 1/4”: 68.2° × 51.5°
Min. Object Distance (M.O.D.):		0.1m (From Front Vertex)
Optical Back Focal Distance:		8.5mm (In Air)
Operation:	Focus:	Manual
	Iris:	Manual
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		None
Size, Approx. Weight:		ø30 × 33.7mm, 35g (Approx. ø1.2 x 1.3in., 1.2oz.)

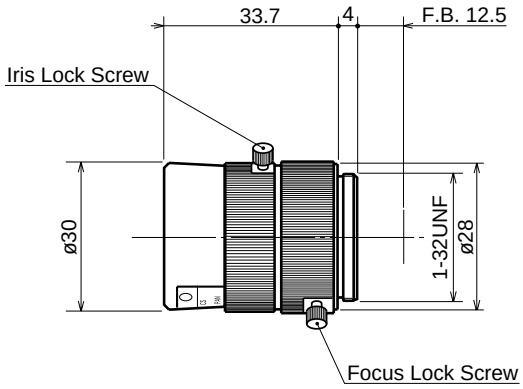


L4CSWI

4mm F1.2 – CS-Mount

Compatible with 1/3” & 1/4” Cameras

Focal Length:		4mm
Max. Relative Aperture:		1:1.2
Iris:		F1.2~Close
Angular Field of View:		1/3": 63.9° × 49.1° 1/4”: 49.1° × 37.3°
Min. Object Distance (M.O.D.):		0.1m (From Front Vertex)
Optical Back Focal Distance:		9.0mm (In Air)
Operation:	Focus:	Manual
	Iris:	Manual
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		None
Size, Approx. Weight:		ø30 × 33.7mm, 35g (Approx. ø1.2 × 1.3in., 1.23oz.)

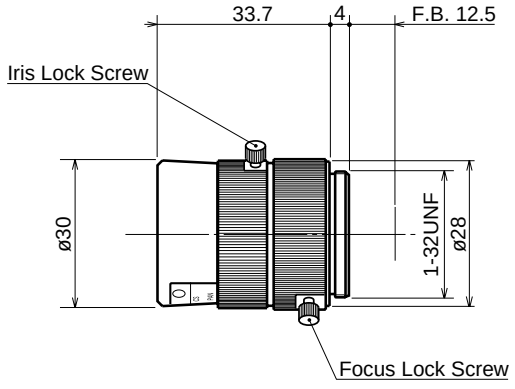


L8CSWI

8mm F1.2 – CS-Mount

Compatible with 1/3” & 1/4” Cameras

Focal Length:		8mm
Max. Relative Aperture:		1:1.2
Iris:		F1.2~Close
Angular Field of View:		1/3": 37.7° × 27.7° 1/4”: 25.4° × 19.2°
Min. Object Distance (M.O.D.):		0.1m (From Front Vertex)
Optical Back Focal Distance:		10.7mm (In Air)
Operation:	Focus:	Manual
	Iris:	Manual
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		None
Size, Approx. Weight:		ø30 × 33.7mm, 35g (Approx. ø1.2 × 1.3in., 1.23oz.)

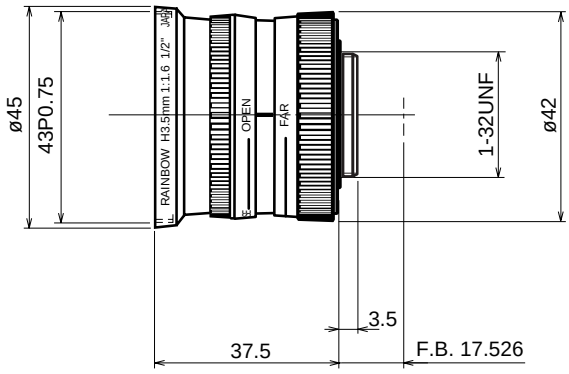


H35CSWI

3.5mm F1.6 – CS-Mount

Compatible with 1/2”, 1/3” & 1/4” Cameras

Focal Length:		3.5mm
Max. Relative Aperture:		1:1.6
Iris:		F1.6~Close
Angular Field of View:		1/2": 84.9° × 68.9°
		1/3": 68.9° × 54.4°
		1/4”: 54.4° × 42.2°
Min. Object Distance (M.O.D.):		0.1m (From Front Vertex)
Optical Back Focal Distance:		11.45mm (In Air)
Operation:	Focus:	Manual
	Iris:	Manual
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		43mm P0.75
Size, Approx. Weight:		ø45 × 42.5mm, 90g
		(Approx. ø1.8 × 1.7in., 3.1oz.)

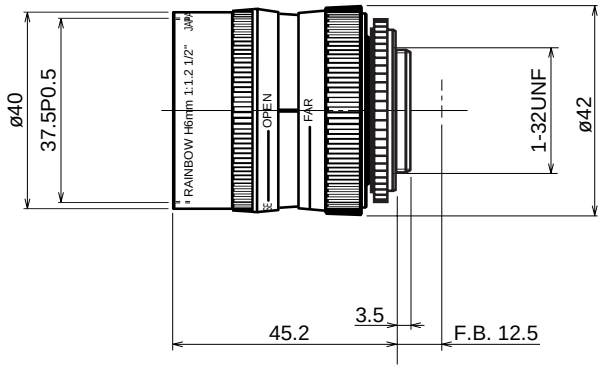


H6CSWI

6mm F1.2 – CS-Mount

Compatible with 1/2”, 1/3” & 1/4” Cameras

Focal Length:		6mm
Max. Relative Aperture:		1:1.2
Iris:		F1.2~Close
Angular Field of View:		1/2": 56.1° × 43.6°
		1/3": 43.6° × 33.4°
		1/4”: 33.4° × 25.4°
Min. Object Distance (M.O.D.):		0.2m (From Front Vertex)
Optical Back Focal Distance:		12.12mm (In Air)
Operation:	Focus:	Manual
	Iris:	Manual
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		37.5mm P0.5
Size, Approx. Weight:		ø40 × 45.2mm, 90g
		(Approx. ø1.6 × 1.8in., 3.1oz.)

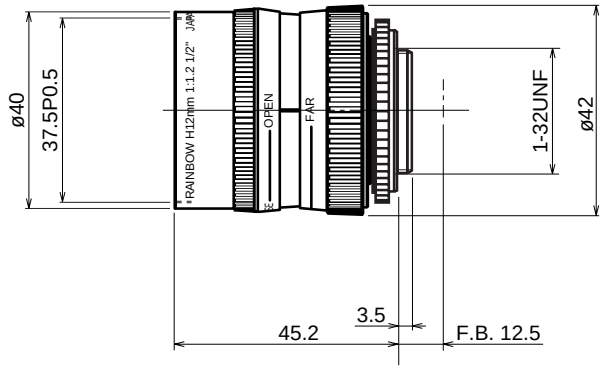


H12CSWI

12mm F1.2 – CS-Mount

Compatible with 1/2”, 1/3” & 1/4” Cameras

Focal Length:		12mm
Max. Relative Aperture:		1:1.2
Iris:		F1.2~Close
Angular Field of View:		1/2": 29.9° × 22.6°
		1/3": 22.6° × 17.1°
		1/4”: 17.1° × 12.8°
Min. Object Distance (M.O.D.):		0.3m (From Front Vertex)
Optical Back Focal Distance:		12.66mm (In Air)
Operation:	Focus:	Manual
	Iris:	Manual
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		37.5mm P0.5
Size, Approx. Weight:		ø40 × 45.2mm, 90g
		(Approx. ø1.6 × 1.8in., 3.1oz.)

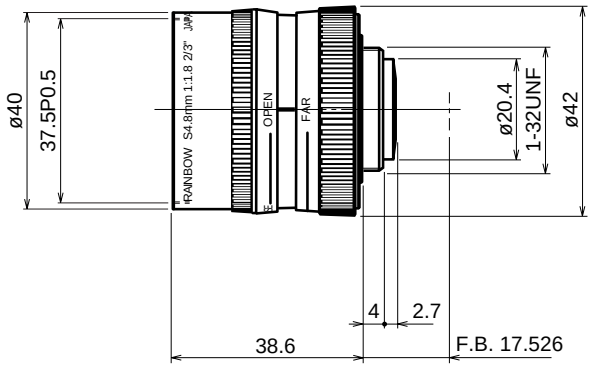


S48WI

4.8mm F1.8 – C-Mount

Compatible with 2/3”, 1/2”, 1/3” & 1/4” Cameras

Focal Length:		4.8mm
Max. Relative Aperture:		1:1.8
Iris:		F1.8~Close
Angular Field of View:		2/3": 85.0° × 69.0°
		1/2": 67.4° × 53.1°
		1/3": 53.1° × 41.1°
		1/4”: 41.1° × 31.4°
Min. Object Distance (M.O.D.):		0.2m (From Front Vertex)
Optical Back Focal Distance:		10.86mm (In Air)
Operation:	Focus:	Manual
	Iris:	Manual
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		37.5mm P0.5
Size, Approx. Weight:		ø42.0 × 38.6mm, 70g
		(Approx. ø1.7 × 1.6in., 2.5oz.)

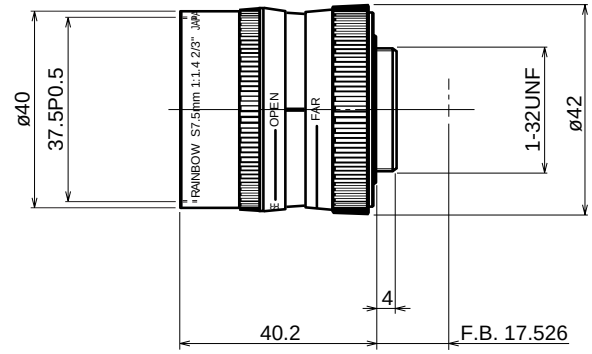


S75WI

7.5mm F1.4 – C-Mount

Compatible with 2/3”, 1/2”, 1/3” & 1/4” Cameras

Focal Length:		7.5mm
Max. Relative Aperture:		1:1.4
Iris:		F1.4~Close
Angular Field of View:		2/3": 60.8° × 47.5°
		1/2": 46.2° × 35.5°
		1/3": 35.5° × 27.0°
		1/4”: 27.0° × 6.2°
Min. Object Distance (M.O.D.):		0.2m (From Front Vertex)
Optical Back Focal Distance:		14.04mm (In Air)
Operation:	Focus:	Manual
	Iris:	Manual
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		37.5mm P0.5
Size, Approx. Weight:		ø42.0 × 40.2mm, 70g
		(Approx. ø1.7 × 1.6in., 2.5oz.)

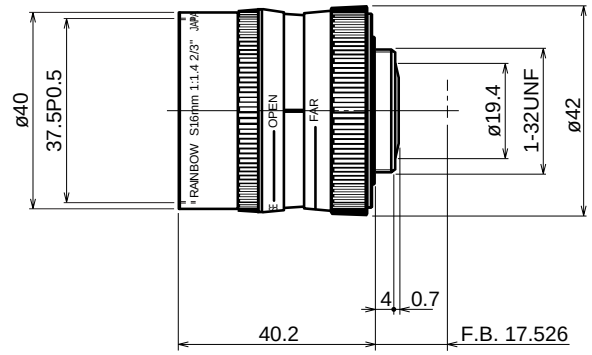


S16WI

16mm F1.4 – C-Mount

Compatible with 2/3”, 1/2”, 1/3” & 1/4” Cameras

Focal Length:		16mm
Max. Relative Aperture:		1:1.4
Iris:		F1.4~Close
Angular Field of View:		2/3": 30.8° × 23.3°
		1/2": 22.6° × 17.1°
		1/3": 17.1° × 12.9°
		1/4”: 12.9° × 6.2°
Min. Object Distance (M.O.D.):		0.4m (From Front Vertex)
Optical Back Focal Distance:		14.20mm (In Air)
Operation:	Focus:	Manual
	Iris:	Manual
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		37.5mm P0.5
Size, Approx. Weight:		ø42.0 × 40.2mm,60g
		(Approx. ø1.7 × 1.6in., 2.1oz.)

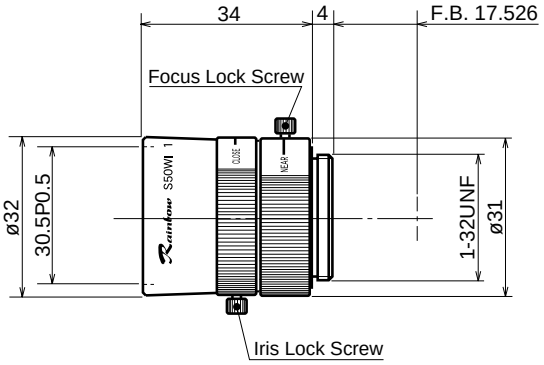


S50WI

50mm F1.8 – C-Mount

Compatible with 2/3”, 1/2”, 1/3” & 1/4” Cameras

Focal Length:		50mm
Max. Relative Aperture:		1:1.8
Iris:		F1.8~Close
Angular Field of View:		2/3": 10.1° × 7.6° 1/2": 7.3° × 5.5° 1/3": 5.5° × 4.1° 1/4”: 4.1° × 3.1°
Min. Object Distance (M.O.D.):		0.7m (From Front Vertex)
Optical Back Focal Distance:		15.5mm (In Air)
Operation:	Focus:	Manual
	Iris:	Manual
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		30.5mm P0.5
Size, Approx. Weight:		ø32.0 × 34mm, 65g (Approx. ø1.3 × 1.3in., 2.3oz.)



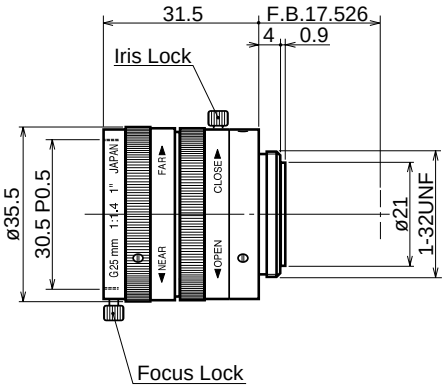
G25WI

25mm F1.4 – C-Mount

Compatible with 1”, 2/3”, 1/2”, 1/3” & 1/4” Cameras

Focal Length:		25mm
Max. Relative Aperture:		1:1.4
Iris:		F1.4~Close
Angular Field of View:		1": 28.7° × 21.7° 2/3": 20.0° × 15.0° 1/2": 14.6° × 11.0° 1/3": 11.0° × 8.2° 1/4": 8.2° × 6.2°
Min. Object Distance (M.O.D.):		0.5m (From Front Vertex)
Optical Back Focal Distance:		14.32mm (In Air)
Operation:	Focus:	Manual
	Iris:	Manual
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		30.5mm P0.5
Size, Approx. Weight:		ø35.5 × 31.5mm, 90g (Approx. ø1.4 × 1.3in., 3.2oz.)

METAL BODY



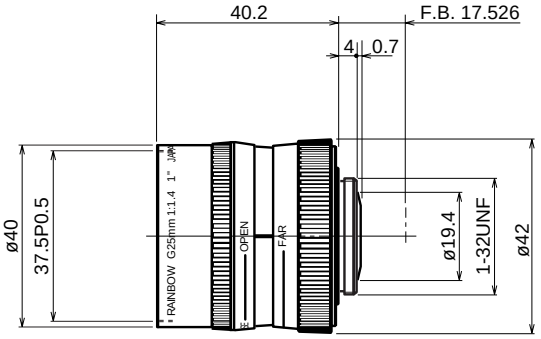
G25MWI

25mm F1.4 – C-Mount

Compatible with 1”, 2/3”, 1/2”, 1/3” & 1/4” Cameras

Focal Length:		25mm
Max. Relative Aperture:		1:1.4
Iris:		F1.4~Close
Angular Field of View:		1": 28.7° × 21.7° 2/3": 20.0° × 15.0° 1/2": 14.6° × 11.0° 1/3": 11.0° × 8.2° 1/4": 8.2° × 6.2°
Min. Object Distance (M.O.D.):		0.5m (From Front Vertex)
Optical Back Focal Distance:		14.32mm (In Air)
Operation:	Focus:	Manual
	Iris:	Manual
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		37.5mm P0.5
Size, Approx. Weight:		ø42 × 40.2mm, 65g (Approx. ø1.7 × 1.6in., 2.3oz.)

ABS BODY



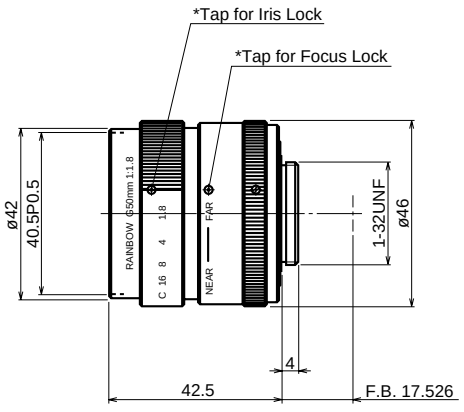
G50WI

50mm F1.8 – C-Mount

Compatible with 1”, 2/3”, 1/2”, 1/3” & 1/4” Cameras

Focal Length:		50mm
Max. Relative Aperture:		1:1.8
Iris:		F1.8~Close
Angular Field of View:		1": 14.5° × 10.9° 2/3": 10.1° × 7.6° 1/2": 7.3° × 5.5° 1/3": 5.5° × 4.1° 1/4": 4.1° × 3.1°
Min. Object Distance (M.O.D.):		0.7m (From Front Vertex)
Optical Back Focal Distance:		19.71mm (In Air)
Operation:	Focus:	Manual
	Iris:	Manual
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		40.5mm P0.5
Size, Approx. Weight:		ø46 × 42.5mm, 145g (Approx. ø1.8 × 1.7in., 5.1oz.)

METAL BODY



NOTE) * Lock screws sold separately.

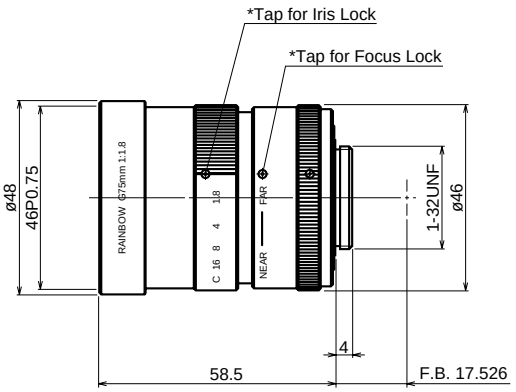
G75WI

75mm F1.8 – C-Mount

Compatible with 1”, 2/3”, 1/2”, 1/3” & 1/4” Cameras

Focal Length:		75mm
Max. Relative Aperture:		1:1.8
Iris:		F1.8~Close
Angular Field of View:		1": 9.7° × 7.3° 2/3": 6.7° × 5.0° 1/2": 4.9° × 3.7° 1/3": 3.7° × 2.8° 1/4”: 2.8° × 2.1°
Min. Object Distance (M.O.D.):		0.8m (From Front Vertex)
Optical Back Focal Distance:		21.85mm (In Air)
Operation:	Focus:	Manual
	Iris:	Manual
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		46mm P0.75
Size, Approx. Weight:		ø48 × 58.5mm, 245g (Approx. ø1.9 × 2.3in., 8.6oz.)

METAL BODY



NOTE) * Lock screws sold separately.

L28DC4P

2.8mm F1.3 – CS-Mount

Compatible with 1/3” & 1/4” Cameras

Focal Length: 2.8mm

Max. Relative Aperture: 1:1.3

Iris: F1.3~Approx. F360
With ND Spot Filter

Angular Field of View: 1/3": 92.0° × 71.7°
1/4”: 68.2° × 51.5°

Min. Object Distance (M.O.D.): 0.1m (From Front Vertex)

Optical Back Focal Distance: 8.5mm (In Air)

Operation: Focus: Manual
Iris: IG (Auto-Close System)

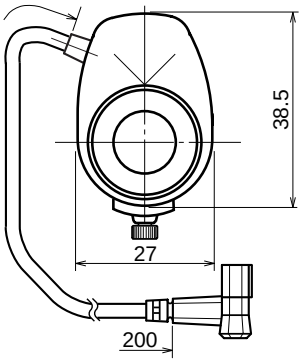
Operation Voltage: Close to Open: Less than 3V
Open to Close: More than 0.5V

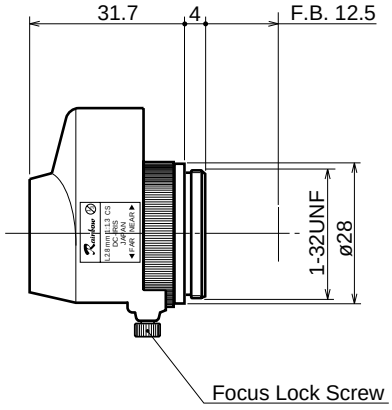
Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

Filter Size: None

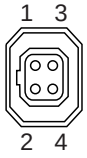
Mount: CS-Mount
(Adjustable Lens Postion)

Size, Approx. Weight: 27 × 38.5 × 31.7mm (w/h/d), 50g
(Approx. 1.1 × 1.5 × 1.2in., 1.8oz.)





Camera Connector Wiring



Pin	Signal
1	Brake – *
2	Brake + *
3	Drive +
4	Drive –

* Also referred to as DAMP, CONTROL, or DUMP

L4DC4P

4mm F1.2 – CS-Mount

Compatible with 1/3” & 1/4” Cameras

Focal Length: 4mm

Max. Relative Aperture: 1:1.2

Iris: F1.2~Approx. F360
With ND Spot Filter

Angular Field of View: 1/3": 63.9° × 49.1°
1/4”: 49.1° × 37.3°

Min. Object Distance (M.O.D.): 0.1m (From Front Vertex)

Optical Back Focal Distance: 9.0mm (In Air)

Operation: Focus: Manual
Iris: IG (Auto-Close System)

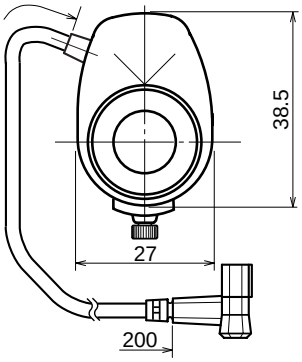
Operation Voltage: Close to Open: Less than 3V
Open to Close: More than 0.5V

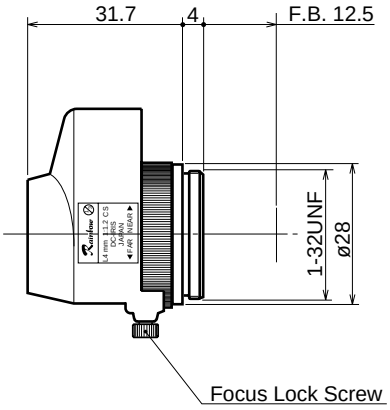
Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

Filter Size: None

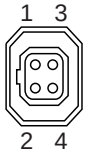
Mount: CS-Mount
(Adjustable Lens Postion)

Size, Approx. Weight: 27 × 38.5 × 31.7mm (w/h/d), 50g
(Approx. 1.1 × 1.5 × 1.2in., 1.8oz.)





Camera Connector Wiring



Pin	Signal
1	Brake – *
2	Brake + *
3	Drive +
4	Drive –

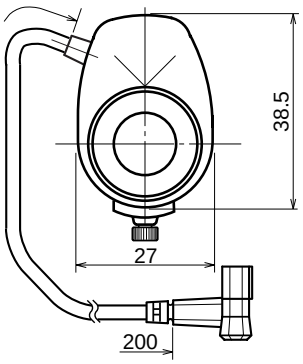
* Also referred to as DAMP, CONTROL, or DUMP

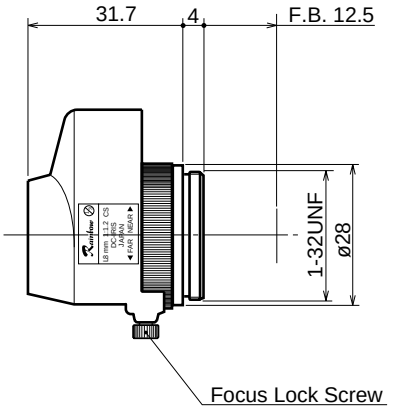
L8DC4P

8mm F1.2 – CS-Mount

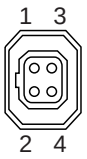
Compatible with 1/3” & 1/4” Cameras

Focal Length:		8mm
Max. Relative Aperture:		1:1.2
Iris:		F1.2~Approx. F360 With ND Spot Filter
Angular Field of View:		1/3": 37.5° × 27.7° 1/4”: 25.4° × 19.1°
Min. Object Distance (M.O.D.):		0.1m (From Front Vertex)
Optical Back Focal Distance:		10.7mm (In Air)
Operation:	Focus: Iris:	Manual IG (Auto-Close System)
Operation Voltage:		Close to Open: Less than 3V Open to Close: More than 0.5V
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		None
Mount:		CS-Mount (Adjustable Lens Postion)
Size, Approx. Weight:		27 × 38.5 × 31.7mm (w/h/d), 50g (Approx. 1.1 × 1.5 × 1.2in., 1.8oz.)





Camera Connector Wiring



Pin	Signal
1	Brake – *
2	Brake + *
3	Drive +
4	Drive –

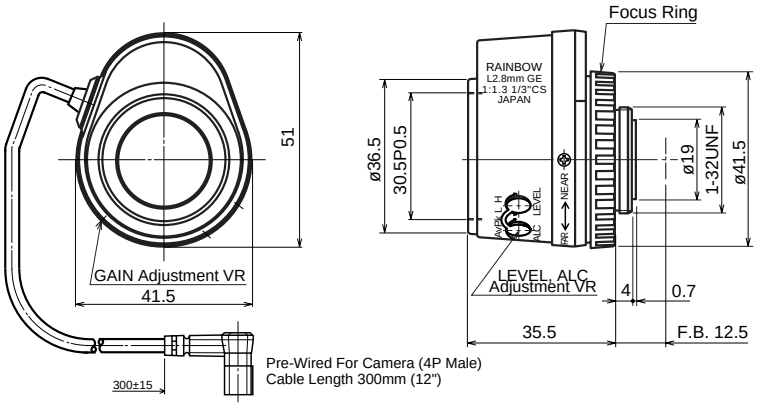
* Also referred to as DAMP, CONTROL, or DUMP

L28GECS

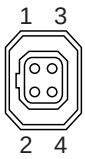
2.8mm F1.3 – CS-Mount

Compatible with 1/3” & 1/4” Cameras

Focal Length:		2.8mm
Max. Relative Aperture:		1:1.3
Iris:		F1.3~Approx. F360 With ND Spot Filter
Angular Field of View:		1/3": 87.6° × 68.2° 1/4": 68.2° × 51.5°
Min. Object Distance (M.O.D.):		0.2m (From Front Vertex)
Optical Back Focal Distance:		8.5mm (In Air)
Operation:	Focus:	Manual
	Iris:	Auto (DC+8~16V: Fixed Voltage, Max. 40mA) Auto-Close System Speed Within 4 sec.
Auto-Iris Accuracy:		With Input Video Signal 0.7Vp-p Within ±10% of Mean Value
Auto-Iris Input Signal:		Composite Video Signal or Video Signal
Input Impedance:		High Impedance
Sensitivity Adjustment:		Image Signal Level 0.5~1.5Vp-p
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		30.5mm P0.5
Mount:		CS-Mount (Adjustable Lens Postion)
Size, Approx. Weight:		41.5 × 51 × 35.5mm (w/h/d), 55g (Approx. 1.6 × 2.0 × 3.8in., 2.0 oz.)



Camera Connector Wiring



Pin	Signal
1	+8-16VDC
2	N.C.
3	Video
4	Ground

VIDEO TYPE LENS

For cameras with standard wiring for Video type lenses (Rainbow, Panasonic, Sanyo, Sony, etc.)

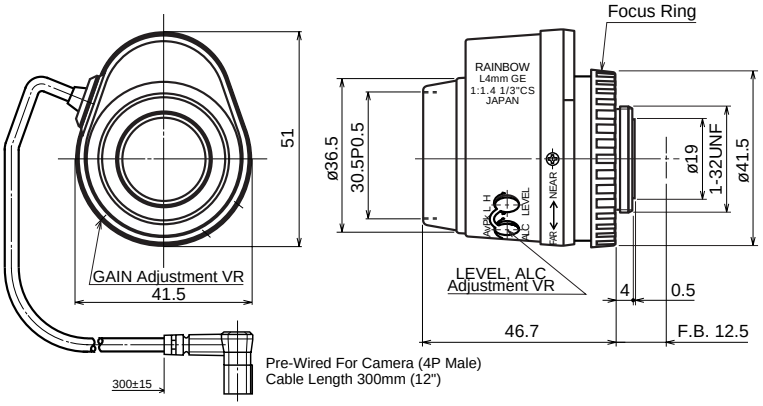
Note: Some brands (incl. Everfocus, Javelin, Watec) use the same 4-pin connector with non-standard wiring. **To avoid camera damage, compare wiring instructions in camera box to this diagram.**

L4GECS

4mm F1.4 – CS-Mount

Compatible with 1/3” & 1/4” Cameras

Focal Length:		4mm
Max. Relative Aperture:		1:1.4
Iris:		F1.4~Approx. F360 With ND Spot Filter
Angular Field of View:		1/3": 63.9° × 49.1° 1/4": 49.1° × 37.3°
Min. Object Distance (M.O.D.):		0.2m (From Front Vertex)
Optical Back Focal Distance:		8.5mm (In Air)
Operation:	Focus:	Manual
	Iris:	Auto (DC+8~16V: Fixed Voltage, Max. 40mA) Auto-Close System Speed Within 4 sec.
Auto-Iris Accuracy:		With Input Video Signal 0.7Vp-p Within ±10% of Mean Value
Auto-Iris Input Signal:		Composite Video Signal or Video Signal
Input Impedance:		High Impedance
Sensitivity Adjustment:		Image Signal Level 0.5~1.5Vp-p
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		30.5mm P0.5
Mount:		CS-mount (Adjustable Lens Postion)
Size, Approx. Weight:		41.5 × 51 × 46.7mm (w/h/d), 70g (Approx. 1.6 × 2.0 × 1.8in., 2.5 oz.)



Camera Connector Wiring

Pin	Signal
1	+8-16VDC
2	N.C.
3	Video
4	Ground

VIDEO TYPE LENS

For cameras with standard wiring for Video type lenses (Rainbow, Panasonic, Sanyo, Sony, etc.)

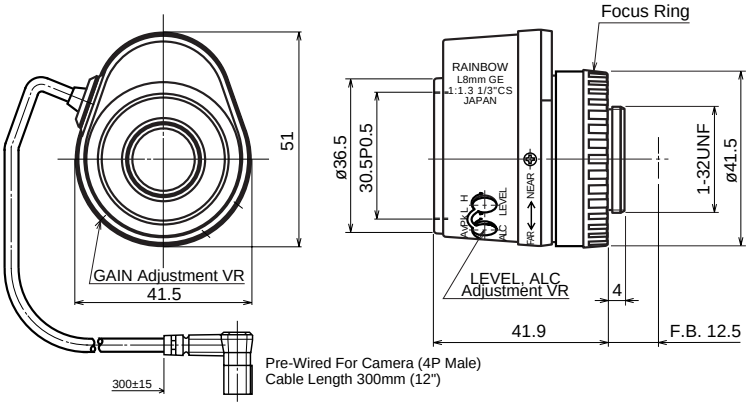
Note: Some brands (incl. Everfocus, Javelin, Watec) use the same 4-pin connector with non-standard wiring. **To avoid camera damage, compare wiring instructions in camera box to this diagram.**

L8GECS

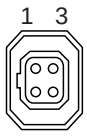
8mm F1.3 – CS-Mount

Compatible with 1/3" & 1/4" Cameras

Focal Length:		8mm
Max. Relative Aperture:		1:1.3
Iris:		F1.3~Approx. F360 With ND Spot Filter
Angular Field of View:		1/3": 33.4° × 25.4° 1/4": 25.4° × 19.2°
Min. Object Distance (M.O.D.):		0.2m (From Front Vertex)
Optical Back Focal Distance:		8.5mm (In Air)
Operation:	Focus: Iris:	Manual Auto (DC+8~16V: Fixed Voltage, Max. 40mA) Auto-Close System Speed Within 4 sec.
Auto-Iris Accuracy:		With Input Video Signal 0.7Vp-p Within ±10% of Mean Value
Auto-Iris Input Signal:		Composite Video Signal or Video Signal
Input Impedance:		High Impedance
Sensitivity Adjustment:		Image Signal Level 0.5~1.5Vp-p
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		30.5mm P0.5
Mount:		CS-Mount (Adjustable Lens Postion)
Size, Approx. Weight:		41.5 × 51 × 35.5mm (w/h/d), 65g (Approx. 1.6 × 2.0 × 1.4in., 2.3 oz.)



Camera Connector Wiring



Pin	Signal
1	+8-16VDC
2	N.C.
3	Video
4	Ground

VIDEO TYPE LENS

For cameras with standard wiring for Video type lenses (Rainbow, Panasonic, Sanyo, Sony, etc.)

Note: Some brands (incl. Everfocus, Javelin, Watec) use the same 4-pin connector with non-standard wiring. **To avoid camera damage, compare wiring instructions in camera box to this diagram.**

L35DC4P

3.5mm F1.6 – CS-Mount

Compatible with 1/2”, 1/3” & 1/4” Cameras

Focal Length: 3.5mm

Max. Relative Aperture: 1:1.6

Iris: F1.6~Approx. F360
With ND Spot Filter

Angular Field of View: 1/2": 84.9° × 68.9°
1/3": 68.9° × 54.4°
1/4”: 54.4° × 42.2°

Min. Object Distance (M.O.D.): 0.1m (From Front Vertex)

Optical Back Focal Distance: 11.45mm (In Air)

Operation: Focus: Manual
Iris: IG (Auto-Close System)

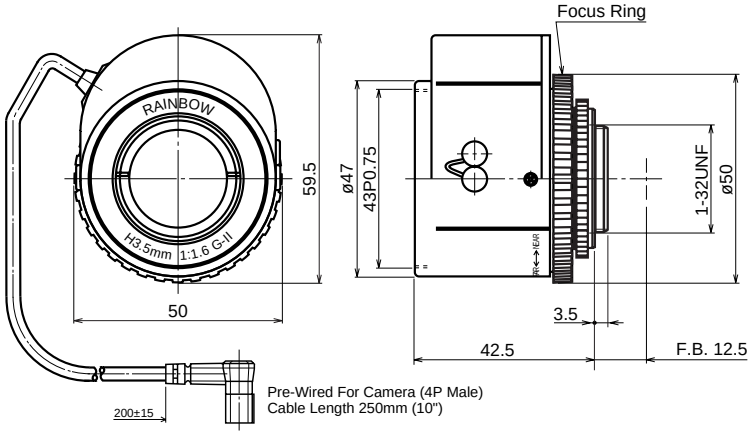
Operation Voltage: Close to Open: Less than 3V
Open to Close: More than 0.5V

Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

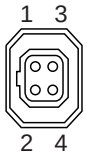
Filter Size: 43mm P0.75

Mount: CS-Mount
(Adjustable Lens Postion)

Size, Approx. Weight: 50 × 59.5 × 42.5mm (w/h/d), 85g
(Approx. 2.0 × 2.3 × 1.7in., 3.0oz.)



Camera Connector Wiring



Pin	Signal
1	Brake – *
2	Brake + *
3	Drive +
4	Drive –

* Also referred to as DAMP, CONTROL, or DUMP

L6DC4P

6mm F1.4 – CS-Mount

Compatible with 1/2”, 1/3” & 1/4” Cameras

Focal Length: 6mm

Max. Relative Aperture: 1:1.4

Iris: F1.4~Approx. F88
With ND Spot Filter

Angular Field of View: 1/2": 56.1° × 43.6°
1/3": 43.6° × 33.4°
1/4”: 33.4° × 25.4°

Min. Object Distance (M.O.D.): 0.2m (From Front Vertex)

Optical Back Focal Distance: 13.93mm (In Air)

Operation: Focus: Manual
Iris: IG (Auto-Close System)

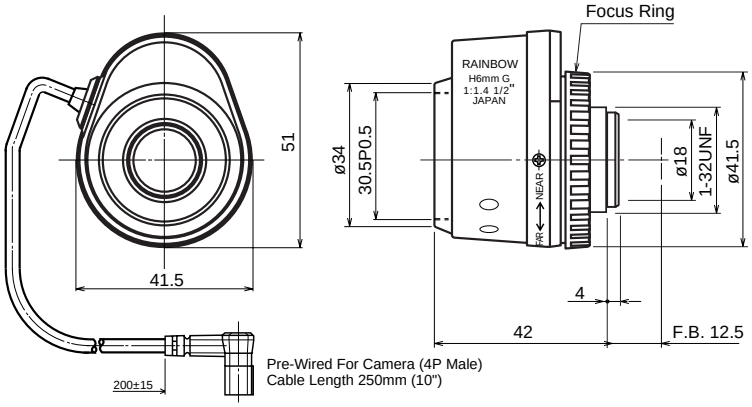
Operation Voltage: Close to Open: Less than 3V
Open to Close: More than 0.5V

Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

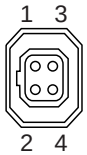
Filter Size: 30.5mm P0.5

Mount: CS-Mount
(Adjustable Lens Postion)

Size, Approx. Weight: 41.5 × 51 × 42mm (w/h/d), 60g
(Approx. 1.6 × 2.0 × 1.7in., 2.1oz.)



Camera Connector Wiring



Pin	Signal
1	Brake – *
2	Brake + *
3	Drive +
4	Drive –

* Also referred to as DAMP, CONTROL, or DUMP

L12DC4P

12mm F1.4 – CS-Mount

Compatible with 1/2”, 1/3” & 1/4” Cameras

Focal Length: 12mm

Max. Relative Aperture: 1:1.4

Iris: F1.4~Approx. F88
With ND Spot Filter

Angular Field of View: 1/2": 29.9° × 22.6°
1/3": 22.6° × 17.1°
1/4": 17.1° × 12.8°

Min. Object Distance (M.O.D.): 0.3m (From Front Vertex)

Optical Back Focal Distance: 13.87mm (In Air)

Operation: Focus: Manual
Iris: IG (Auto-Close System)

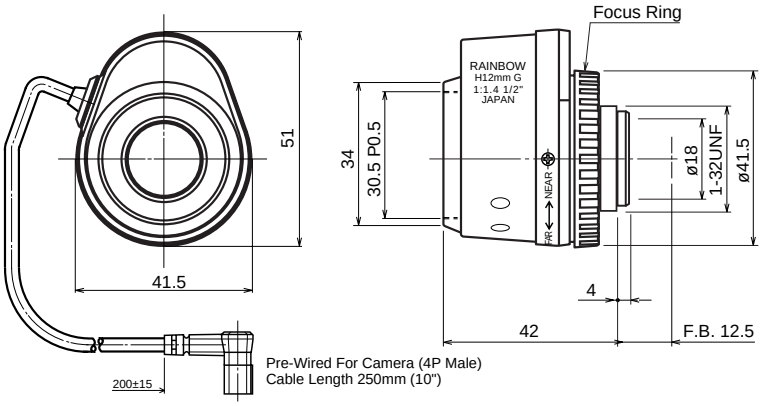
Operation Voltage: Close to Open: Less than 3V
Open to Close: More than 0.5V

Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

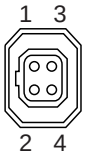
Filter Size: 30.5mm P0.5

Mount: CS-Mount
(Adjustable Lens Postion)

Size, Approx. Weight: 41.5 × 51 × 42mm (w/h/d), 60g
(Approx. 1.6 × 2.0 × 1.7in., 2.1oz.)



Camera Connector Wiring



Pin	Signal
1	Brake – *
2	Brake + *
3	Drive +
4	Drive –

* Also referred to as DAMP, CONTROL, or DUMP

L16DC4P

16mm F1.4 – CS-Mount

Compatible with 1/2”, 1/3” & 1/4” Cameras

Focal Length: 16mm

Max. Relative Aperture: 1:1.4

Iris: F1.4~Approx. F360
With ND Spot Filter

Angular Field of View: 1/2": 22.6° × 17.1°
1/3": 17.1° × 12.9°
1/4": 12.9° × 9.6°

Min. Object Distance (M.O.D.): 0.4m (From Front Vertex)

Optical Back Focal Distance: 14.20mm (In Air)

Operation: Focus: Manual
Iris: IG (Auto-Close System)

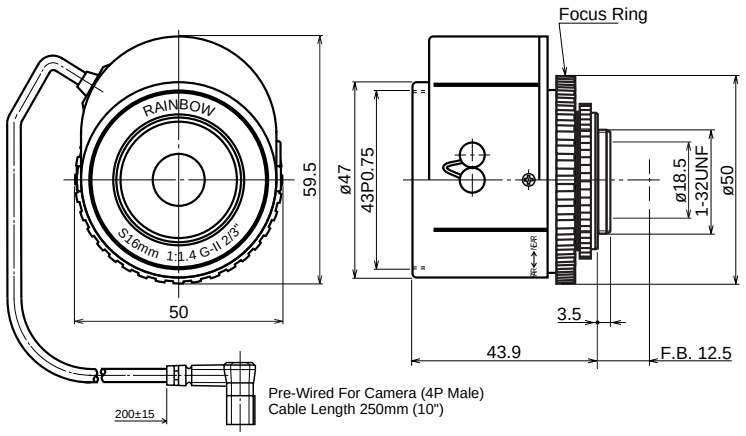
Operation Voltage: Close to Open: Less than 3V
Open to Close: More than 0.5V

Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

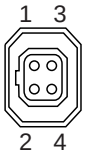
Filter Size: 43mm P0.75

Mount: CS-Mount
(Adjustable Lens Postion)

Size, Approx. Weight: 50 × 59.5 × 43.9mm (w/h/d), 70g
(Approx. 2.0 × 2.3 × 1.7in., 2.5oz.)



Camera Connector Wiring



Pin	Signal
1	Brake – *
2	Brake + *
3	Drive +
4	Drive –

* Also referred to as DAMP, CONTROL, or DUMP

L25DC4P

25mm F1.4 – CS-Mount

Compatible with 1/2”, 1/3” & 1/4” Cameras

Focal Length: 25mm

Max. Relative Aperture: 1:1.4

Iris: F1.4~Approx. F360
With ND Spot Filter

Angular Field of View: 1/2": 14.6° × 11.0°
1/3": 11.0° × 8.2°
1/4": 8.2° × 6.2°

Min. Object Distance (M.O.D.): 0.5m (From Front Vertex)

Optical Back Focal Distance: 14.32mm (In Air)

Operation: Focus: Manual
Iris: IG (Auto-Close System)

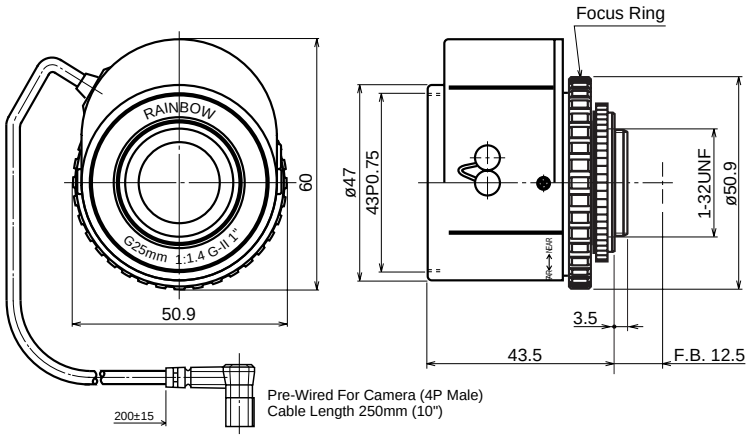
Operation Voltage: Close to Open: Less than 3V
Open to Close: More than 0.5V

Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

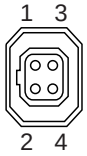
Filter Size: 43mm P0.75

Mount: CS-Mount
(Adjustable Lens Postion)

Size, Approx. Weight: 50.9 × 60 × 43.5mm (w/h/d), 95g
(Approx. 2.0 × 2.4 × 1.7in., 3.4oz.)



Camera Connector Wiring



Pin	Signal
1	Brake – *
2	Brake + *
3	Drive +
4	Drive –

* Also referred to as DAMP, CONTROL, or DUMP

L50DC4P

50mm F1.8 – CS-Mount

Compatible with 1/2”, 1/3” & 1/4” Cameras

Focal Length: 50mm

Max. Relative Aperture: 1:1.8

Iris: F1.8~Approx. F360
With ND Spot Filter

Angular Field of View: 1/2": 7.3° × 5.5°
1/3": 5.5° × 4.1°
1/4": 4.1° × 3.1°

Min. Object Distance (M.O.D.): 0.7m (From Front Vertex)

Optical Back Focal Distance: 19.71mm (In Air)

Operation: Focus: Manual
Iris: IG (Auto-Close System)

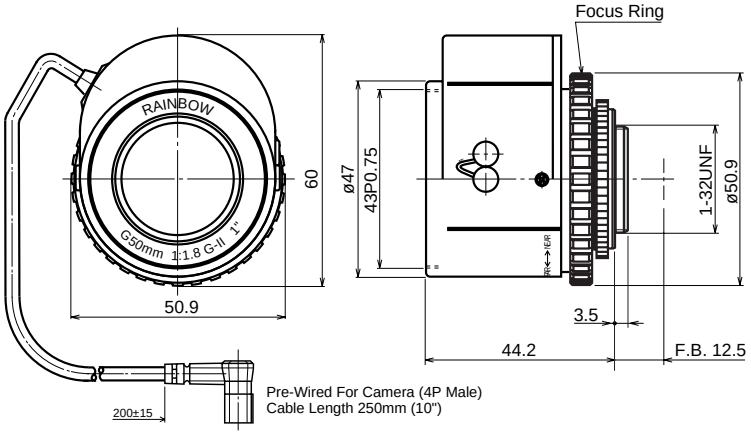
Operation Voltage: Close to Open: Less than 3V
Open to Close: More than 0.5V

Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

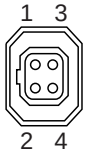
Filter Size: 43mm P0.75

Mount: CS-Mount
(Adjustable Lens Postion)

Size, Approx. Weight: 50.9 × 60 × 44.2mm (w/h/d), 125g
(Approx. 2.0 × 2.4 × 1.7in., 4.4oz.)



Camera Connector Wiring



Pin	Signal
1	Brake – *
2	Brake + *
3	Drive +
4	Drive –

* Also referred to as DAMP, CONTROL, or DUMP

L75DC4P

75mm F1.8 – CS-Mount

Compatible with 1/3” & 1/4” Cameras

Focal Length: 75mm

Max. Relative Aperture: 1:1.8

Iris: F1.8~Approx. F360
With ND Spot Filter

Angular Field of View: 1/2": 4.9° × 3.7°
1/3": 3.7° × 2.8°
1/4”: 2.8° × 2.1°

Min. Object Distance (M.O.D.): 0.8m (From Front Vertex)

Optical Back Focal Distance: 21.85mm (In Air)

Operation: Focus: Manual
Iris: IG (Auto-Close System)

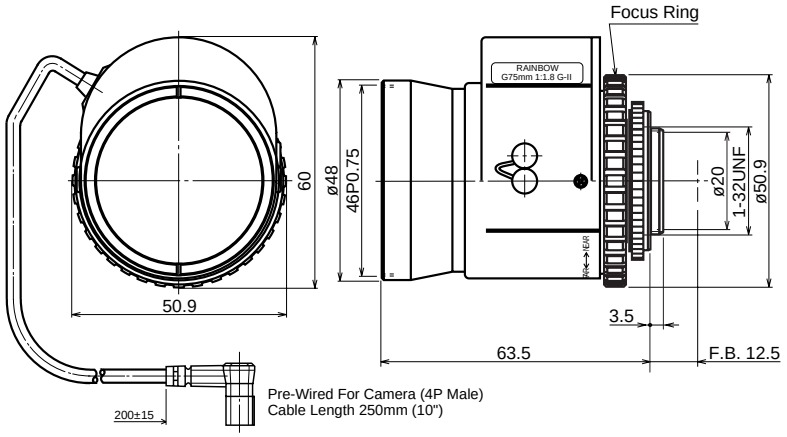
Operation Voltage: Close to Open: Less than 3V
Open to Close: More than 0.5V

Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

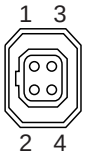
Filter Size: 46mm P0.75

Mount: CS-Mount
(Adjustable Lens Postion)

Size, Approx. Weight: 50.9 × 60 × 63.5mm (w/h/d), 200g
(Approx. 2.0 × 2.4 × 2.5in., 7.1oz.)



Camera Connector Wiring



Pin	Signal
1	Brake – *
2	Brake + *
3	Drive +
4	Drive –

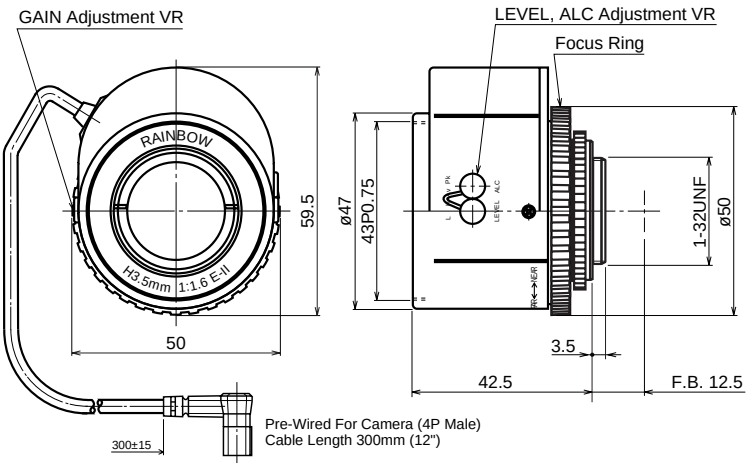
* Also referred to as DAMP, CONTROL, or DUMP

H35ECS

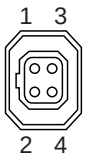
3.5mm F1.6 – CS-Mount

Compatible with 1/2”, 1/3” & 1/4” Cameras

Focal Length:		3.5mm
Max. Relative Aperture:		1:1.6
Iris:		F1.6~Approx. F360 With ND Spot Filter
Angular Field of View:		1/2": 84.9° × 68.9° 1/3": 68.9° × 54.4° 1/4": 54.4° × 42.2°
Min. Object Distance (M.O.D.):		0.2m (From Front Vertex)
Optical Back Focal Distance:		11.45mm (In Air)
Operation:	Focus:	Manual
	Iris:	Auto (DC+8~16V: Fixed Voltage, Max. 40mA) Auto-Close System Speed Within 4 sec.
Auto-Iris Accuracy:		With Input Video Signal 0.7Vp-p Within ±10% of Mean Value
Auto-Iris Input Signal:		Composite Video Signal or Video Signal
Input Impedance:		High Impedance
Sensitivity Adjustment:		Image Signal Level 0.5~1.5Vp-p
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		43mm P0.75
Mount:		CS-Mount, (Adjustable Lens Postion)
Size, Approx. Weight:		50 × 59.5 × 42.5mm (w/h/d), 85g (Approx. 2.0 × 2.3 × 1.7in., 3.0 oz.)



Camera Connector Wiring



Pin	Signal
1	+8-16VDC
2	N.C.
3	Video
4	Ground

VIDEO TYPE LENS

For cameras with standard wiring for Video type lenses (Rainbow, Panasonic, Sanyo, Sony, etc.)

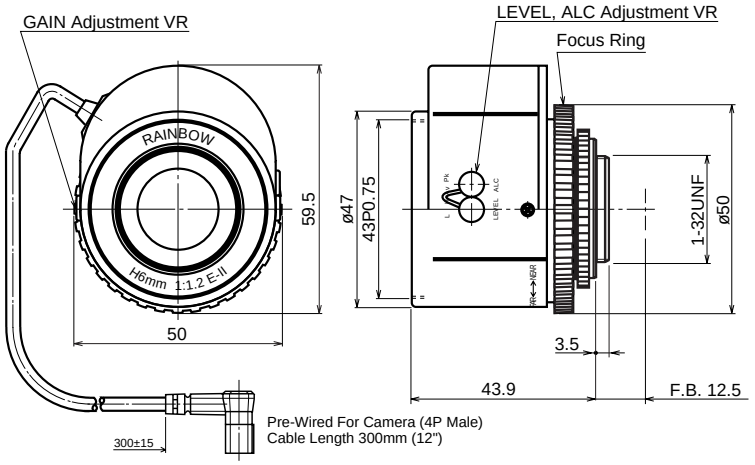
Note: Some brands (incl. Everfocus, Javelin, Watec) use the same 4-pin connector with non-standard wiring. **To avoid camera damage, compare wiring instructions in camera box to this diagram.**

H6ECS

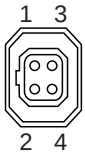
6mm F1.2 – CS-Mount

Compatible with 1/2”, 1/3” & 1/4” Cameras

Focal Length:		6mm
Max. Relative Aperture:		1:1.2
Iris:		F1.2~Approx. F360 With ND Spot Filter
Angular Field of View:		1/2": 56.1° × 43.6° 1/3": 43.6° × 33.4° 1/4": 33.4° × 25.4°
Min. Object Distance (M.O.D.):		0.2m (From Front Vertex)
Optical Back Focal Distance:		12.12mm (In Air)
Operation:	Focus:	Manual
	Iris:	Auto (DC+8~16V: Fixed Voltage, Max. 40mA) Auto-Close System Speed Within 4 sec.
Auto-Iris Accuracy:		With Input Video Signal 0.7Vp-p Within ±10% of Mean Value
Auto-Iris Input Signal:		Composite Video Signal or Video Signal
Input Impedance:		High Impedance
Sensitivity Adjustment:		Image Signal Level 0.5~1.5Vp-p
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		43mm P0.75
Mount:		CS-Mount, (Adjustable Lens Postion)
Size, Approx. Weight:		50 × 59.5 × 43.9mm (w/h/d), 85g (Approx. 2.0 × 2.3 × 1.7in., 3.0 oz.)



Camera Connector Wiring



Pin	Signal
1	+8-16VDC
2	N.C.
3	Video
4	Ground

VIDEO TYPE LENS

For cameras with standard wiring for Video type lenses (Rainbow, Panasonic, Sanyo, Sony, etc.)

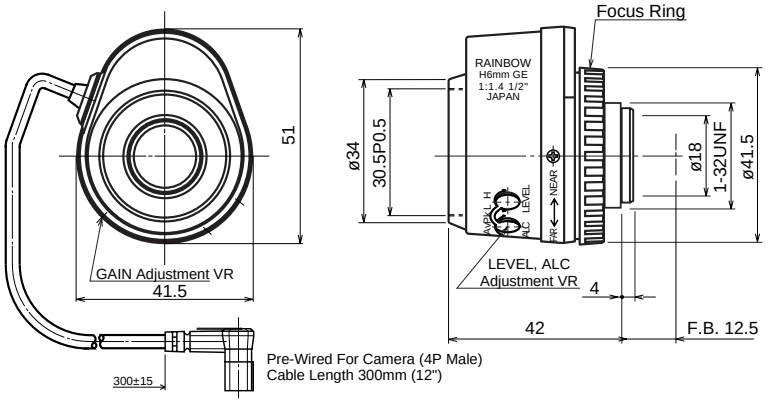
Note: Some brands (incl. Everfocus, Javelin, Watec) use the same 4-pin connector with non-standard wiring. **To avoid camera damage, compare wiring instructions in camera box to this diagram.**

H6GECS

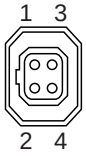
6mm F1.4 – CS-Mount

Compatible with 1/2", 1/3" & 1/4" Cameras

Focal Length:		6mm
Max. Relative Aperture:		1:1.4
Iris:		F1.4~Approx. F88 With ND Spot Filter
Angular Field of View:		1/2": 56.1° × 43.6° 1/3": 43.6° × 33.4° 1/4": 33.4° × 25.4°
Min. Object Distance (M.O.D.):		0.2m (From Front Vertex)
Optical Back Focal Distance:		13.93mm (In Air)
Operation:	Focus:	Manual
	Iris:	Auto (DC+8~16V: Fixed Voltage, Max. 40mA) Auto-Close System Speed Within 4 sec.
Auto-Iris Accuracy:		With Input Video Signal 0.7Vp-p Within ±10% of Mean Value
Auto-Iris Input Signal:		Composite Video Signal or Video Signal
Input Impedance:		High Impedance
Sensitivity Adjustment:		Image Signal Level 0.5~1.5Vp-p
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		30.5mm P0.5
Mount:		CS-Mount, (Adjustable Lens Postion)
Size, Approx. Weight:		41.5 × 51 × 42mm (w/h/d), 60g (Approx. 1.6 × 2.0 × 1.7in., 2.1 oz.)



Camera Connector Wiring



Pin	Signal
1	+8-16VDC
2	N.C.
3	Video
4	Ground

VIDEO TYPE LENS

For cameras with standard wiring for Video type lenses (Rainbow, Panasonic, Sanyo, Sony, etc.)

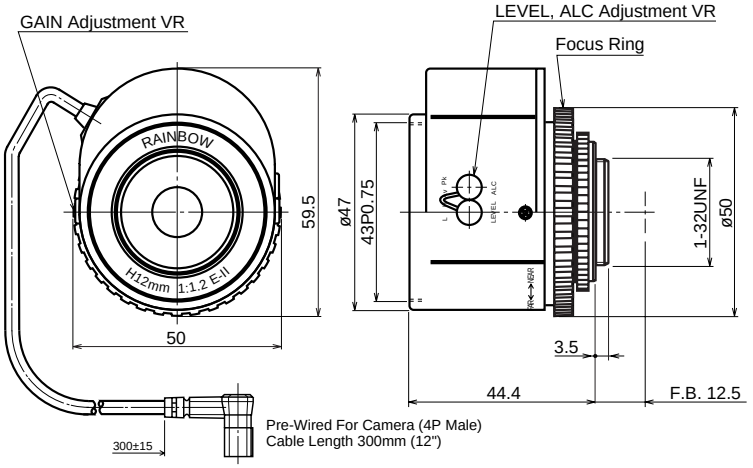
Note: Some brands (incl. Everfocus, Javelin, Watec) use the same 4-pin connector with non-standard wiring. **To avoid camera damage, compare wiring instructions in camera box to this diagram.**

H12ECS

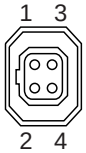
12mm F1.2 – CS-Mount

Compatible with 1/2", 1/3" & 1/4" Cameras

Focal Length:		12mm
Max. Relative Aperture:		1:1.2
Iris:		F1.2~Approx. F360 With ND Spot Filter
Angular Field of View:		1/2": 29.9° × 22.6° 1/3": 22.6° × 17.1° 1/4": 17.1° × 12.8°
Min. Object Distance (M.O.D.):		0.2m (From Front Vertex)
Optical Back Focal Distance:		12.66mm (In Air)
Operation:	Focus:	Manual
	Iris:	Auto (DC+8~16V: Fixed Voltage, Max. 40mA) Auto-Close System Speed Within 4 sec.
Auto-Iris Accuracy:		With Input Video Signal 0.7Vp-p Within ±10% of Mean Value
Auto-Iris Input Signal:		Composite Video Signal or Video Signal
Input Impedance:		High Impedance
Sensitivity Adjustment:		Image Signal Level 0.5~1.5Vp-p
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		43mm P0.75
Mount:		CS-Mount, (Adjustable Lens Postion)
Size, Approx. Weight:		50 × 59.5 × 44.4mm (w/h/d), 85g (Approx. 2.0 × 2.3 × 1.7in., 3.0 oz.)



Camera Connector Wiring



Pin	Signal
1	+8-16VDC
2	N.C.
3	Video
4	Ground

VIDEO TYPE LENS

For cameras with standard wiring for Video type lenses (Rainbow, Panasonic, Sanyo, Sony, etc.)

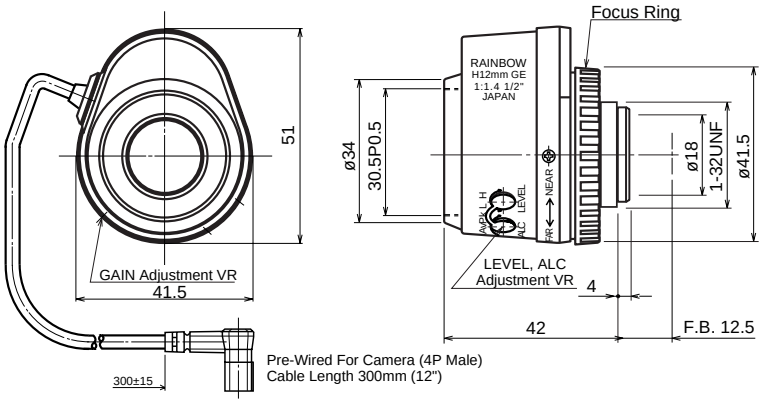
Note: Some brands (incl. Everfocus, Javelin, Watec) use the same 4-pin connector with non-standard wiring. **To avoid camera damage, compare wiring instructions in camera box to this diagram.**

H12GECS

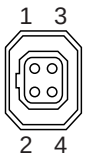
12mm F1.4 – CS-Mount

Compatible with 1/2”, 1/3” & 1/4” Cameras

Focal Length:		12mm
Max. Relative Aperture:		1:1.4
Iris:		F1.4~Approx. F88 With ND Spot Filter
Angular Field of View:		1/2": 29.9° × 22.6° 1/3": 22.6° × 17.1° 1/4": 17.1° × 12.8°
Min. Object Distance (M.O.D.):		0.2m (From Front Vertex)
Optical Back Focal Distance:		13.87mm (In Air)
Operation:	Focus:	Manual
	Iris:	Auto (DC+8~16V: Fixed Voltage, Max. 40mA) Auto-Close System Speed Within 4 sec.
Auto-Iris Accuracy:		With Input Video Signal 0.7Vp-p Within ±10% of Mean Value
Auto-Iris Input Signal:		Composite Video Signal or Video Signal
Input Impedance:		High Impedance
Sensitivity Adjustment:		Image Signal Level 0.5~1.5Vp-p
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		30.5mm P0.5
Mount:		CS-Mount, (Adjustable Lens Postion)
Size, Approx. Weight:		41.5 × 51 × 42mm (w/h/d), 65g (Approx. 1.6 × 2.0 × 1.7in., 2.3 oz.)



Camera Connector Wiring



Pin	Signal
1	+8-16VDC
2	N.C.
3	Video
4	Ground

VIDEO TYPE LENS

For cameras with standard wiring for Video type lenses (Rainbow, Panasonic, Sanyo, Sony, etc.)

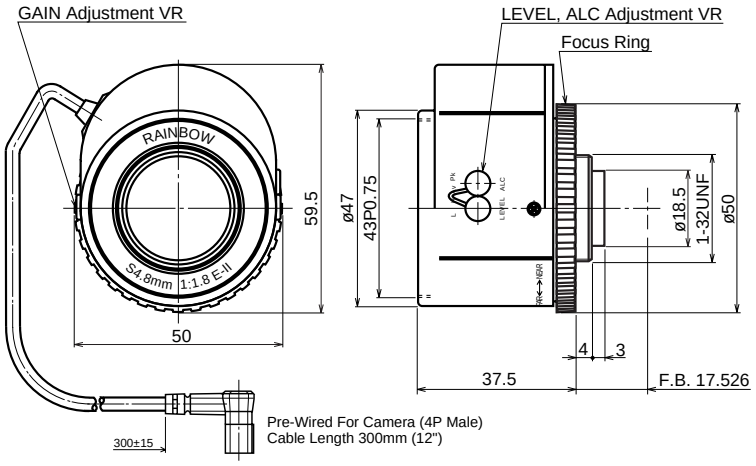
Note: Some brands (incl. Everfocus, Javelin, Watec) use the same 4-pin connector with non-standard wiring. **To avoid camera damage, compare wiring instructions in camera box to this diagram.**

S48E

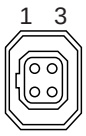
4.8mm F1.8 – C-Mount

Compatible with 2/3", 1/2", 1/3" & 1/4" Cameras

Focal Length:		4.8mm
Max. Relative Aperture:		1:1.8
Iris:		F1.8~Approx. F360 With ND Spot Filter
Angular Field of View:		2/3": 85.0° × 69.0° 1/2": 67.4° × 53.1° 1/3": 53.1° × 41.1° 1/4": 41.1° × 31.4°
Min. Object Distance (M.O.D.):		0.2m (From Front Vertex)
Optical Back Focal Distance:		10.86mm (In Air)
Operation:	Focus:	Manual
	Iris:	Auto (DC+8~16V: Fixed Voltage, Max. 40mA) Auto-Close System Speed Within 4 sec.
Auto-Iris Accuracy:		With Input Video Signal 0.7Vp-p Within ±10% of Mean Value
Auto-Iris Input Signal:		Composite Video Signal or Video Signal
Input Impedance:		High Impedance
Sensitivity Adjustment:		Image Signal Level 0.5~1.5Vp-p
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		43mm P0.75
Mount:		C-Mount, (Adjustable Lens Postion)
Size, Approx. Weight:		50 × 59.5 × 37.5mm (w/h/d), 90g (Approx. 2.0 × 2.3 × 1.5in., 3.2 oz.)



Camera Connector Wiring



Pin	Signal
1	+8-16VDC
2	N.C.
3	Video
4	Ground

VIDEO TYPE LENS

For cameras with standard wiring for Video type lenses (Rainbow, Panasonic, Sanyo, Sony, etc.)

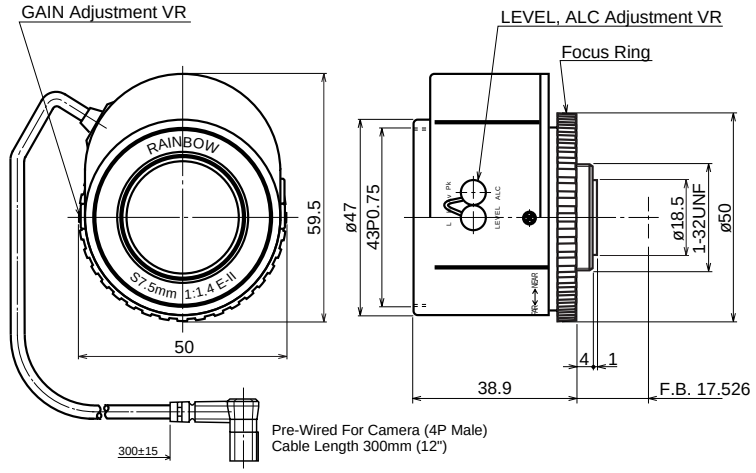
Note: Some brands (incl. Everfocus, Javelin, Watec) use the same 4-pin connector with non-standard wiring. **To avoid camera damage, compare wiring instructions in camera box to this diagram.**

S75E

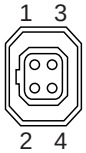
7.5mm F1.4 – C-Mount

Compatible with 2/3", 1/2", 1/3" & 1/4" Cameras

Focal Length:		7.5mm
Max. Relative Aperture:		1:1.4
Iris:		F1.4~Approx. F360 With ND Spot Filter
Angular Field of View:		2/3": 60.8° × 47.5° 1/2": 46.2° × 35.5° 1/3": 35.5° × 27.0° 1/4": 27.0° × 51.5°
Min. Object Distance (M.O.D.):		0.2m (From Front Vertex)
Optical Back Focal Distance:		14.04mm (In Air)
Operation:	Focus:	Manual
	Iris:	Auto (DC+8~16V: Fixed Voltage, Max. 40mA) Auto-Close System Speed Within 4 sec.
Auto-Iris Accuracy:		With Input Video Signal 0.7Vp-p Within ±10% of Mean Value
Auto-Iris Input Signal:		Composite Video Signal or Video Signal
Input Impedance:		High Impedance
Sensitivity Adjustment:		Image Signal Level 0.5~1.5Vp-p
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		43mm P0.75
Mount:		C-Mount, (Adjustable Lens Postion)
Size, Approx. Weight:		50 × 59.5 × 38.9mm (w/h/d), 85g (Approx. 2.0 × 2.3 × 1.4in., 3.0 oz.)



Camera Connector Wiring



Pin	Signal
1	+8-16VDC
2	N.C.
3	Video
4	Ground

VIDEO TYPE LENS

For cameras with standard wiring for Video type lenses (Rainbow, Panasonic, Sanyo, Sony, etc.)

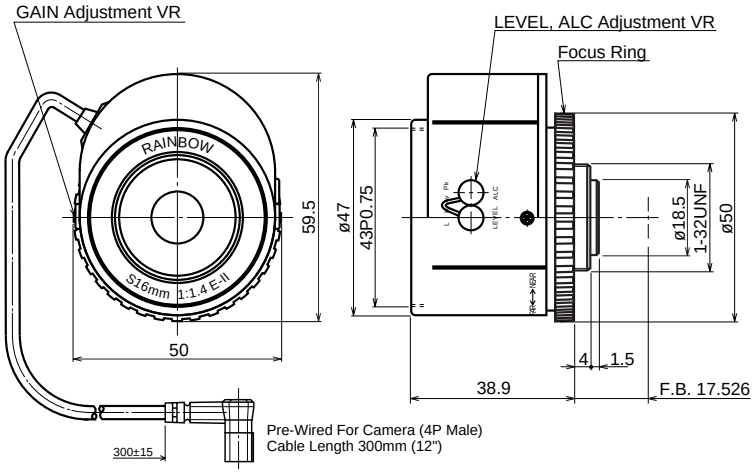
Note: Some brands (incl. Everfocus, Javelin, Watec) use the same 4-pin connector with non-standard wiring. **To avoid camera damage, compare wiring instructions in camera box to this diagram.**

S16E

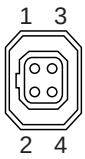
16mm F1.4 – C-Mount

Compatible with 2/3”, 1/2”, 1/3” & 1/4” Cameras

Focal Length:		16mm
Max. Relative Aperture:		1:1.4
Iris:		F1.4~Approx. F360 With ND Spot Filter
Angular Field of View:		2/3": 30.8° × 23.3° 1/2": 22.6° × 17.1° 1/3": 17.1° × 12.9° 1/4": 12.9° × 9.6°
Min. Object Distance (M.O.D.):		0.2m (From Front Vertex)
Optical Back Focal Distance:		14.2mm (In Air)
Operation:	Focus:	Manual
	Iris:	Auto (DC+8~16V: Fixed Voltage, Max. 40mA) Auto-Close System Speed Within 4 sec.
Auto-Iris Accuracy:		With Input Video Signal 0.7Vp-p Within ±10% of Mean Value
Auto-Iris Input Signal:		Composite Video Signal or Video Signal
Input Impedance:		High Impedance
Sensitivity Adjustment:		Image Signal Level 0.5~1.5Vp-p
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		43mm P0.75
Mount:		CS-Mount, (Adjustable Lens Postion)
Size, Approx. Weight:		50 × 59.5 × 38.9mm (w/h/d), 75g (Approx. 2.0 × 2.3 × 1.4in., 2.7 oz.)



Camera Connector Wiring



Pin	Signal
1	+8-16VDC
2	N.C.
3	Video
4	Ground

VIDEO TYPE LENS

For cameras with standard wiring for Video type lenses (Rainbow, Panasonic, Sanyo, Sony, etc.)

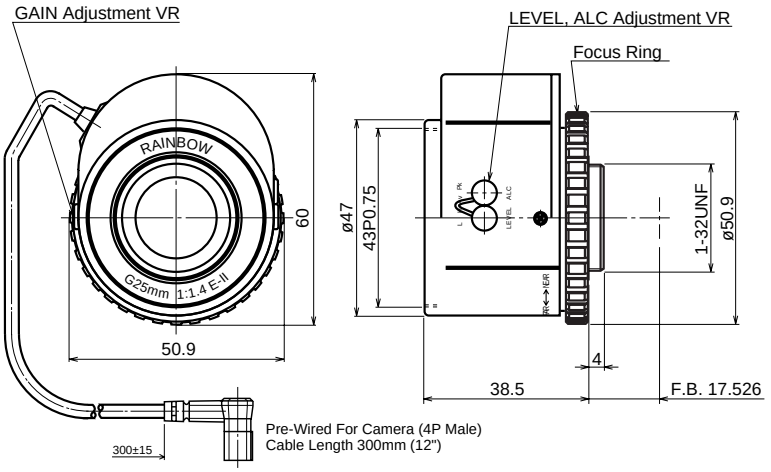
Note: Some brands (incl. Everfocus, Javelin, Watec) use the same 4-pin connector with non-standard wiring. **To avoid camera damage, compare wiring instructions in camera box to this diagram.**

G25E

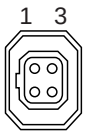
25mm F1.4 – C-Mount

Compatible with 1", 2/3", 1/2", 1/3" & 1/4" Cameras

Focal Length:		25mm
Max. Relative Aperture:		1:1.4
Iris:		F1.4~Approx. F360 With ND Spot Filter
Angular Field of View:		1": 28.7° ×21.7° 2/3": 20.0° × 15.0° 1/2": 14.6° ×11.0° 1/3": 11.0° × 8.2° 1/4": 8.2° × 6.2°
Min. Object Distance (M.O.D.):		0.5m (From Front Vertex)
Optical Back Focal Distance:		14.32mm (In Air)
Operation:	Focus:	Manual
	Iris:	Auto (DC+8~16V: Fixed Voltage, Max. 40mA) Auto-Close System Speed Within 4 sec.
Auto-Iris Accuracy:		With Input Video Signal 0.7Vp-p Within ±10% of Mean Value
Auto-Iris Input Signal:		Composite Video Signal or Video Signal
Input Impedance:		High Impedance
Sensitivity Adjustment:		Image Signal Level 0.5~1.5Vp-p
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		43mm P0.75
Mount:		C-Mount, (Adjustable Lens Postion)
Size, Approx. Weight:		50.9 × 60 × 38.5mm (w/h/d), 90g (Approx. 2.0 × 2.4 × 1.5in., 3.2 oz.)



Camera Connector Wiring



Pin	Signal
1	+8-16VDC
2	N.C.
3	Video
4	Ground

VIDEO TYPE LENS

For cameras with standard wiring for Video type lenses (Rainbow, Panasonic, Sanyo, Sony, etc.)

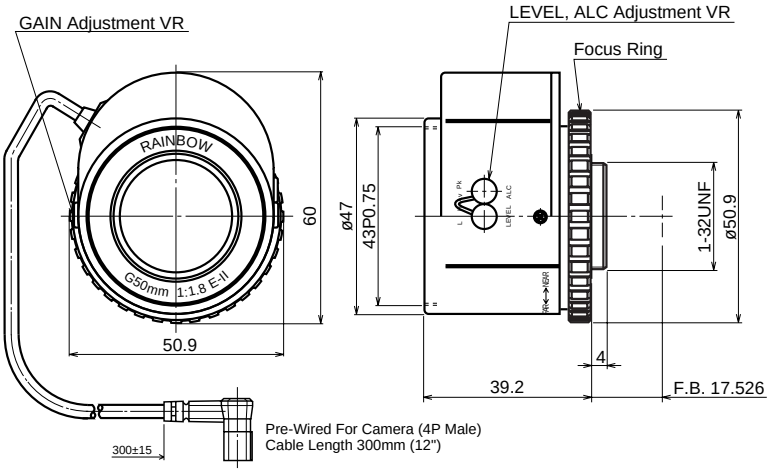
Note: Some brands (incl. Everfocus, Javelin, Watec) use the same 4-pin connector with non-standard wiring. **To avoid camera damage, compare wiring instructions in camera box to this diagram.**

G50E

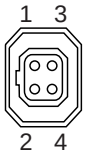
50mm F1.8 – C-Mount

Compatible with 1", 2/3", 1/2", 1/3" & 1/4" Cameras

Focal Length:		50mm
Max. Relative Aperture:		1:1.8
Iris:		F1.8~Approx. F360 With ND Spot Filter
Angular Field of View:		1": 14.5° × 10.9° 2/3": 10.1° × 7.6° 1/2": 7.3° × 5.5° 1/3": 5.5° × 4.1° 1/4": 4.1° × 3.1°
Min. Object Distance (M.O.D.):		0.7m (From Front Vertex)
Optical Back Focal Distance:		19.71mm (In Air)
Operation:	Focus:	Manual
	Iris:	Auto (DC+8~16V: Fixed Voltage, Max. 40mA) Auto-Close System Speed Within 4 sec.
Auto-Iris Accuracy:		With Input Video Signal 0.7Vp-p Within ±10% of Mean Value
Auto-Iris Input Signal:		Composite Video Signal or Video Signal
Input Impedance:		High Impedance
Sensitivity Adjustment:		Image Signal Level 0.5~1.5Vp-p
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		43mm P0.75
Mount:		CS-Mount, (Adjustable Lens Postion)
Size, Approx. Weight:		50.9 × 60 × 39.2mm (w/h/d), 140g (Approx. 2.0 × 2.4 × 1.5in., 4.9.)



Camera Connector Wiring



Pin	Signal
1	+8-16VDC
2	N.C.
3	Video
4	Ground

VIDEO TYPE LENS

For cameras with standard wiring for Video type lenses (Rainbow, Panasonic, Sanyo, Sony, etc.)

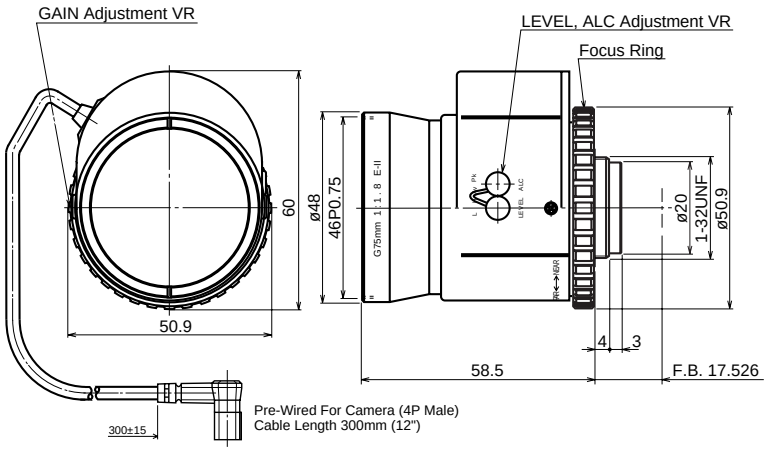
Note: Some brands (incl. Everfocus, Javelin, Watec) use the same 4-pin connector with non-standard wiring. **To avoid camera damage, compare wiring instructions in camera box to this diagram.**

G75E

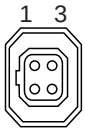
75mm F1.8 – C-Mount

Compatible with 1”, 2/3”, 1/2”, 1/3” & 1/4” Cameras

Focal Length:		75mm
Max. Relative Aperture:		1:1.8
Iris:		F1.8~Approx. F360 With ND Spot Filter
Angular Field of View:		1": 9.7° × 7.3° 2/3": 6.7° × 5.0° 1/2": 4.9° × 3.7° 1/3": 3.7° × 2.8° 1/4": 2.8° × 2.1°
Min. Object Distance (M.O.D.):		0.8m (From Front Vertex)
Optical Back Focal Distance:		21.85mm (In Air)
Operation:	Focus:	Manual
	Iris:	Auto (DC+8~16V: Fixed Voltage, Max. 40mA) Auto-Close System Speed Within 4 sec.
Auto-Iris Accuracy:		With Input Video Signal 0.7Vp-p Within ±10% of Mean Value
Auto-Iris Input Signal:		Composite Video Signal or Video Signal
Input Impedance:		High Impedance
Sensitivity Adjustment:		Image Signal Level 0.5~1.5Vp-p
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		43mm P0.75
Mount:		C-Mount, (Adjustable Lens Postion)
Size, Approx. Weight:		50.9 × 60 × 58.5mm (w/h/d), 215g (Approx. 2.0 × 2.4 × 2.3in., 7.6oz.)



Camera Connector Wiring



Pin	Signal
1	+8-16VDC
2	N.C.
3	Video
4	Ground

VIDEO TYPE LENS

For cameras with standard wiring for Video type lenses (Rainbow, Panasonic, Sanyo, Sony, etc.)

Note: Some brands (incl. Everfocus, Javelin, Watec) use the same 4-pin connector with non-standard wiring. **To avoid camera damage, compare wiring instructions in camera box to this diagram.**

L4PCSWI

4mm F2.0 – CS-Mount

Compatible with 1/3” & 1/4” Cameras

Focal Length: 4mm

Max. Relative Aperture: 1:2.0

Iris: F2.0~Close

Angular Field of View: 1/3": 63.1° × 49.1°
1/4”: 49.1° × 37.3°

Min. Object Distance (M.O.D.): 0.3m (From Front Vertex)

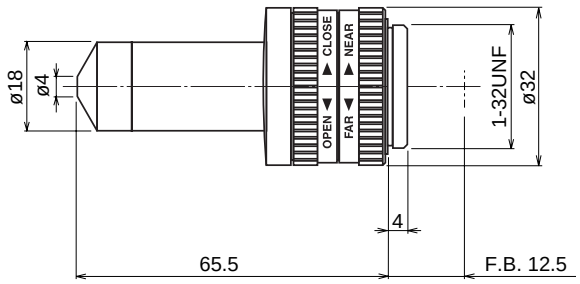
Optical Back Focal Distance: 9.19mm (In Air)

Operation: Focus: Manual
Iris: Manual

Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

Filter Size: None

Size, Approx. Weight: ø32 × 65.5mm, 150g
(Approx. ø1.3 x 2.6in., 5.3oz.)



H6PWI

6mm F2.0 – C-Mount

Compatible with 1/2”, 1/3” & 1/4” Cameras

Focal Length: 6mm

Max. Relative Aperture: 1:2.0

Iris: F2.0~Close

Angular Field of View: 1/2”: 56.1° × 43.6°
1/3": 43.6° × 33.4°
1/4”: 33.4° × 25.4°

Min. Object Distance (M.O.D.): 0.3m (From Front Vertex)

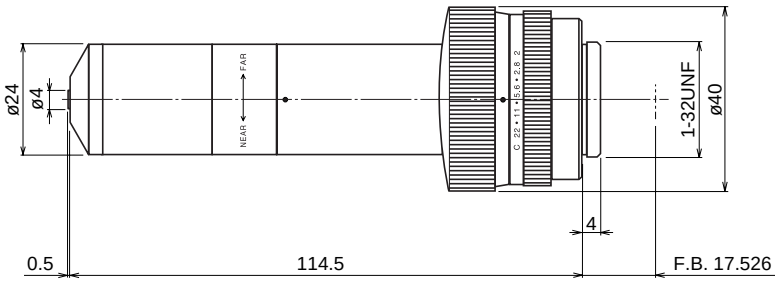
Optical Back Focal Distance: 13.65mm (In Air)

Operation: Focus: Manual
Iris: Manual

Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

Filter Size: None

Size, Approx. Weight: ø40 × 114.5mm, 220g
(Approx. ø1.6 x 4.5in., 7.8oz.)



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L639VCS

6.5~39mm F1.4 – CS-Mount

Compatible with 1/3” & 1/4” Cameras

Focal Length: 6.5~39mm

Max. Relative Aperture: 1:1.4

Iris: F1.4~Close

Angular Field of View: 1/3": 40.5° × 31.0° at 6.5mm
7.0° × 5.3° at 39mm
1/4”: 31.0° × 23.5° at 6.5mm
5.3° × 4.0° at 39mm

Min. Object Distance (M.O.D.): 0.8m (From Front Vertex)

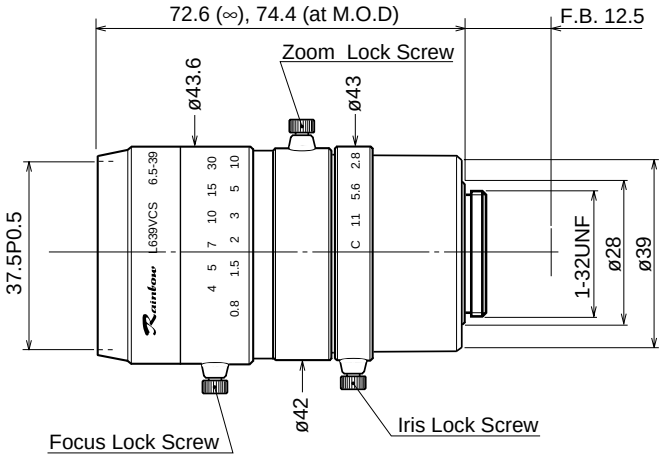
Optical Back Focal Distance: 11.85mm (In Air)

Operation:
Zoom: Manual
Focus: Manual
Iris: Manual

Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

Filter Size: 37.5mm P0.5

Size, Approx. Weight: ø43.6 × 74.4mm., 120g
(Approx. ø1.7 × 2.9in., 4.2oz.)



L851VCS

8.5~51mm F1.6 – CS-Mount

Compatible with 1/2”, 1/3”, & 1/4” Cameras

Focal Length: 8.5~51mm

Max. Relative Aperture: 1:1.6

Iris: F1.6~Close

Angular Field of View: 1/2”: 41.3° × 31.5° at 8.5mm
7.2° × 5.4° at 51mm
1/3": 31.5° × 23.9° at 8.5mm
5.4° × 4.0° at 51mm
1/4”: 23.9° × 18.0° at 8.5mm
4.0° × 3.0° at 51mm

Min. Object Distance (M.O.D.): 0.8m (From Front Vertex)

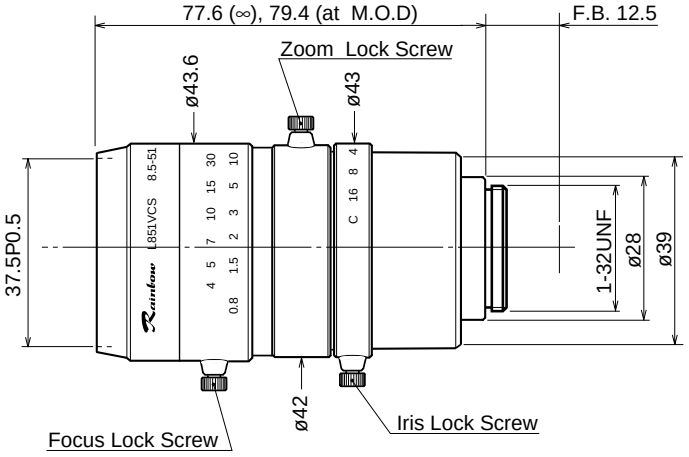
Optical Back Focal Distance: 15.89mm (In Air)

Operation:
Zoom: Manual
Focus: Manual
Iris: Manual

Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

Filter Size (Front Thread): 37.5mm P0.5

Size, Approx., Weight: ø43.6 × 79.4mm., 120g
(Approx. ø1.7 × 3.1in., 4.2oz.)

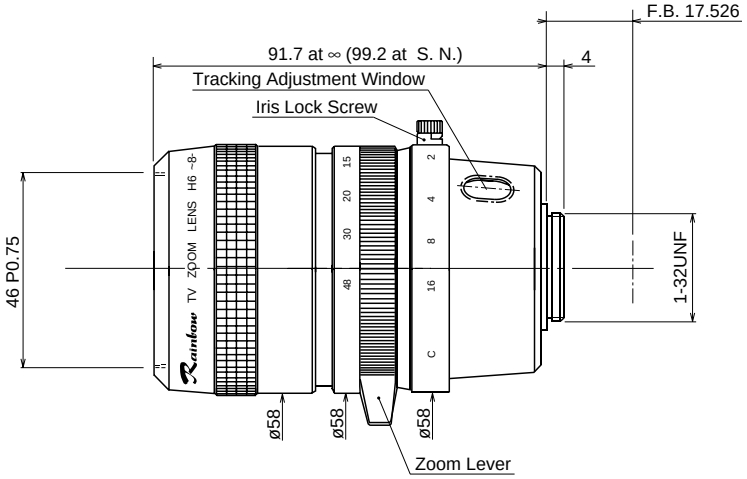


H6X8

8~48mm F1.0 – C-Mount

Compatible with 1/2”, 1/3” & 1/4” Cameras

Focal Length: 8~48mm
Max. Relative Aperture: 1:1.0
Iris: F1.0~Close
Angular Field of View: 1/2”: 43.6° × 33.4° at 8mm
7.7° × 5.7° at 48mm
1/3": 33.4° × 25.4° at 8mm
5.7° × 4.3° at 48mm
1/4”: 25.4° × 19.2° at 8mm
4.3° × 3.2° at 48mm
Min. Object Distance (M.O.D.): 1.0m - 40” (From Front Vertex)
0.3m - 12” (Focus set to S.N.)
Partial eclipsing may occur during zooming when focus is set to S.N. on 1/2” cameras
Optical Back Focal Distance: 14.56mm (In Air)
Operation: Zoom: Manual
Focus: Manual
Iris: Manual
Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)
Filter Size: 46mm P07.5
Mount: C-Mount
(Adjustable Lens Postion)
Size, Approx. Weight: ø58.0 × 99.2mm, 380g
(Approx. ø2.3 × 3.9in., 13.4oz.)

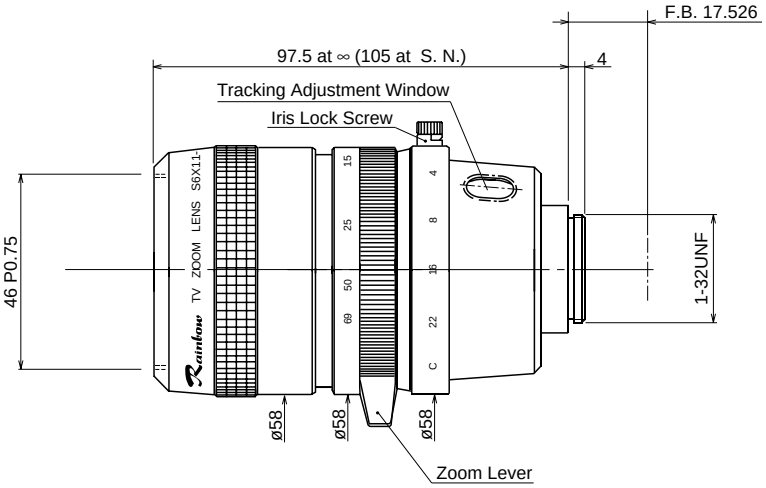


S6X11

11.5~69mm F1.4 – C-Mount

Compatible with 2/3”, 1/2”, 1/3” & 1/4” Cameras

Focal Length: 11.5~69mm
Max. Relative Aperture: 1:1.4
Iris: F1.4~Close
Angular Field of View: 2/3”: 41.9° × 32.0° at 11.5mm
7.3° × 5.5° at 69mm
1/2”: 31.1° × 23.6° at 11.5mm
5.3° × 4.0° at 69mm
1/3": 23.6° × 17.8° at 11.5mm
4.0° × 3.0° at 69mm
1/4”: 17.8° × 13.4° at 11.5mm
3.0° × 2.2° at 69mm
Min. Object Distance (M.O.D.): 1.0m - 40” (From Front Vertex)
0.3m - 12” (Focus set to S.N.)
Partial eclipsing may occur during zooming when focus is set to S.N. on 2/3” cameras
Optical Back Focal Distance: 17.93mm (In Air)
Operation: Zoom: Manual
Focus: Manual
Iris: Manual
Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)
Filter Size: 46mm P07.5
Mount: C-Mount
(Adjustable Lens Postion)
Size, Approx. Weight: ø58.0 × 105mm, 395g
(Approx. ø2.3 × 4.1in.,13.9oz.)



L639VDC4P

6.5~39mm F1.4 – CS-Mount

Compatible with 1/3” & 1/4” Cameras

Focal Length: 6.5~39mm

Max. Relative Aperture: 1:1.4

Iris: F1.4~Approx. F360
With ND Spot Filter

Angular Field of View: 1/3": 40.5° × 31.0° at 6.5mm
7.0° × 5.3° at 39mm
1/4”: 31.0° × 23.5° at 6.5mm
5.3° × 4.0° at 39mm

Min. Object Distance (M.O.D.): 0.8m (From Front Vertex)

Optical Back Focal Distance: 11.85mm (In Air)

Operation: Zoom: Manual
Focus: Manual
Iris: IG (Auto-Close System)

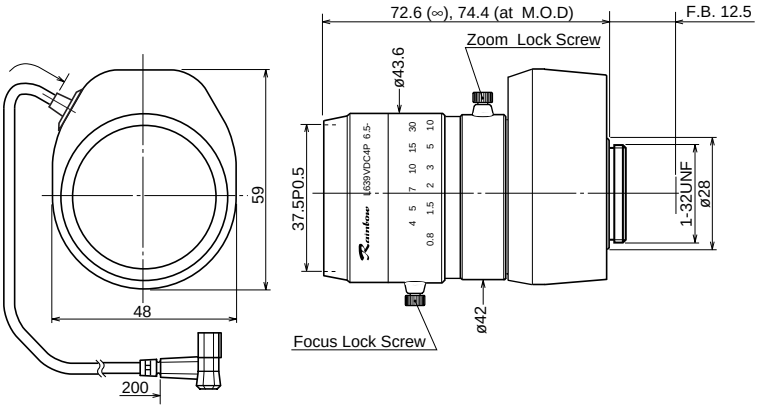
Operation Voltage: Close to Open: Less than 3V
Open to Close: More than 0.5V

Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

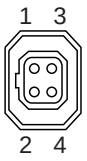
Filter Size: 37.5mm P0.5

Mount: CS-Mount
(Adjustable Lens Postion)

Size, Approx., Weight: 48 × 59 × 74.4mm (w/h/d) 130g
(Approx. 1.9 × 2.3 × 2.9in., 4.6oz.)



Camera Connector Wiring



Pin	Signal
1	Brake – *
2	Brake + *
3	Drive +
4	Drive –

* Also referred to as DAMP, CONTROL, or DUMP

L851VDC4P

8.5~51mm F1.6 – CS-Mount

Compatible with 1/2”, 1/3”, & 1/4” Cameras

Focal Length: 8.5~51mm

Max. Relative Aperture: 1:1.6

Iris: F1.6~Approx. F360
With ND Spot Filter

Angular Field of View: 1/2”: 41.3° × 31.5° at 8.5mm
7.2° × 5.4° at 51mm
1/3": 31.5° × 23.9° at 8.5mm
5.4° × 4.0° at 51mm
1/4”: 23.9° × 18.0° at 8.5mm
4.0° × 3.0° at 51mm

Min. Object Distance (M.O.D.): 0.8m (From Front Vertex)

Optical Back Focal Distance: 15.89mm (In Air)

Operation: Zoom: Manual
Focus: Manual
Iris: IG (Auto-Close System)

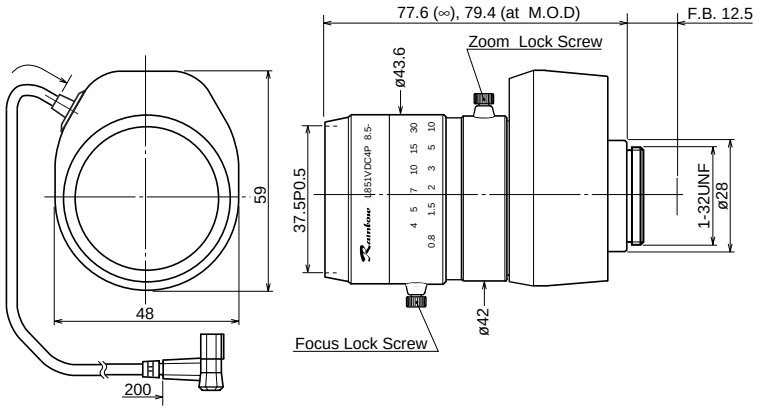
Operation Voltage: Close to Open: Less than 3V
Open to Close: More than 0.5V

Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

Filter Size: 37.5mm P0.5

Mount: CS-Mount
(Adjustable Lens Postion)

Size, Approx. Weight: 48 × 59 × 79.4mm (w/h/d) 130g
(Approx. 1.9 × 2.3 × 3.1in., 4.6oz.)



Camera Connector Wiring

Pin	Signal
1	Brake – *
2	Brake + *
3	Drive +
4	Drive –

* Also referred to as DAMP, CONTROL, or DUMP

Information on Preset Lenses

Preset potentiometers are available on most motorized zoom lenses. The outside dimensions of the lens will not change except on the following models:

H6X8M-IIPZF
H6X8MEA-IIPZF
S6X11M-IIPZF
S6X11MEA-IIPZF

We have inlcluded the specification sheet for these models only because the dimensions are different than the model without presets.

If you need a specification sheet for other models, please contact us.

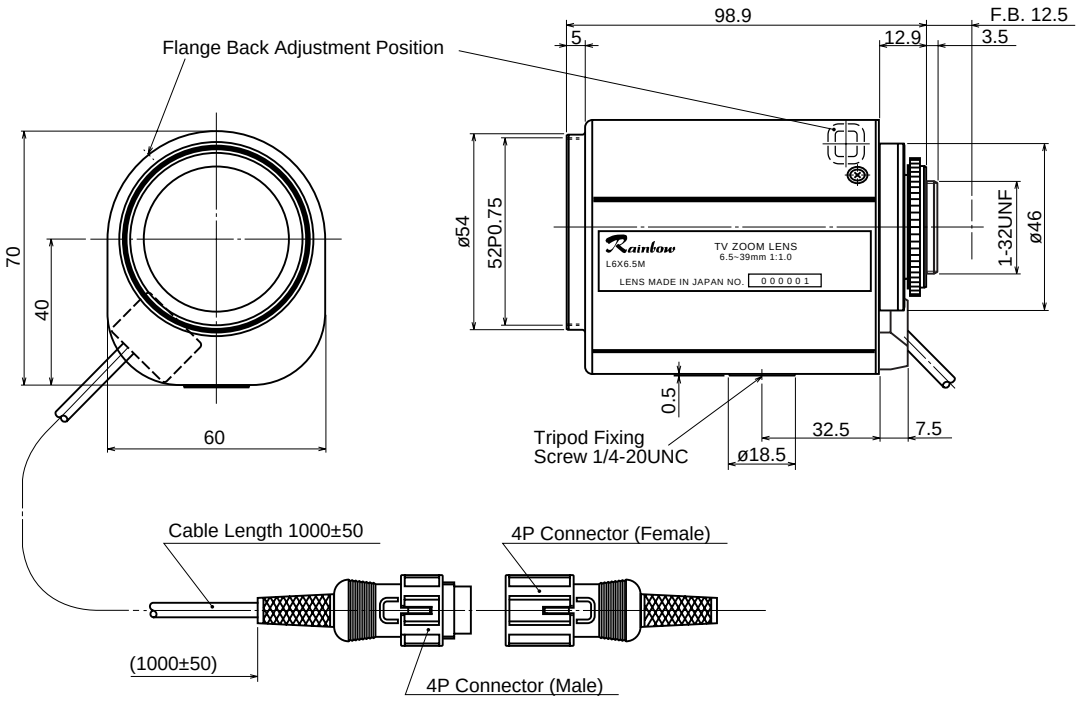
L6X6.5M/CS

6.5~39mm F1.0 – CS-Mount

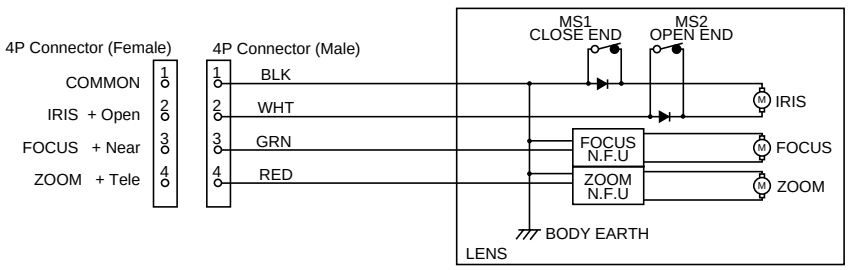
Compatible with 1/3” Cameras

Focal Length:	6.5~39mm
Max. Relative Aperture:	1:1.0
Iris:	F1.0~Close
Zoom Ratio:	6X
Angular Field of View:	1/3”: 40.5° × 31.0° at 39mm 7.0° × 5.3° at 6.5mm
Min. Object Distance (M.O.D.):	1.0m (From Front Vertex)
Optical Back Focal Distance:	11.28mm (In Air)

Operation:	Zoom:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 6 sec. (at 6.4V)
	Focus:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 7 sec. (at 6.4V)
	Iris:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 4 sec. (at 6.4V)
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		52mm P0.75
Mount:		CS-mount (Adjustable Lens Postion)
Size, Approx. Weight:		60× 70 × 98.9mm (w/h/d), 500g (Approx. 2.4 × 2.8 × 3.9in., 1.1lb.)



– Circuit Diagram –



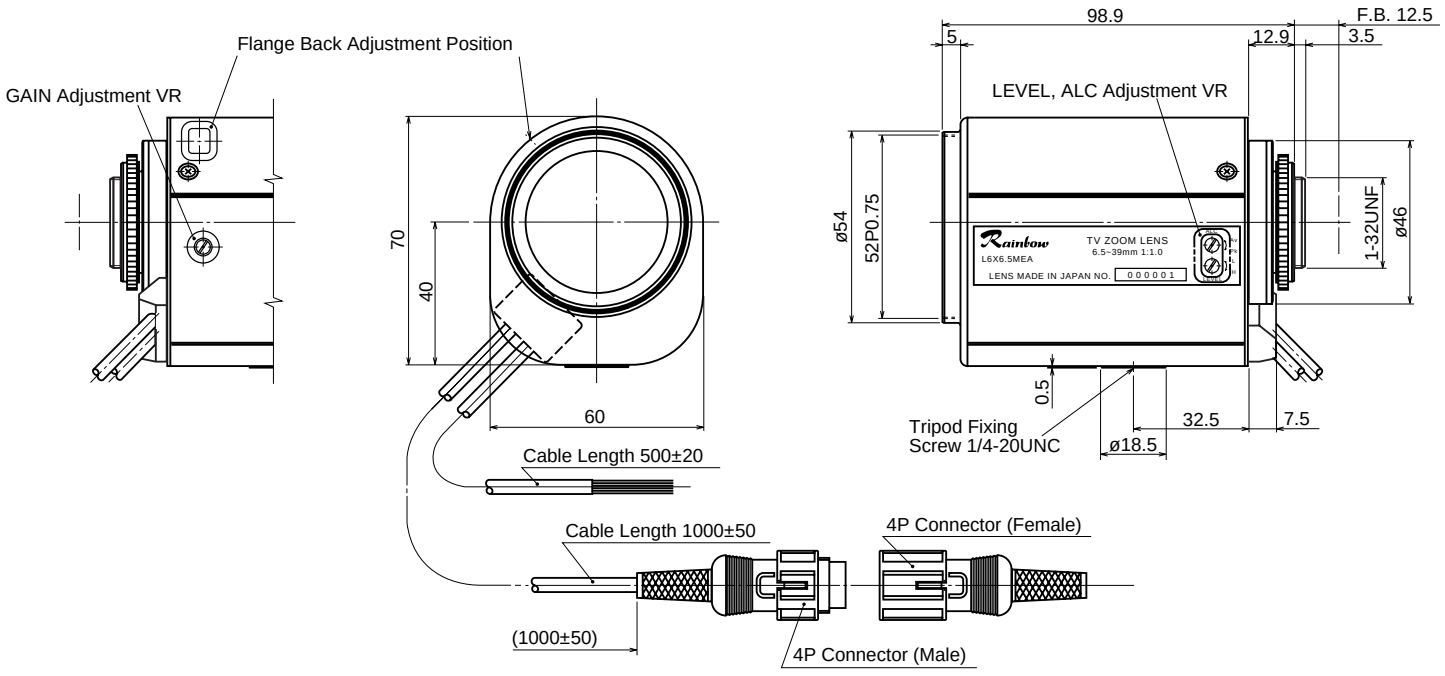
L6X6.5MEA/CS

6.5~39mm F1.0 – CS-Mount

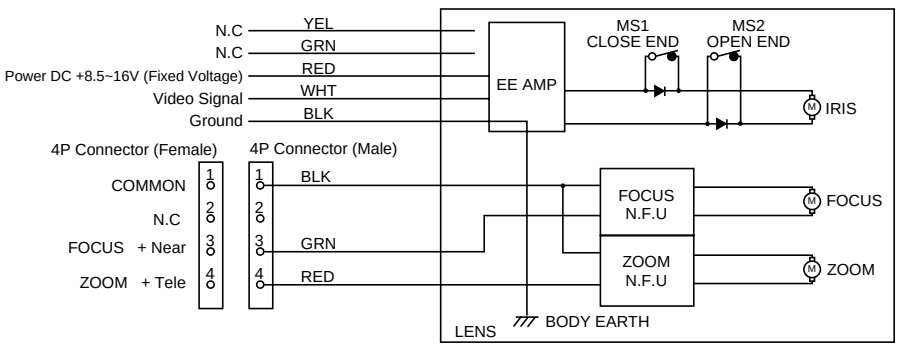
Compatible with 1/3” Cameras

Focal Length:	6.5~39mm
Max. Relative Aperture:	1:1.0
Iris:	F1.0~Approx. F1200 With ND Spot Filter
Zoom Ratio:	6X
Angular Field of View:	1/3”: 40.5° × 31.0° at 39mm 7.0° × 5.3° at 6.5mm
Min. Object Distance (M.O.D.):	1.0m (From Front Vertex)
Optical Back Focal Distance:	11.76mm (In Air)
Auto-Iris Input Signal:	Composite Video Signal or Video Signal
Input Impedance:	High Impedance

Sensitivity Adjustment:		Image Signal Level 0.5~1.0Vp-p
Auto-Iris Accuracy:		With Input Video Signal 0.7Vp-p Within ±15% of Mean value
Operation:	Zoom:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 6 sec. (at 6.4V)
	Focus:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 7 sec. (at 6.4V)
	Iris:	Auto (DC+8~16V: Fixed Voltage, Max. 60mA) Speed Within 3 sec.
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		52mm P0.75
Mount:		CS-mount (Adjustable Lens Postion)
Size, Approx. Weight:		60 × 70 × 98.9mm (w/h/d), 500g (Approx. 2.4 × 2.8 × 3.9in., 1.1lb.)



– Circuit Diagram –



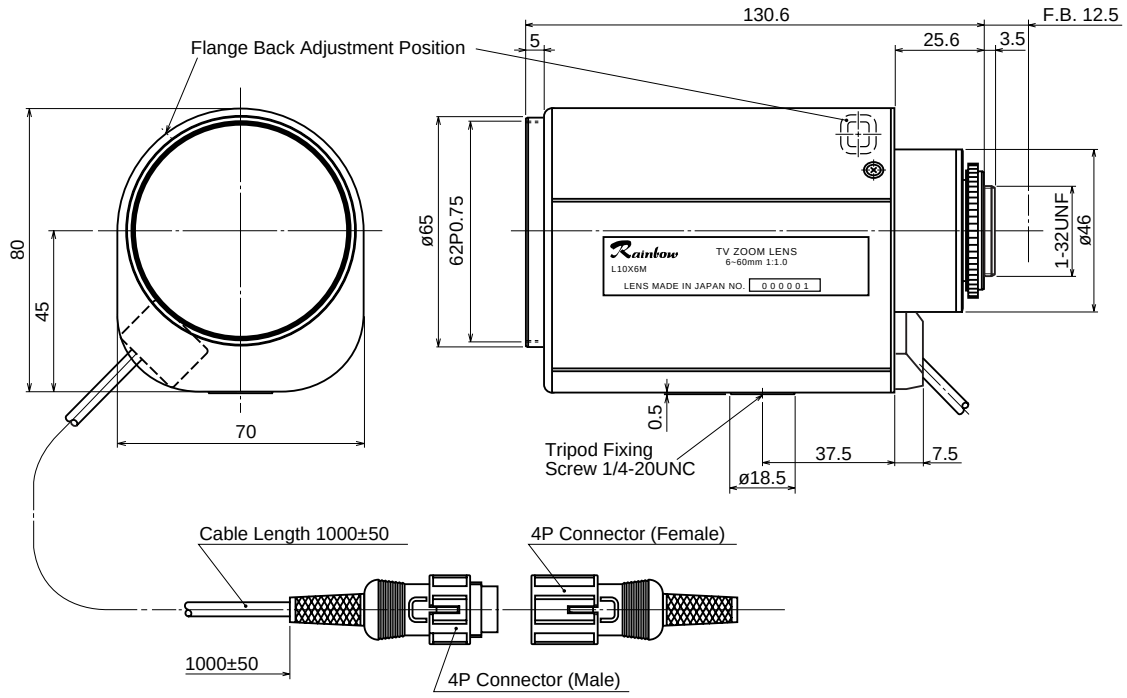
L10X6M/CS

6~60mm F1.0 – CS-Mount

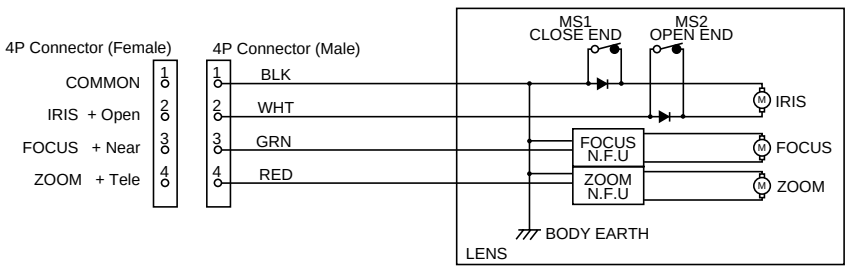
Compatible with 1/3” Cameras

Focal Length:	6~60mm
Max. Relative Aperture:	1:1.0
Iris:	F1.0~Close
Zoom Ratio:	10X
Angular Field of View:	1/3": 43.6° × 33.4° at 6mm 4.6° × 3.4° at 60mm
Min. Object Distance (M.O.D.):	1.2m (From Front Vertex)
Optical Back Focal Distance:	14.28mm (In Air)

Operation:	Zoom:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 6 sec. (at 6.4V)
	Focus:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 7 sec. (at 6.4V)
	Iris:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 3.5 sec. (at 6.4V)
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		62mm P0.75
Mount:		CS-mount (Adjustable Lens Postion)
Size, Approx. Weight:		70 × 80 × 130.6mm (w/h/d), 700g (Approx. 2.8 × 3.2 × 5.1in., 1.5 lb.)



– Circuit Diagram –



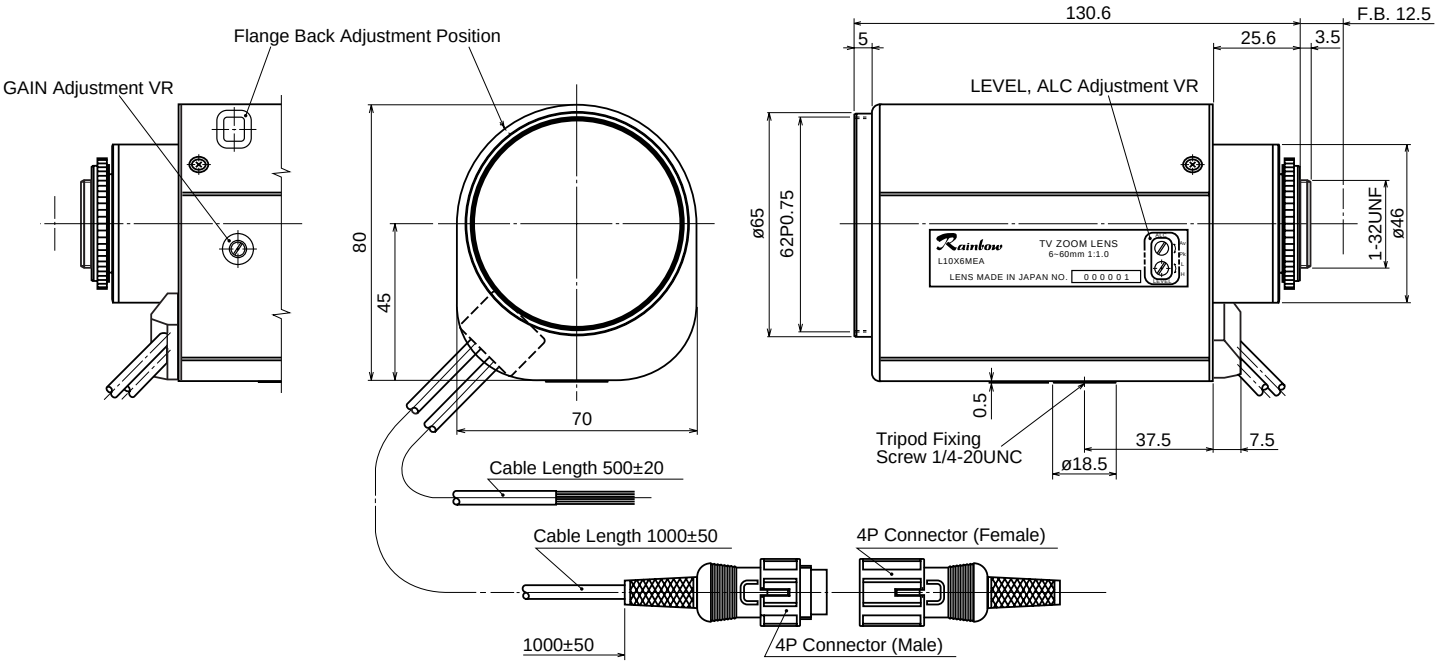
L10X6MEA/CS

6~60mm F1.0 – CS-Mount

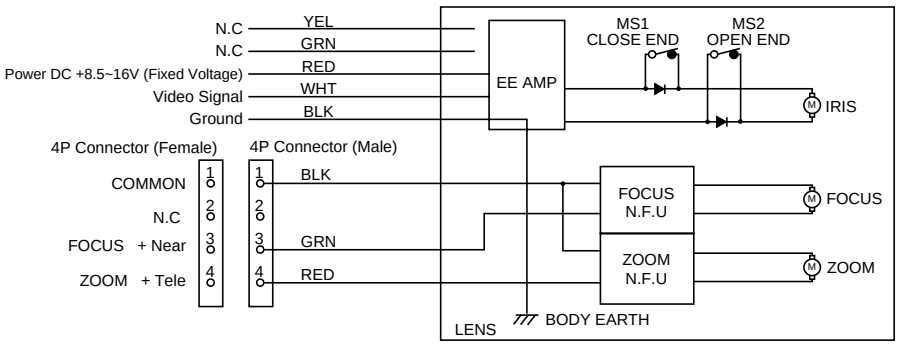
Compatible with 1/3” Cameras

Focal Length:	6~60mm
Max. Relative Aperture:	1:1.0
Iris:	F1.0~Approx. F1200 With ND Spot Filter
Zoom Ratio:	10X
Angular Field of View:	1/3": 43.6° × 33.4° at 6mm 4.6° × 3.4° at 60mm
Min. Object Distance (M.O.D.):	1.2m (From Front Vertex)
Optical Back Focal Distance:	14.28mm (In Air)
Auto-Iris Input Signal:	Composite Video Signal or Video Signal
Input Impedance:	High Impedance

Sensitivity Adjustment:		Image Signal Level 0.5~1.0Vp-p
Auto-Iris Accuracy:		With Input Video Signal 0.7Vp-p Within ±15% of Mean value
Operation:	Zoom:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 6 sec. (at 6.4V)
	Focus:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 7 sec. (at 6.4V)
	Iris:	Auto (DC+8~16V: Fixed Voltage, Max. 60mA) Speed Within 3.5 sec.
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		62mm P0.75
Mount:		CS-mount (Adjustable Lens Postion)
Size, Approx. Weight:		70 × 80 × 130.6mm (w/h/d), 700g (Approx. 2.8 × 3.2 × 5.1in., 1.5 lb.)



– Circuit Diagram –



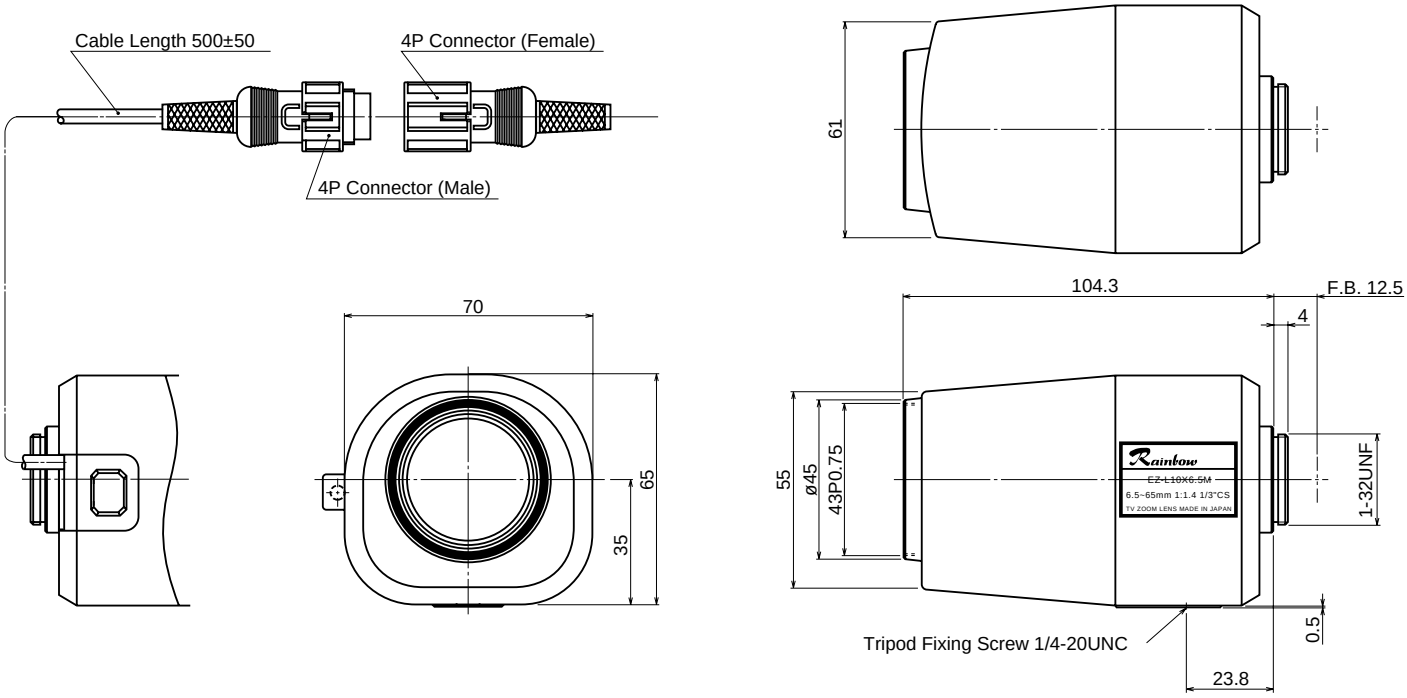
L10X65MCS

6.5~65mm F1.4 – CS-Mount

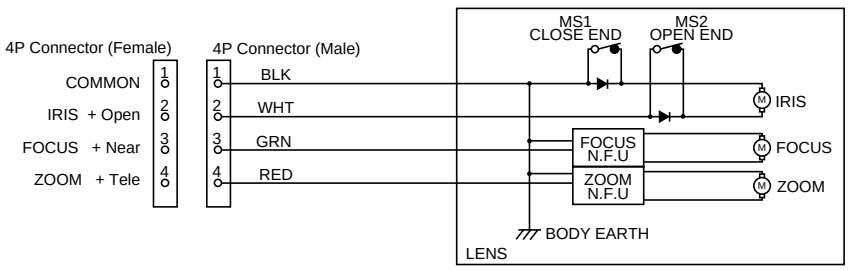
Compatible with 1/3” Cameras

Focal Length:	6.5~65mm
Max. Relative Aperture:	1:1.4
Iris:	F1.4~Close
Zoom Ratio:	10X
Angular Field of View:	1/3": 40.5° × 31.0° at 6.5mm 4.2° × 3.2° at 65mm
Min. Object Distance (M.O.D.):	1.2m (From Front Vertex)
Optical Back Focal Distance:	9.85mm (In Air)

Operation:	Zoom:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 6 sec. (at 6.4V)
	Focus:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 7 sec. (at 6.4V)
	Iris:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 4 sec. (at 6.4V)
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		43mm P0.75
Mount:		CS-mount (Adjustable Lens Postion)
Size, Approx. Weight:		70 × 65 × 104.3mm (w/h/d), 285g (Approx. 2.8 × 2.6 × 4.1in., 10.1oz.)



– Circuit Diagram –



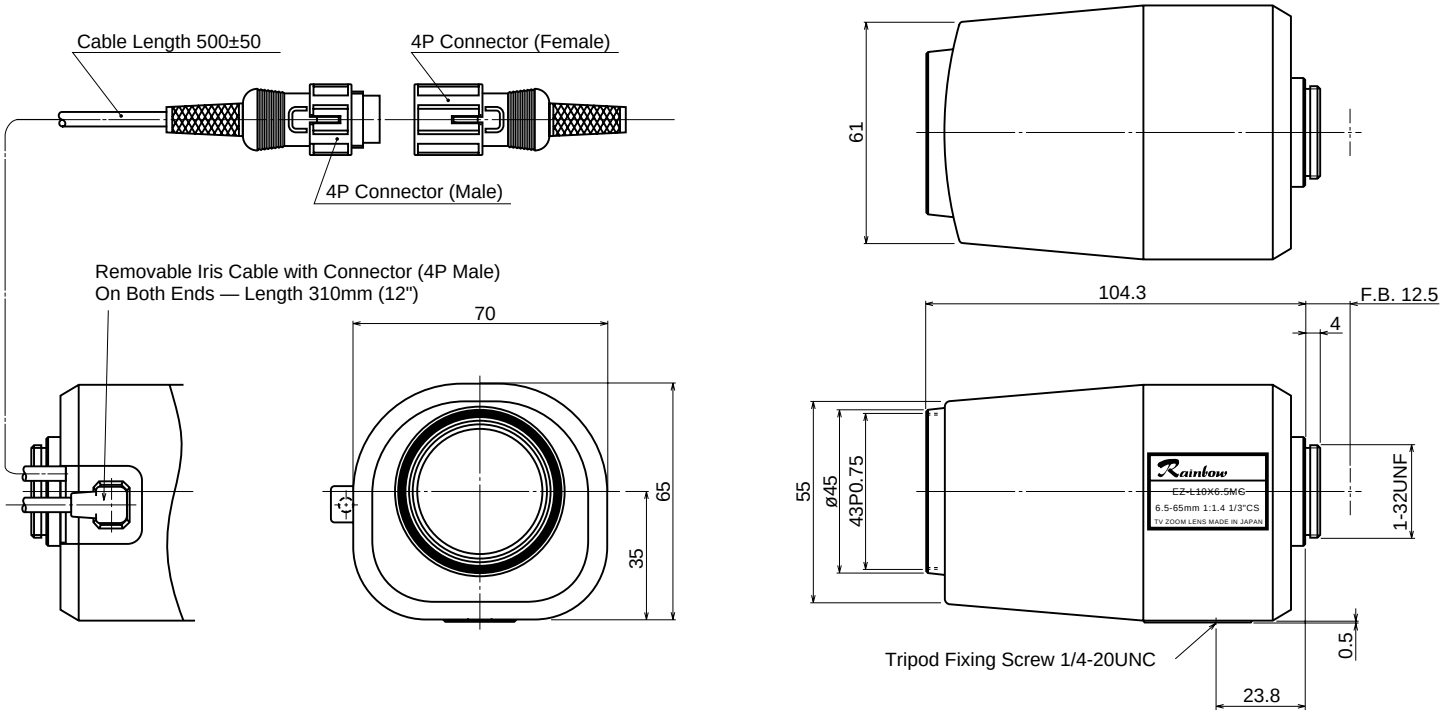
L10X65DC4P

6.5~65mm F1.4 – CS-Mount

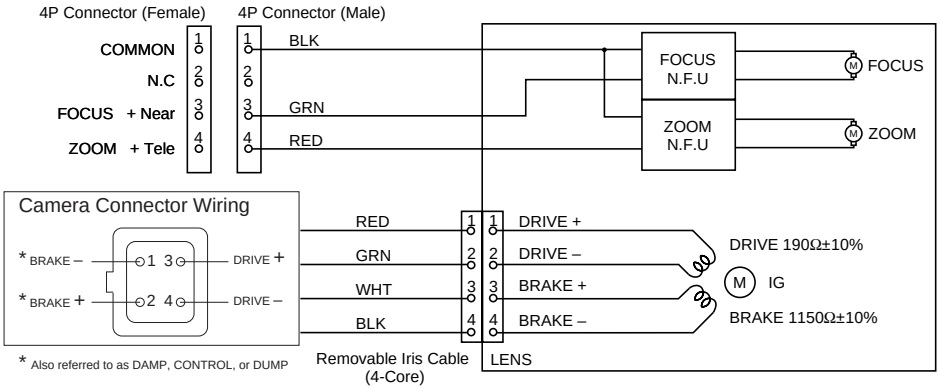
Compatible with 1/3” Cameras

Focal Length:	6.5~65mm
Max. Relative Aperture:	1:1.4
Iris:	F1.4~Approx. F360 With ND Spot Filter
Zoom Ratio:	10X
Angular Field of View:	1/3": 40.5° × 31.0° at 6.5mm 4.2° × 3.2° at 65mm
Min. Object Distance (M.O.D.):	1.2m (From Front Vertex)
Optical Back Focal Distance:	9.85mm (In Air)

Operation:	Zoom:	Motorized (DC±6.4V~12V, Max 40mA) Speed Approx. 6.5 sec. (at 6.4V)
	Focus:	Motorized (DC±6.4V~12V, Max 40mA) Speed Approx. 6.5 sec. (at 6.4V)
	Iris:	IG (Auto-Close System) Close to Open: Less than 4V Open to Close: More than 0.1V Speed Within 4 sec.
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		43mm P0.75
Mount:		CS-mount (Adjustable Lens Postion)
Size, Approx. Weight:		70 × 65 × 104.3mm (w/h/d), 285g (Approx. 2.8 × 2.6 × 4.1in., 10.1oz.)



– Circuit Diagram –



L10X65MGECS

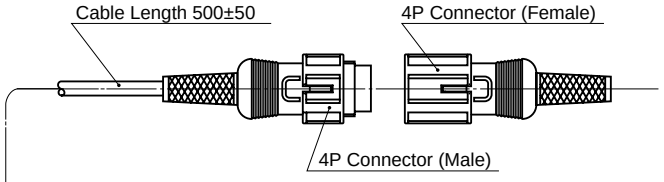
6.5~65mm F1.4 – CS-Mount

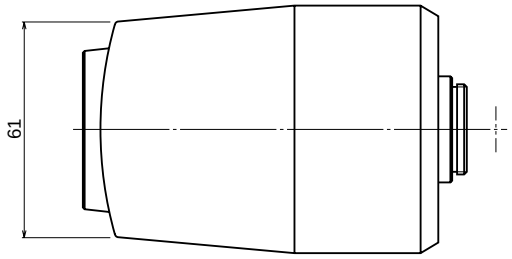
Compatible with 1/3” Cameras

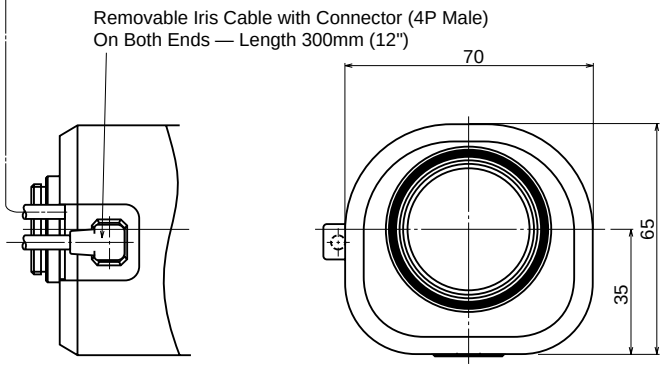
Cable Assembly Required – Sold Separately

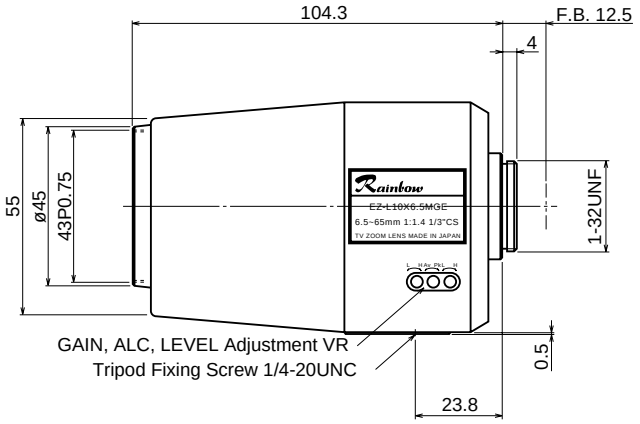
Focal Length:	6.5~65mm
Max. Relative Aperture:	1:1.4
Iris:	F1.4~Approx.F 360 With ND Spot Filter
Zoom Ratio:	10X
Angular Field of View:	1/3": 40.5° × 31.0° at 6.5mm 4.2° × 3.2° at 65mm
Min. Object Distance (M.O.D.):	1.2m (From Front Vertex)
Optical Back Focal Distance:	9.85mm (In Air)
Auto-Iris Input Signal:	Composite Video Signal or Video Signal

Input Impedance:		High Impedance
Sensitivity Adjustment:		Image Signal Level 0.5~1.0Vp-p
Auto-Iris Accuracy:		With Input Video Signal 0.7Vp-p Within ±15% of Mean value
Operation:	Zoom:	Motorized (DC±6.4V~12V, Max 40mA) Speed Approx. 6.5 sec. (at 6.4V)
	Focus:	Motorized (DC±6.4V~12V, Max 40mA) Speed Approx. 6.5 sec. (at 6.4V)
	Iris:	Auto (DC+8.5~16V: Fixed Voltage, Max. 50mA, Auto-Close) Speed Within 4 sec.
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		43mm P0.75
Mount:		CS-mount (Adjustable Lens Postion)
Size, Approx. Weight:		70 × 65 × 104.3mm (w/h/d), 285g (Approx. 2.8 × 2.6 × 4.1in., 10.1oz.)

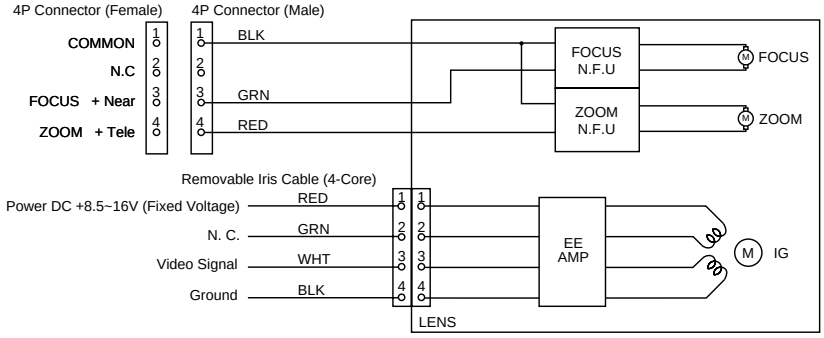








– Circuit Diagram –



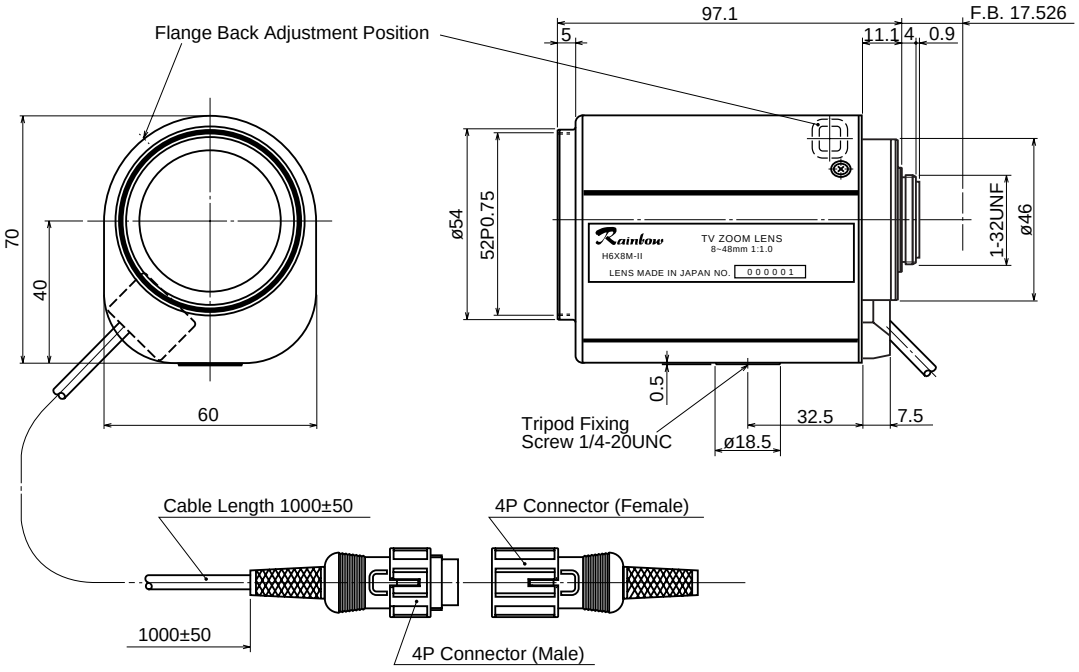
H6X8M-II

8~48mm F1.0 – C-Mount

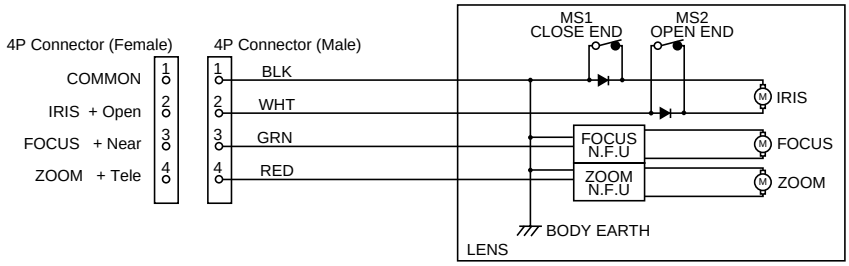
Compatible with 1/2” & 1/3” Cameras

Focal Length:	8~48mm
Max. Relative Aperture:	1:1.0
Iris:	F1.0~Close
Zoom Ratio:	6X
Angular Field of View:	1/2”: 43.6° × 33.4° at 8mm 7.7° × 5.7° at 48mm 1/3": 33.4° × 25.4° at 8mm 5.7° × 4.3° at 48mm
Min. Object Distance (M.O.D.):	1.0m (From Front Vertex)
Optical Back Focal Distance:	14.56mm (In Air)

Operation:	Zoom:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 6 sec. (at 6.4V)
	Focus:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 7 sec. (at 6.4V)
	Iris:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 3.5 sec. (at 6.4V)
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		52mm P0.75
Mount:		C-mount (Adjustable Lens Postion)
Size, Approx. Weight:		60 × 70 × 97.1mm (w/h/d), 560g (Approx. 2.4 × 2.8 × 3.8in., 1.2lb.)



– Circuit Diagram –



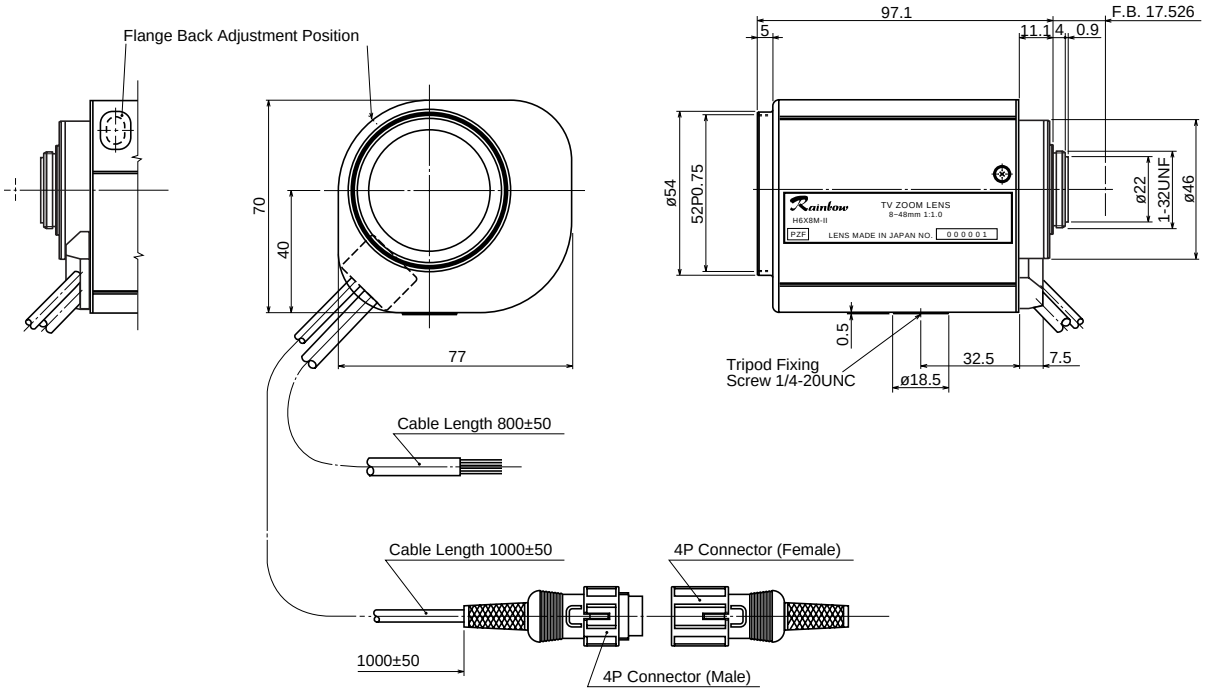
H6X8M-II PZF

8~48mm F1.0 – C-Mount

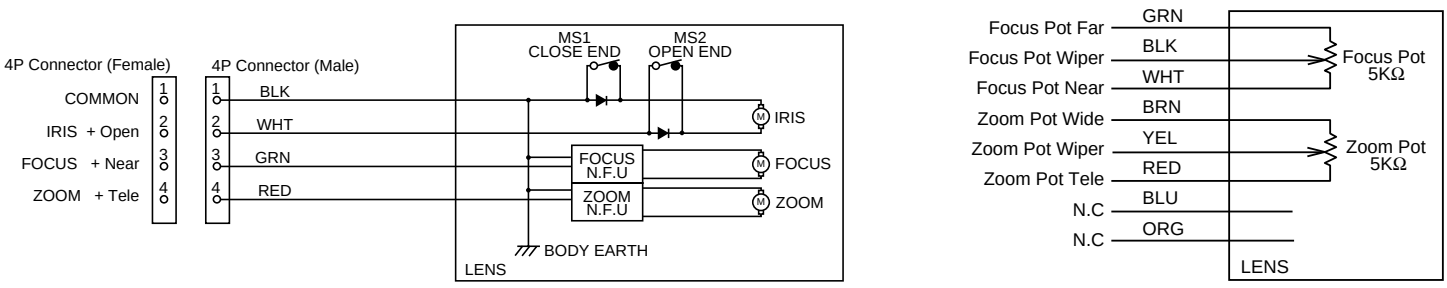
Compatible with 1/2” & 1/3” Cameras

Focal Length:	8~48mm
Max. Relative Aperture:	1:1.0
Iris:	F1.0~Close
Zoom Ratio:	6X
Angular Field of View:	1/2”: 43.6° × 33.4° at 8mm 7.7° × 5.7° at 48mm 1/3": 33.4° × 25.4° at 8mm 5.7° × 4.3° at 48mm
Min. Object Distance (M.O.D.):	1.0m (From Front Vertex)
Optical Back Focal Distance:	14.56mm (In Air)

Operation:	Zoom:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 6 sec. (at 6.4V)
	Focus:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 7 sec. (at 6.4V)
	Iris:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 3.5 sec. (at 6.4V)
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		52mm P0.75
Mount:		C-mount (Adjustable Lens Postion)
Size, Approx. Weight:		77 × 70 × 97.1mm (w/h/d), 560g (Approx. 3.0 × 2.8 × 3.8in., 1.2lb.)



– Circuit Diagram –



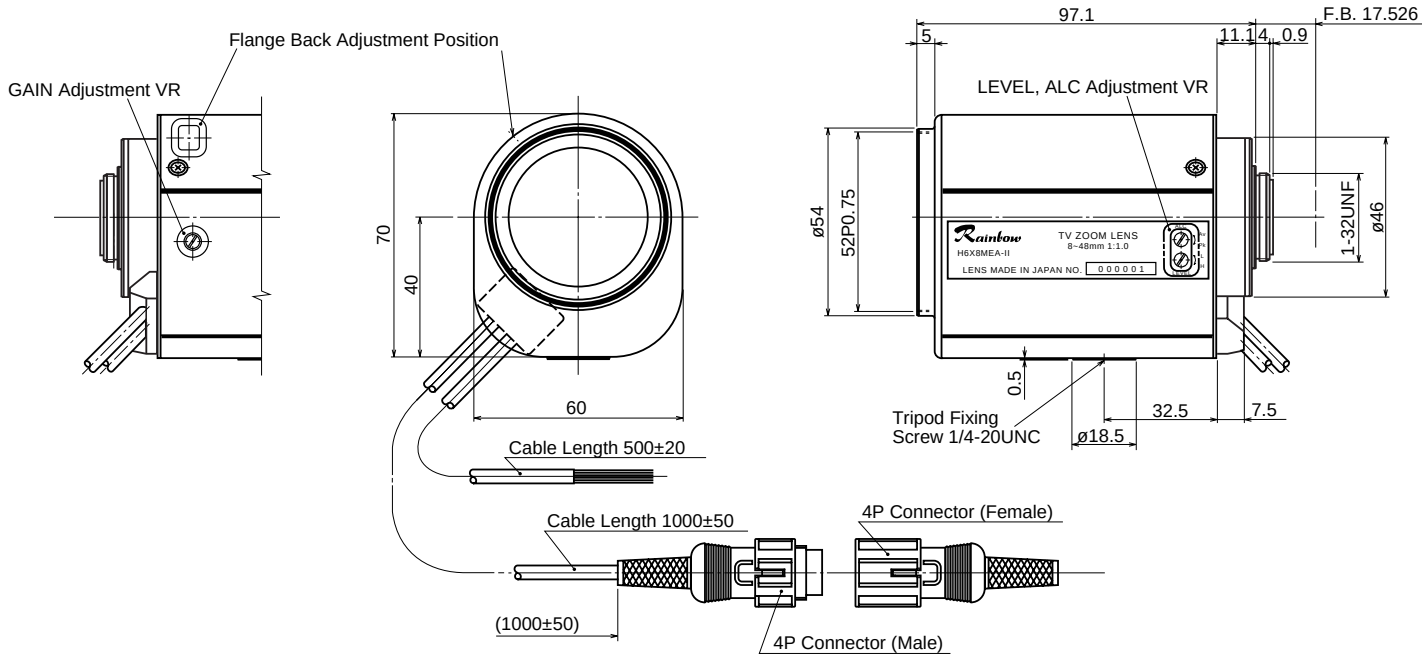
H6X8MEA-II

8~48mm F1.0 – C-Mount

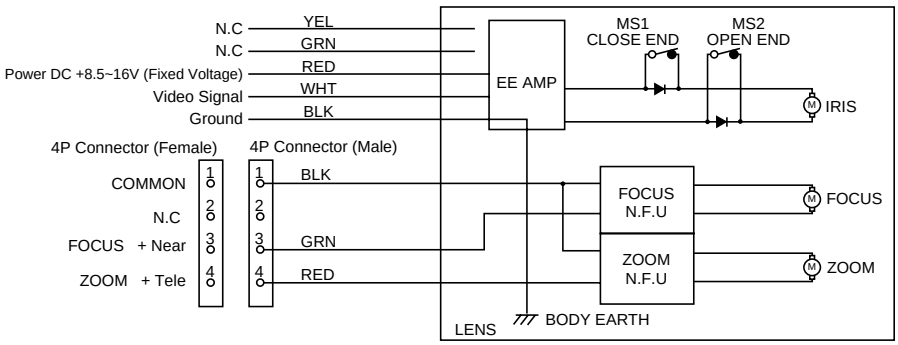
Compatible with 1/2” & 1/3” Cameras

Focal Length:	8~48mm
Max. Relative Aperture:	1:1.0
Iris:	F1.0~Approx. F1200 With ND Spot Filter
Zoom Ratio:	6X
Angular Field of View:	1/2”: 43.6° × 33.4° at 8mm 7.7° × 5.7° at 48mm 1/3": 33.4° × 25.4° at 8mm 5.7° × 4.3° at 48mm
Min. Object Distance (M.O.D.):	1.0m (From Front Vertex)
Optical Back Focal Distance:	14.56mm (In Air)
Auto-Iris Input Signal:	Composite Video Signal or Video Signal
Input Impedance:	High Impedance

Sensitivity Adjustment:		Image Signal Level 0.5~1.0Vp-p
Auto-Iris Accuracy:		With Input Video Signal 0.7Vp-p Within ±15% of Mean value
Operation:	Zoom:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 6 sec. (at 6.4V)
	Focus:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 7 sec. (at 6.4V)
	Iris:	Auto (DC+8~16V: Fixed Voltage, Max 40mA) Speed Within 3 sec.
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		52mm P0.75
Mount:		C-mount (Adjustable Lens Postion)
Size, Approx. Weight:		60 × 70 × 97.1mm (w/h/d), 560g (Approx. 2.4 × 2.8 × 3.8in., 1.2lb.)



– Circuit Diagram –



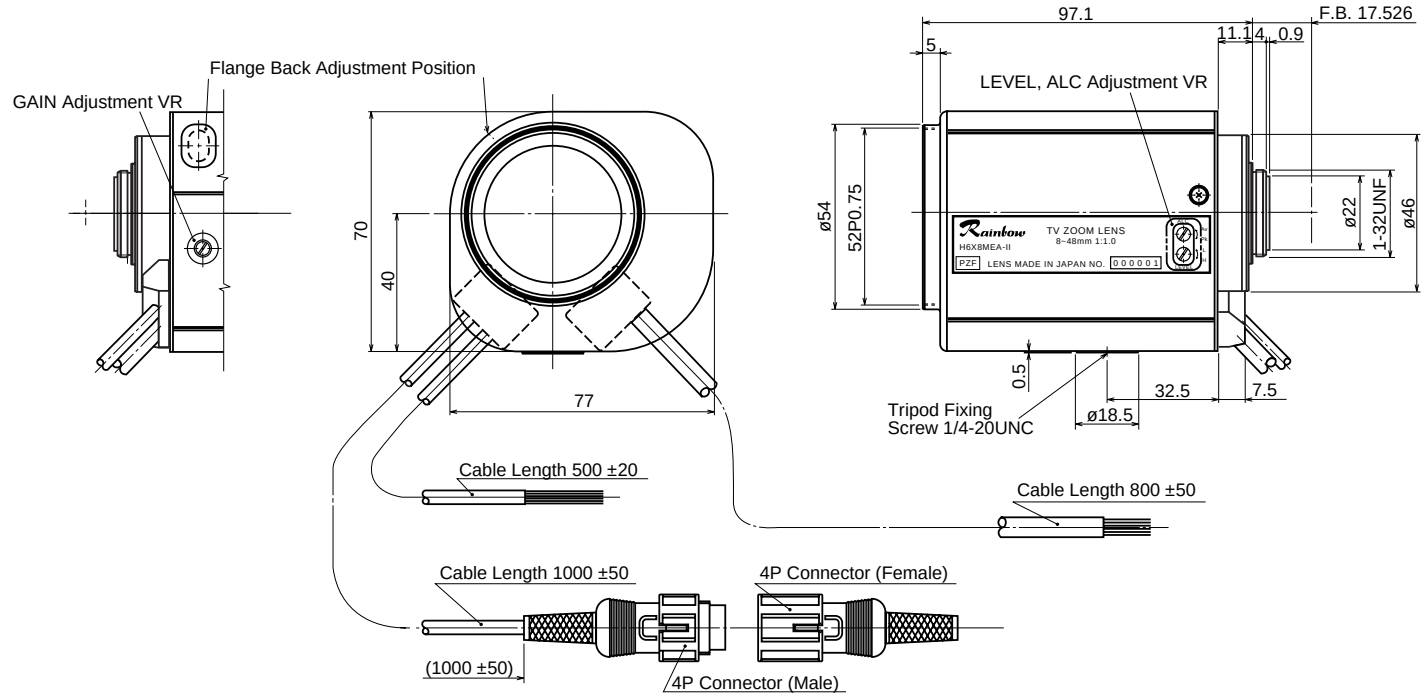
H6X8MEA-II PZF

8~48mm F1.0 – C-Mount

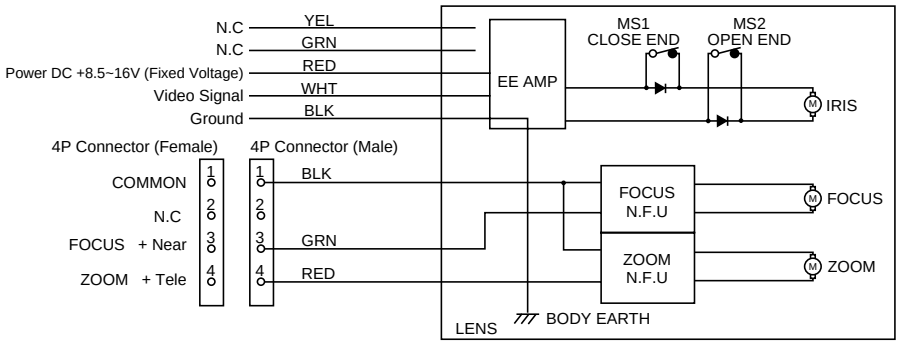
Compatible with 1/2” & 1/3” Cameras

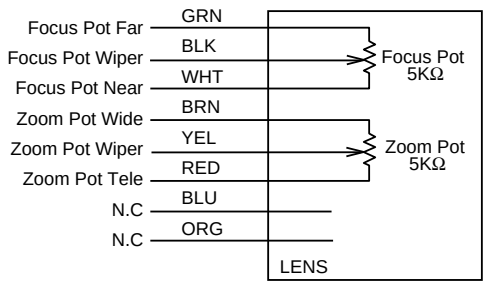
Focal Length:	8~48mm
Max. Relative Aperture:	1:1.0
Iris:	F1.0~Approx. F1200 With ND Spot Filter
Zoom Ratio:	6X
Angular Field of View:	1/2”: 43.6° × 33.4° at 8mm 7.7° × 5.7° at 48mm 1/3": 33.4° × 25.4° at 8mm 5.7° × 4.3° at 48mm
Min. Object Distance (M.O.D.):	1.0m (From Front Vertex)
Optical Back Focal Distance:	14.56mm (In Air)
Auto-Iris Input Signal:	Composite Video Signal or Video Signal
Input Impedance:	High Impedance

Sensitivity Adjustment:		Image Signal Level 0.5~1.0Vp-p
Auto-Iris Accuracy:		With Input Video Signal 0.7Vp-p Within ±15% of Mean value
Operation:	Zoom:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 6 sec. (at 6.4V)
	Focus:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 7 sec. (at 6.4V)
	Iris:	Auto (DC+8~16V: Fixed Voltage, Max 40mA) Speed Within 3 sec.
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		52mm P0.75
Mount:		C-mount (Adjustable Lens Postion)
Size, Approx. Weight:		77 × 70 × 97.1mm (w/h/d), 560g (Approx. 3.0 × 2.8 × 3.8in., 1.2lb.)



– Circuit Diagram –





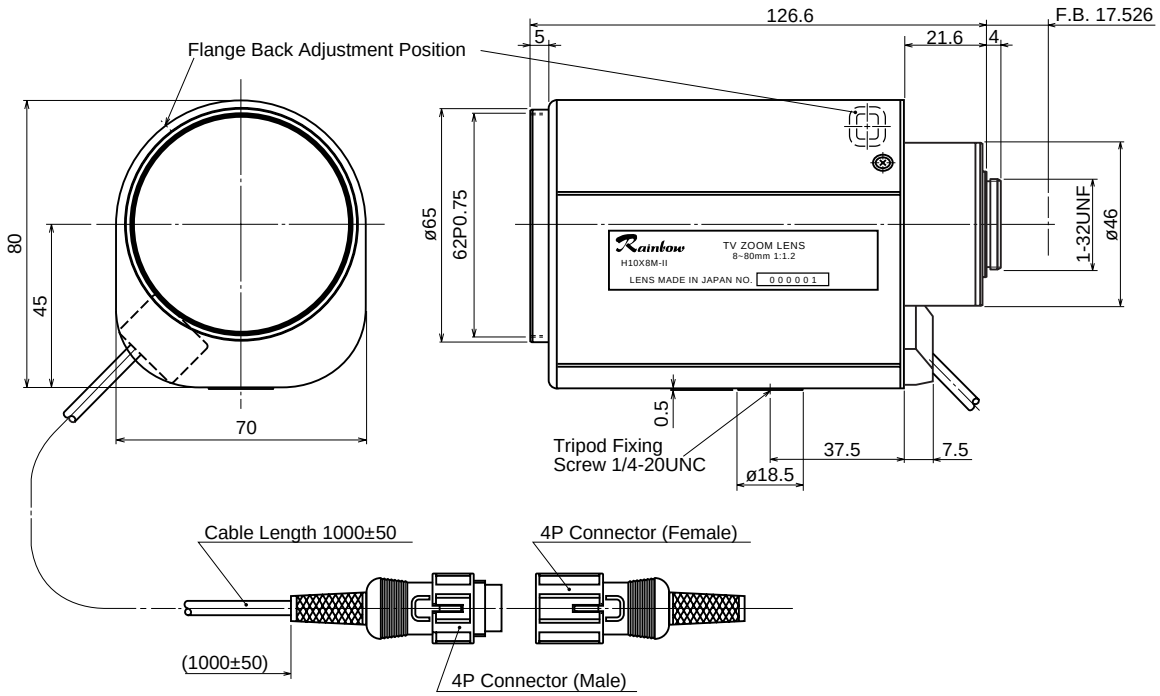
H10X8M-II

8~80mm F1.2 – C-Mount

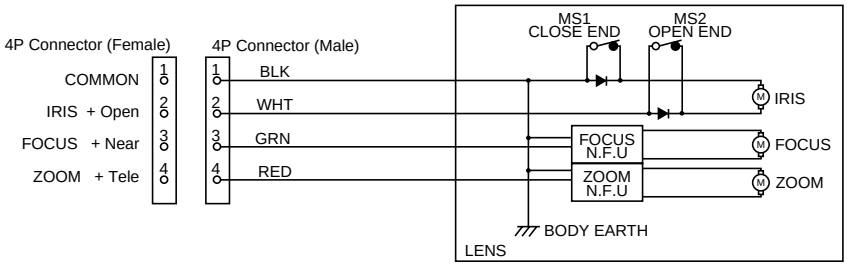
Compatible with 1/2” & 1/3” Cameras

Focal Length:	8~80mm
Max. Relative Aperture:	1:1.2
Iris:	F1.2~Close
Zoom Ratio:	10X
Angular Field of View:	1/2”: 43.6° × 33.4° at 8mm 4.6° × 3.4° at 80mm 1/3”: 33.4° × 25.4° at 8mm 3.4° × 2.6° at 80mm
Min. Object Distance (M.O.D.):	1.2m (From Front Vertex)
Optical Back Focal Distance:	15.764mm (In Air)

Operation:	Zoom:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 6 sec. (at 6.4V)
	Focus:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 7 sec. (at 6.4V)
	Iris:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 3.5 sec. (at 6.4V)
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		62mm P0.75
Mount:		C-mount (Adjustable Lens Postion)
Size, Approx. Weight:		70 × 80 × 126.6mm (w/h/d), 700g (Approx. 2.8 × 3.1 × 5.0in., 1.5lb.)



– Circuit Diagram –

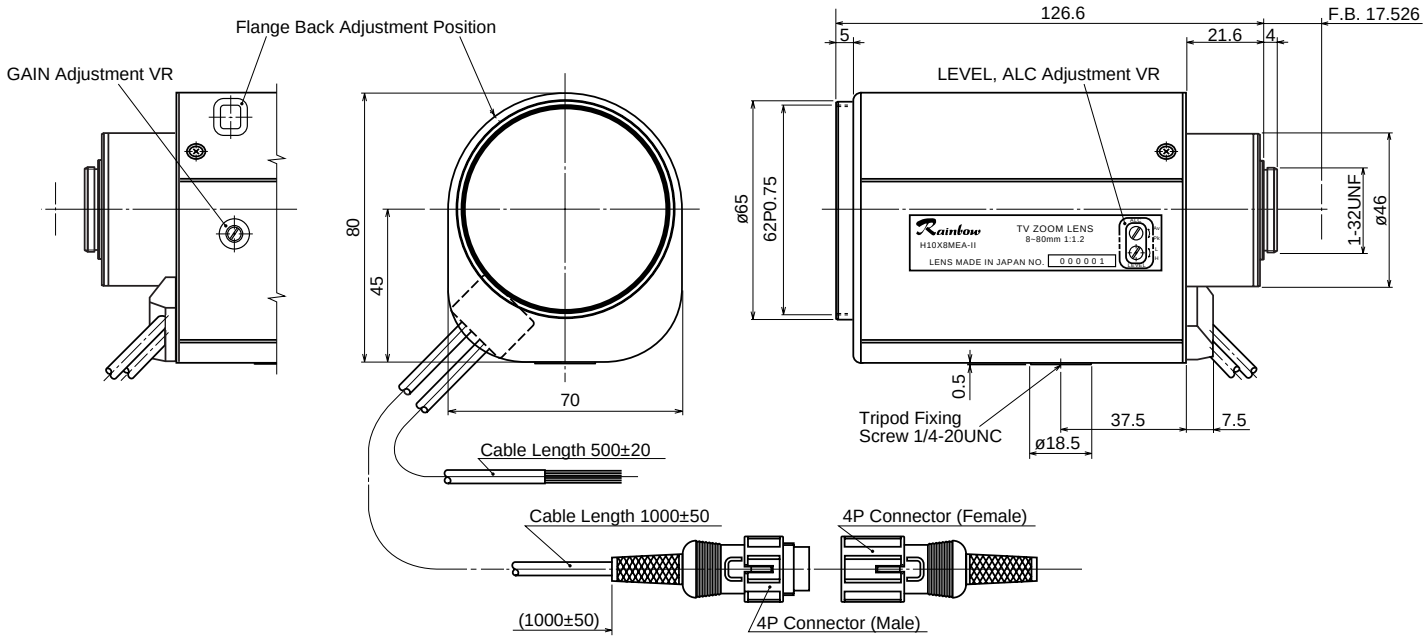


H10X8MEA-II

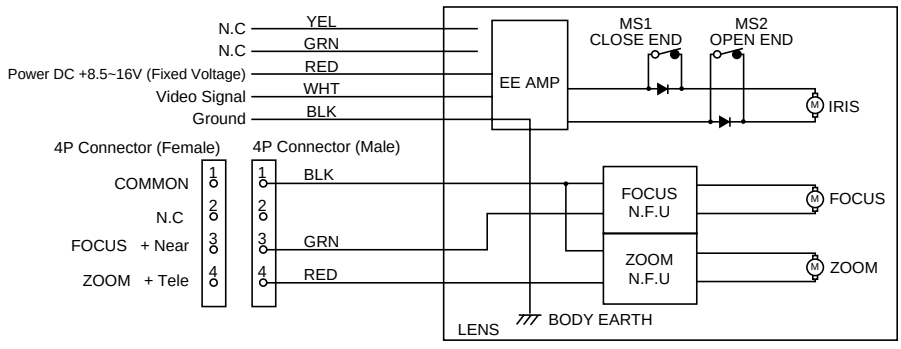
8~80mm F1.2 – C-Mount

Compatible with 1/2” & 1/3” Cameras

Focal Length:	8~80mm
Max. Relative Aperture:	1:1.2
Iris:	F1.2~Approx. F1200 With ND Spot Filter
Zoom Ratio:	10X
Angular Field of View:	1/2”: 43.6° × 33.4° at 8mm 4.6° × 3.4° at 80mm 1/3": 33.4° × 25.4° at 8mm 3.4° × 2.6° at 80mm
Min. Object Distance (M.O.D.):	1.2m (From Front Vertex)
Optical Back Focal Distance:	15.764mm (In Air)
Auto-Iris Input Signal:	Composite Video Signal or Video Signal
Input Impedance:	High Impedance
Sensitivity Adjustment:	Image Signal Level 0.5~1.0Vp-p
Auto-Iris Accuracy:	With Input Video Signal 0.7Vp-p Within ±15% of Mean value
Operation: Zoom:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 6 sec. (at 6.4V)
Focus:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 7 sec. (at 6.4V)
Iris:	Auto (DC+8~16V: Fixed Voltage, Max. 60mA) Speed Within 3.5 sec.
Operation Temperature:	-10 ~ +50°C (+14 ~ 122° F)
Filter Size:	62mm P0.75
Mount:	C-mount (Adjustable Lens Postion)
Size, Approx. Weight:	70 × 80 × 126.6mm (w/h/d), 700g (Approx. 2.8 × 3.1 × 5.0in., 1.5lb.)



– Circuit Diagram –



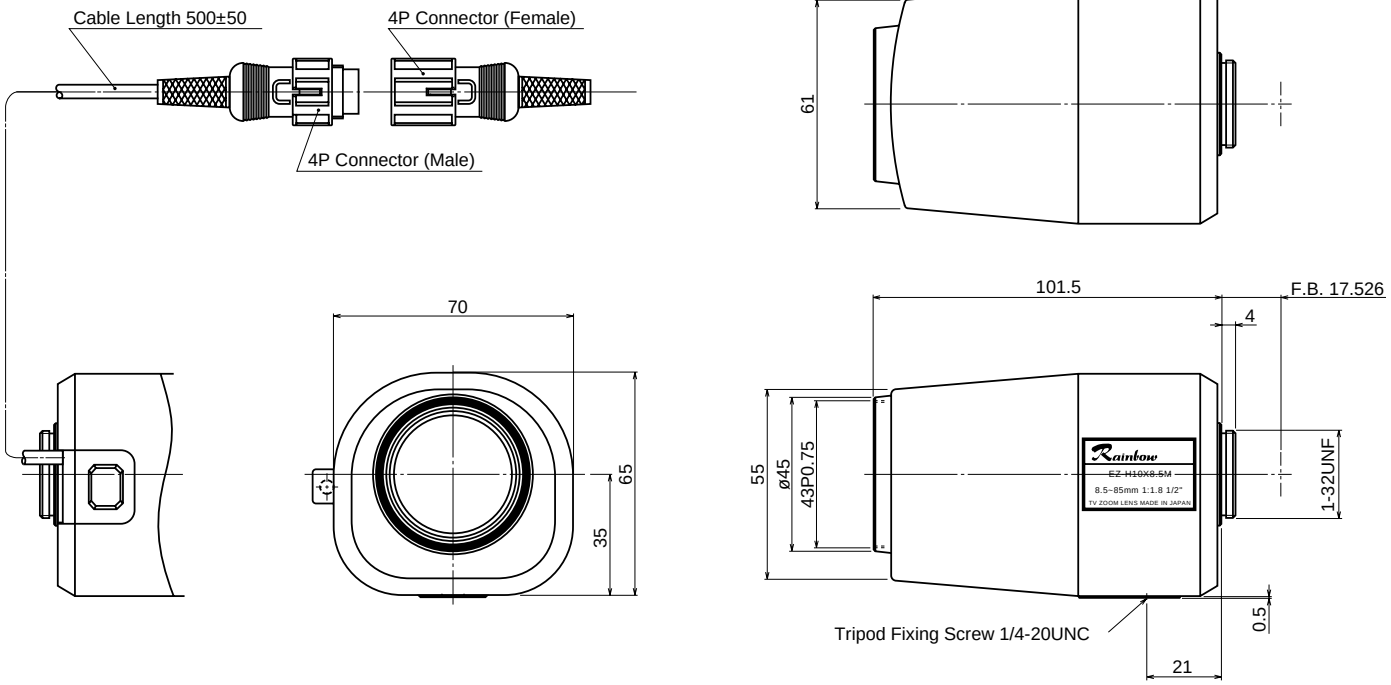
H10X85M

8.5~85mm F1.8 – C-Mount

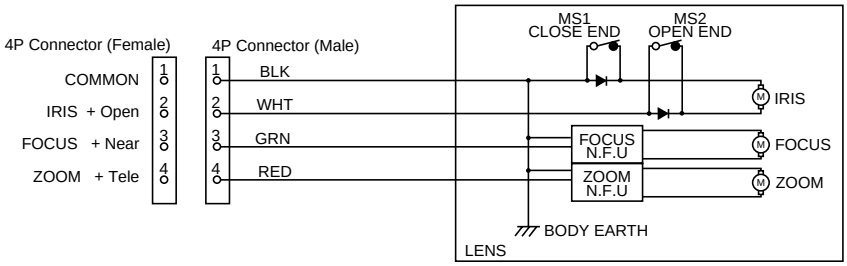
Compatible with 1/2” & 1/3” Cameras

Focal Length:	8.5~85mm
Max. Relative Aperture:	1:1.8
Iris:	F1.8~Close
Zoom Ratio:	10X
Angular Field of View:	1/2”: 41.3° × 31.5° at 8.5mm 4.3° × 3.2° at 85mm 1/3": 31.5° × 18.0° at 8.5mm 3.2° × 1.8° at 85mm
Min. Object Distance (M.O.D.):	1.2m (From Front Vertex)
Optical Back Focal Distance:	15.56mm (In Air)

Operation:	Zoom:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 6.5 sec. (at 6.4V)
	Focus:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 6.5 sec. (at 6.4V)
	Iris:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 3 sec. (at 6.4V)
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		43mm P0.75
Mount:		C-mount (Adjustable Lens Postion)
Size, Approx. Weight:		70 × 65 × 101.5mm (w/h/d), 275g (Approx. 2.8 × 2.6 × 4.0in., 9.7oz.)



– Circuit Diagram –



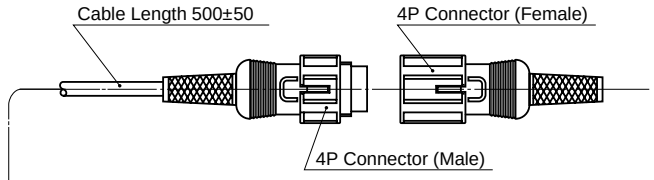
H10X85MGE

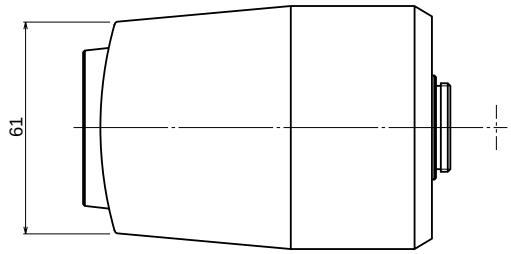
8.5~85mm F1.8 – CS-Mount

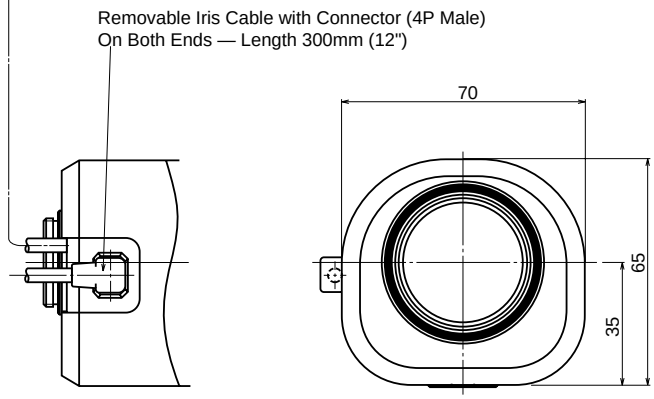
Compatible with 1/2” & 1/3” Cameras
Cable Assembly Required – Sold Separately

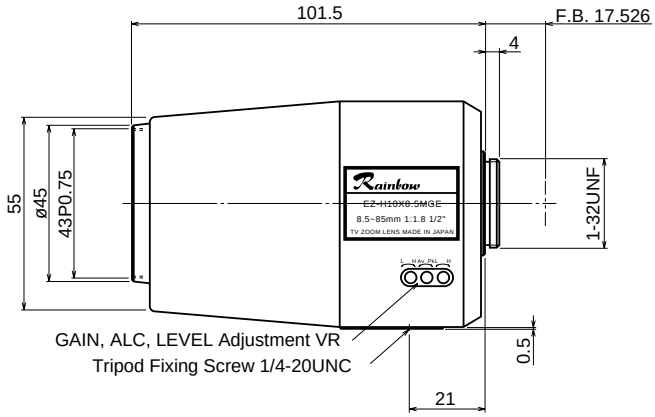
Focal Length:	8.5~85mm
Max. Relative Aperture:	1:1.8
Iris:	F1.8~Approx.F 360 With ND Spot Filter
Zoom Ratio:	10X
Angular Field of View:	1/2": 41.3° × 31.5° at 8.5mm 4.3° × 3.2° at 85mm 1/3": 31.5° × 18.0° at 8.5mm 3.2° × 1.8° at 85mm
Min. Object Distance (M.O.D.):	1.2m (From Front Vertex)
Optical Back Focal Distance:	15.56mm (In Air)
Auto-Iris Input Signal:	Composite Video Signal or Video Signal

Input Impedance:		High Impedance
Sensitivity Adjustment:		Image Signal Level 0.5~1.0Vp-p
Auto-Iris Accuracy:		With Input Video Signal 0.7Vp-p Within ±15% of Mean value
Operation:	Zoom:	Motorized (DC±6.4V~12V, Max 40mA) Speed Approx. 6.5 sec. (at 6.4V)
	Focus:	Motorized (DC±6.4V~12V, Max 40mA) Speed Approx. 6.5 sec. (at 6.4V)
	Iris:	Auto (DC+8.5~16V: Fixed Voltage, Max. 50mA, Auto-Close) Speed Within 4 sec.
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		43mm P0.75
Mount:		CS-mount (Adjustable Lens Postion)
Size, Approx. Weight:		70 × 65 × 101.5mm (w/h/d), 275g (Approx. 2.8 × 2.6 × 4.0in., 9.7oz.)

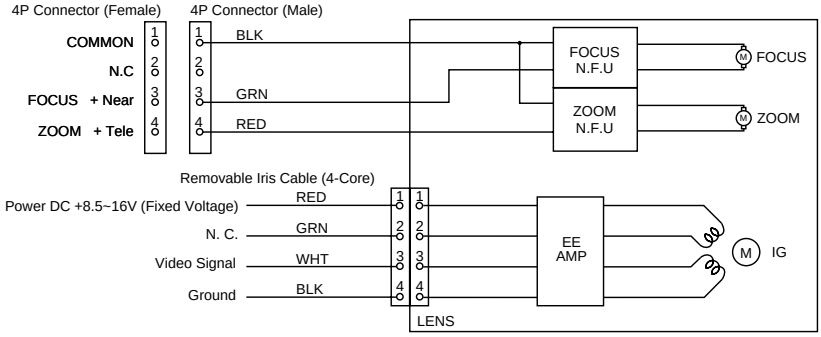








– Circuit Diagram –



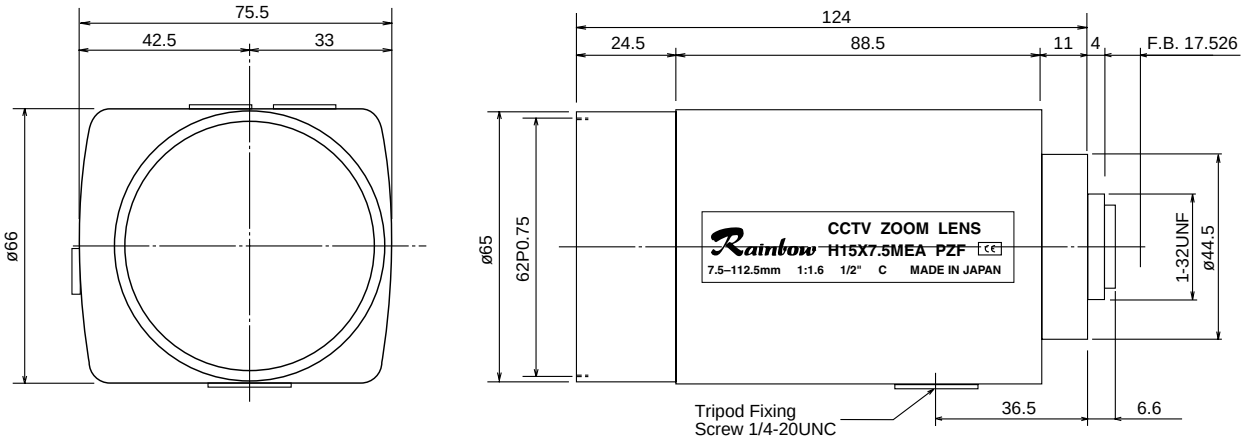
H15X75MEAPH4

7.5~112.5mm F1.6 – C-Mount

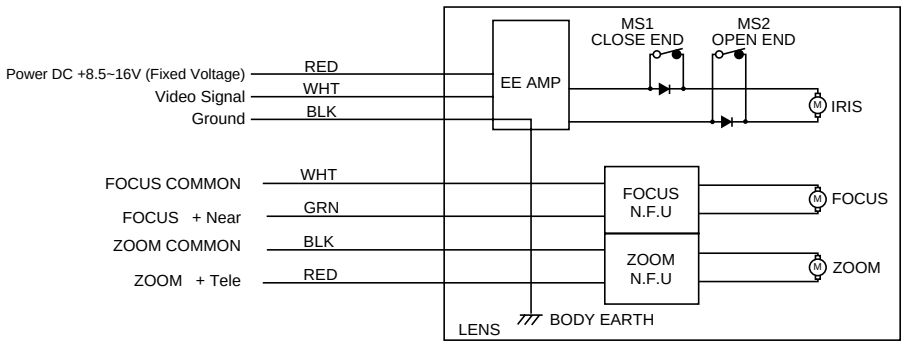
Compatible with 1/2” & 1/3” Cameras

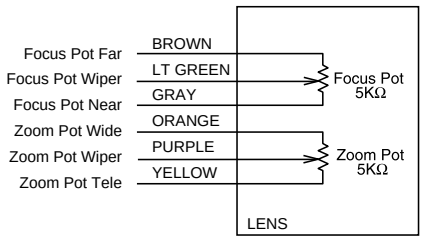
Focal Length:	7.5~112.5mm
Max. Relative Aperture:	1:1.6
Iris:	F1.6~Approx. 360 With ND Spot Filter
Zoom Ratio:	15X
Angular Field of View:	1/2”: 46° × 35° at 7.5mm 3° × 2° at 112.5mm 1/3": 35° × 24° at 7.5mm 2° × 1° at 112.5mm
Min. Object Distance (M.O.D.):	1.5m (From Front Vertex)
Optical Back Focal Distance:	11.0mm (In Air)
Auto-Iris Input Signal:	Composite Video Signa
Input Impedance:	High Impedance

Sensitivity Adjustment:		Image Signal Level 0.5~1.0Vp-p
Auto-Iris Accuracy:		With Input Video Signal 0.7Vp-p Within ±15% of Mean value
Operation:	Zoom:	Motorized (DC±6V~12V, Max 40mA) Speed 2~7 sec. (adjustable)
	Focus:	Motorized (DC±6V~12V, Max 80mA) Speed 2~7 sec. (adjustable)
	Iris:	Auto (DC+8~16V: Fixed Voltage, Max. 40mA) Speed Within 2 sec.
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		62mm P0.75
Mount:		C-mount (Adjustable Lens Postion)
Size, Approx. Weight:		75.5 × 66 × 124mm (w/h/d), 780g (Approx. 3.0 × 2.6 × 4.9in., 1.7lb.)



– Circuit Diagram –





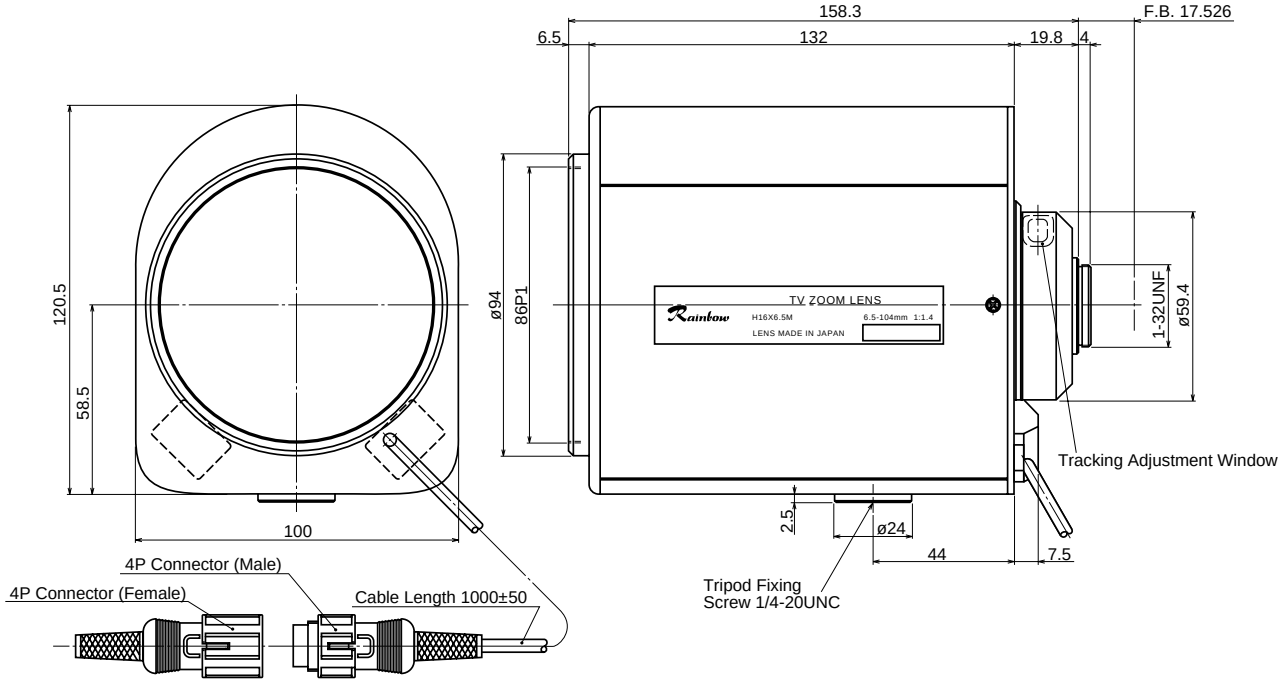
H16X6.5M

6.5~104mm F1.4 – C-Mount

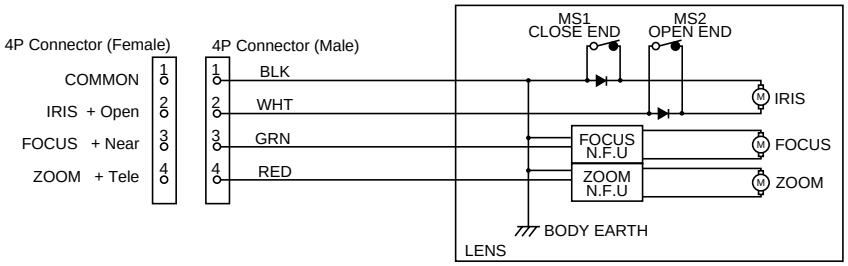
Compatible with 1/2” & 1/3” Cameras

Focal Length:	6.5~104mm
Max. Relative Aperture:	1:1.2
Iris:	F1.2~Close
Zoom Ratio:	16X
Angular Field of View:	1/2”: 52.4° × 40.5° at 6.5mm 3.5° × 2.4° at 104mm 1/3": 40.5° × 31.0° at 6.5mm 2.6° × 2.0° at 104mm
Min. Object Distance (M.O.D.):	1.5m (From Front Vertex)
Optical Back Focal Distance:	16.14mm (In Air)

Operation:	Zoom:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 9 sec. (at 6.4V)
	Focus:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 17 sec. (at 6.4V)
	Iris:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 2.5 sec. (at 6.4V)
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		86mm P1
Mount:		C-mount (Adjustable Lens Postion)
Size, Approx. Weight:		100 × 120.5 × 158.3mm (w/h/d), 1.5kg (Approx. 4.0 × 4.8 × 6.2in., 3.3lb.)



– Circuit Diagram –



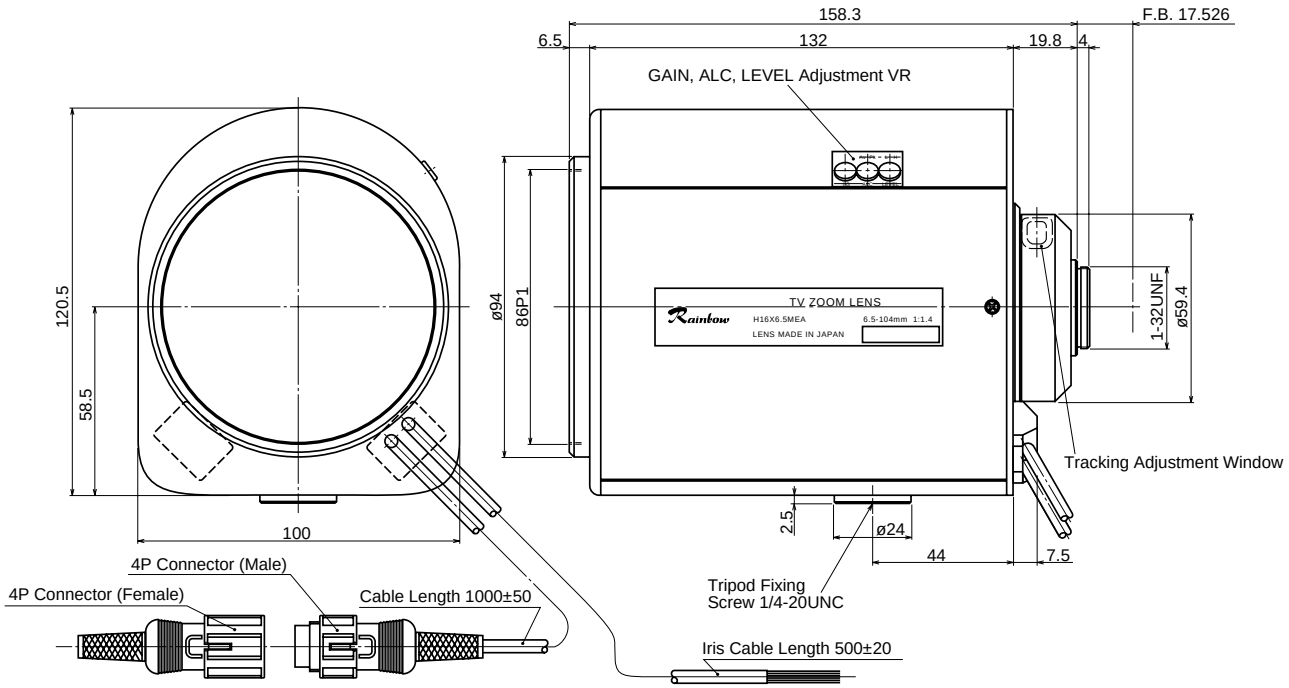
H16X6.5MEA

6.5~104mm 1:1.4 – C-Mount

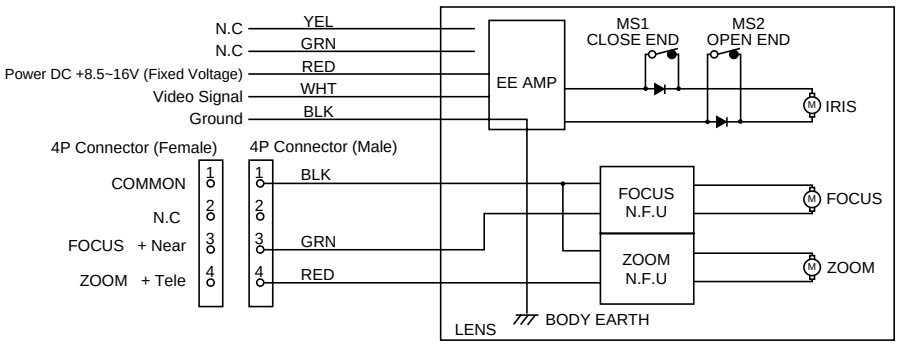
Compatible with 1/2” & 1/4” Cameras

Focal Length:	6.5~104mm
Max. Relative Aperture:	1:1.4 at 6.5~80mm 1:1.6 at 104mm
Iris:	F1.4~Approx. F1200 With ND Spot Filter
Zoom Ratio:	16X
Angular Field of View:	1/2”: 52.4° × 40.5° at 6.5mm 3.5° × 2.6° at 104mm 1/3": 40.5° × 31.° at 6.5mm 3.4° × 2.6° at 104mm
Min. Object Distance (M.O.D.):	1.5m (From Front Vertex)
Optical Back Focal Distance:	16.14mm (In Air)
Auto-Iris Input Signal:	Composite Video Signal or Video Signal

Input Impedance:		High Impedance
Sensitivity Adjustment:		Image Signal Level 0.5~1.0Vp-p
Auto-Iris Accuracy:		With Input Video Signal 0.7Vp-p Within ±15% of Mean value
Operation:	Zoom:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 6 sec. (at 6.4V)
	Focus:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 10 sec. (at 6.4V)
	Iris:	Auto (DC+8~16V: Fixed Voltage, Max. 60mA) Speed Within 3 sec.
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		86mm P1
Mount:		C-mount (Adjustable Lens Postion)
Size, Approx. Weight:		100 × 120.5 × 158.3mm (w/h/d), 1.5kg (Approx. 4.0 × 4.8 × 6.2in., 3.3lb.)



– Circuit Diagram –



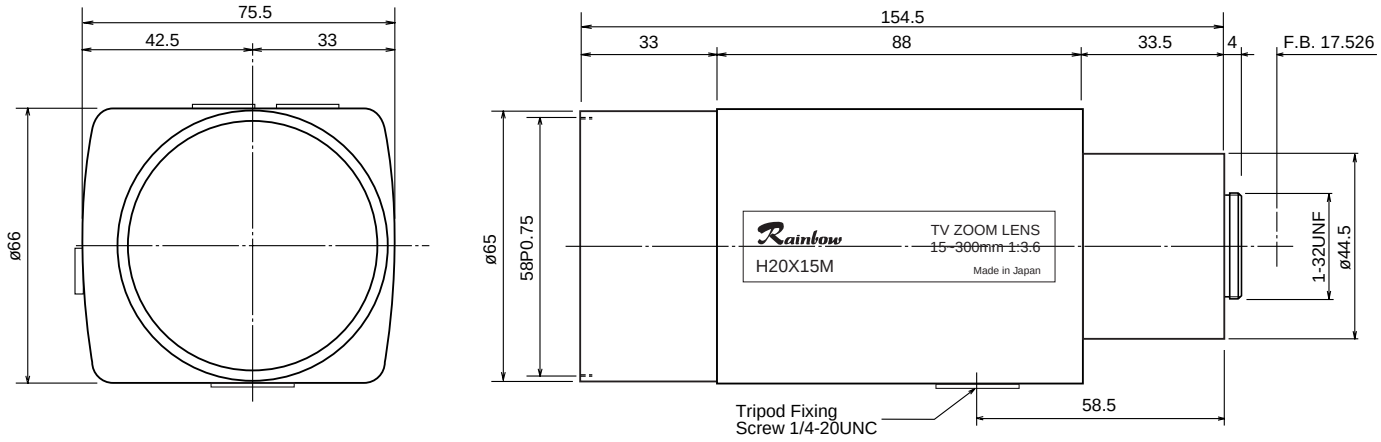
H20X15M

15~300mm F3.6 – C-Mount

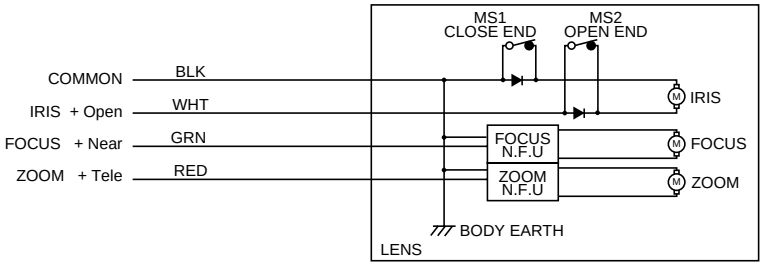
Compatible with 1/2” & 1/3” Cameras

Focal Length:	15~300mm
Max. Relative Aperture:	1:3.6
Iris:	F3.6~Close
Zoom Ratio:	20X
Angular Field of View:	1/2”: 24.1° × 18.2° at 15mm 1.2° × 0.9° at 300mm 1/3": 18.2° × 13.7° at 15mm 0.9° × 0.7° at 300mm
Min. Object Distance (M.O.D.):	2.5m (From Front Vertex)
Optical Back Focal Distance:	11.40mm (In Air)

Operation:	Zoom:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 6 sec. (at 6.4V)
	Focus:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 7 sec. (at 6.4V)
	Iris:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 2.5 sec. (at 6.4V)
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		58mm P0.75
Mount:		C-mount (Adjustable Lens Postion)
Size, Approx. Weight:		75.5 × 66 × 154.5mm (w/h/d), 850g (Approx. 3.0 × 2.6 × 6.1in., 1.9lb.)



– Circuit Diagram –



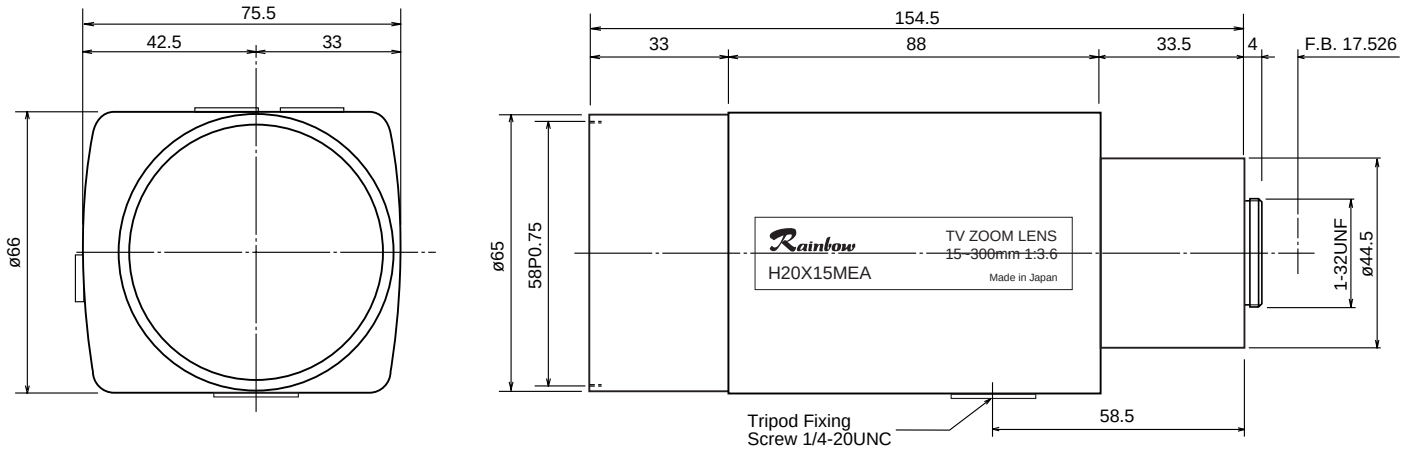
H20X15MEA

15~300mm F3.6 – C-Mount

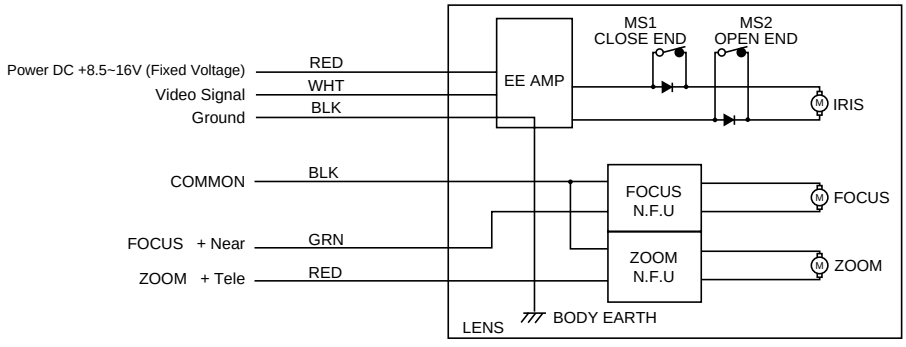
Compatible with 1/2” & 1/3” Cameras

Focal Length:	15~300mm
Max. Relative Aperture:	1:3.6
Iris:	F3.6~Approx. F360 With ND Spot Filter
Zoom Ratio:	20X
Angular Field of View:	1/2”: 24.1° × 18.2° at 15mm 1.2° × 0.9° at 300mm 1/3": 18.2° × 13.7° at 15mm 0.9° × 0.7° at 300mm
Min. Object Distance (M.O.D.):	2.5m (From Front Vertex)
Optical Back Focal Distance:	11.40mm (In Air)
Auto-Iris Input Signal:	Composite Video Signal or Video Signal

Input Impedance:		High Impedance
Sensitivity Adjustment:		Image Signal Level 0.5~1.0Vp-p
Auto-Iris Accuracy:		With Input Video Signal 0.7Vp-p Within ±15% of Mean value
Operation:	Zoom:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 6 sec. (at 6.4V)
	Focus:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 7 sec. (at 6.4V)
	Iris:	Auto (DC+8~16V: Fixed Voltage, Max. 40mA) Speed Within 3.5 sec.
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		58mm P0.75
Mount:		C-mount (Adjustable Lens Postion)
Size, Approx. Weight:		75.5 × 66 × 154.5mm (w/h/d), 850g (Approx. 3.0 × 2.6 × 6.1in., 1.9lb.)



– Circuit Diagram –



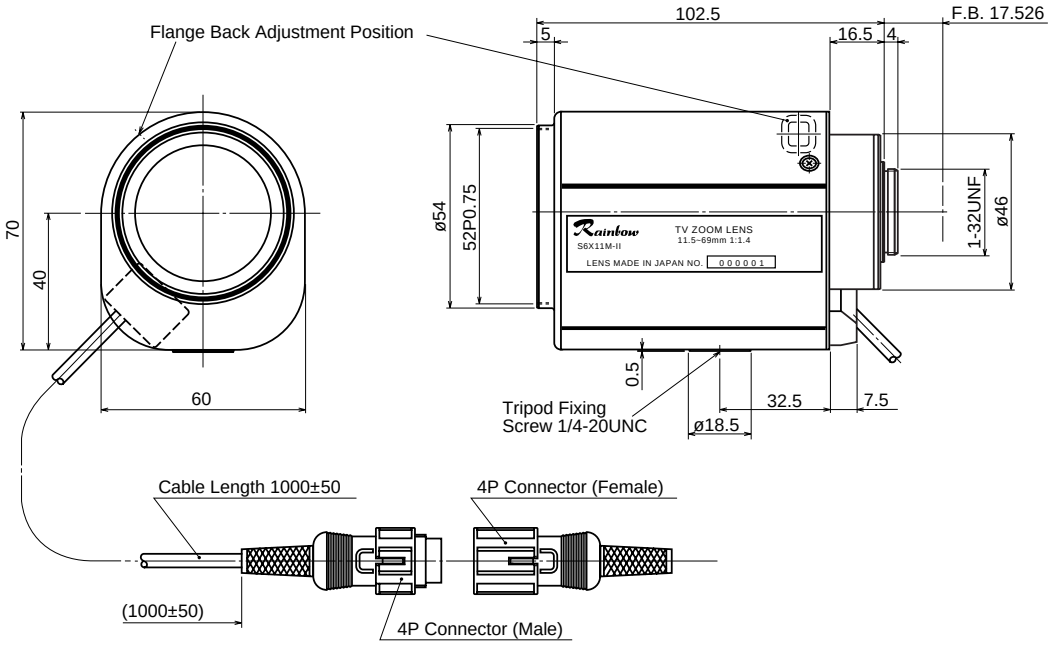
S6X11M-II

11.5~69mm F1.4 – C-Mount

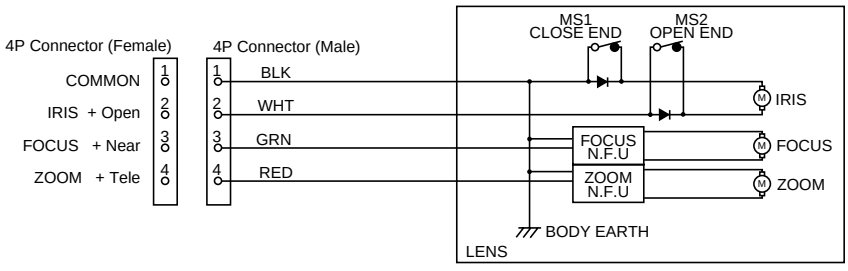
Compatible with 2/3", 1/2" & 1/3", Cameras

Focal Length:	11.5~69mm
Max. Relative Aperture:	1:1.4
Iris:	F1.4~Close
Zoom Ratio:	6X
Angular Field of View:	2/3": 41.9° × 32.0° at 11.5mm 7.3° × 5.5° at 69mm 1/2": 31.1° × 23.6° at 11.5mm 5.3° × 4.0° at 69mm 1/3": 23.6° × 17.8° at 11.5mm 4.0° × 3.0° at 69mm
Min. Object Distance (M.O.D.):	1.0m (From Front Vertex)
Optical Back Focal Distance:	17.93mm (In Air)

Operation:	Zoom:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 6 sec. (at 6.4V)
	Focus:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 7 sec. (at 6.4V)
	Iris:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 3.5 sec. (at 6.4V)
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		52mm P0.75
Mount:		C-mount (Adjustable Lens Postion)
Size, Approx. Weight:		60 × 70 × 102.5mm (w/h/d), 500g (Approx. 2.4 × 2.8 × 4.0in., 1.1lb.)



– Circuit Diagram –



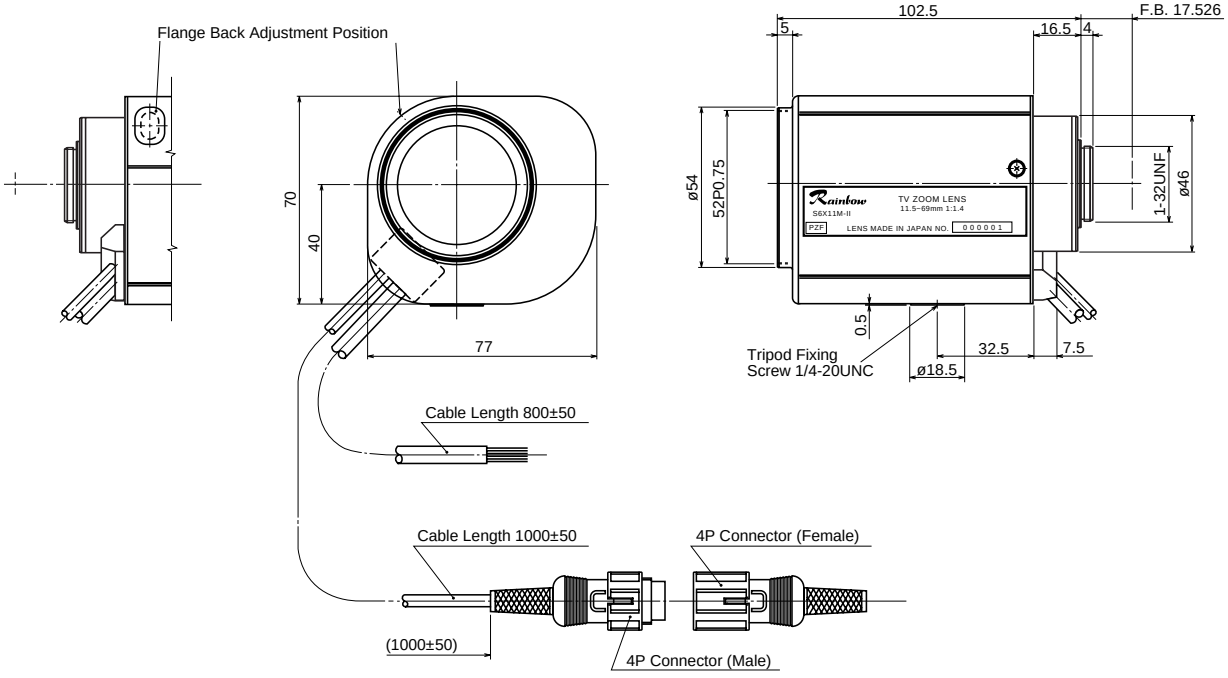
S6X11M-II PZF

11.5~69mm F1.4 – C-Mount

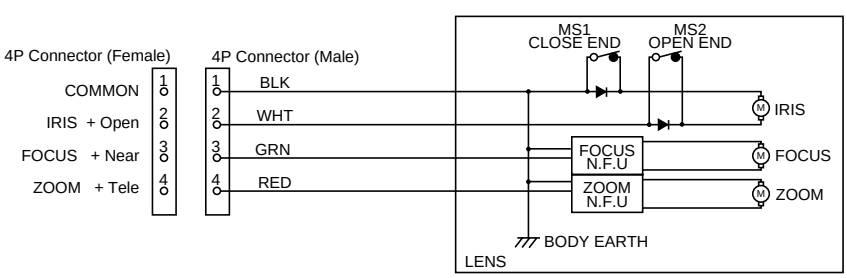
Compatible with 2/3”, 1/2” & 1/3” Cameras

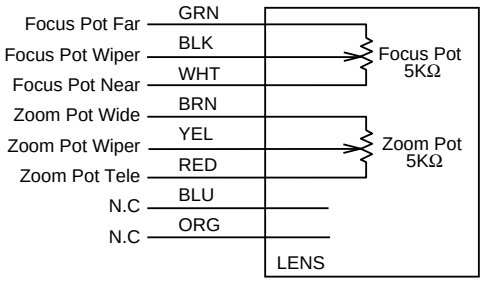
Focal Length:	11.5~69mm
Max. Relative Aperture:	1:1.4
Iris:	F1.4~Close
Zoom Ratio:	6X
Angular Field of View:	2/3”: 41.9° × 32.0° at 11.5mm 7.3° × 5.5° at 69mm 1/2”: 31.1° × 23.6° at 11.5mm 5.3° × 4.0° at 69mm 1/3": 23.6° × 17.8° at 11.5mm 4.0° × 3.0° at 69mm
Min. Object Distance (M.O.D.):	1.0m (From Front Vertex)
Optical Back Focal Distance:	17.93mm (In Air)

Operation:	Zoom:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 6 sec. (at 6.4V)
	Focus:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 7 sec. (at 6.4V)
	Iris:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 3.5 sec. (at 6.4V)
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		52mm P0.75
Mount:		C-mount (Adjustable Lens Postion)
Size, Approx. Weight:		60 × 70 × 102.5mm (w/h/d), 500g (Approx. 2.4 × 2.8 × 4.0in., 1.1lb.)



– Circuit Diagram –



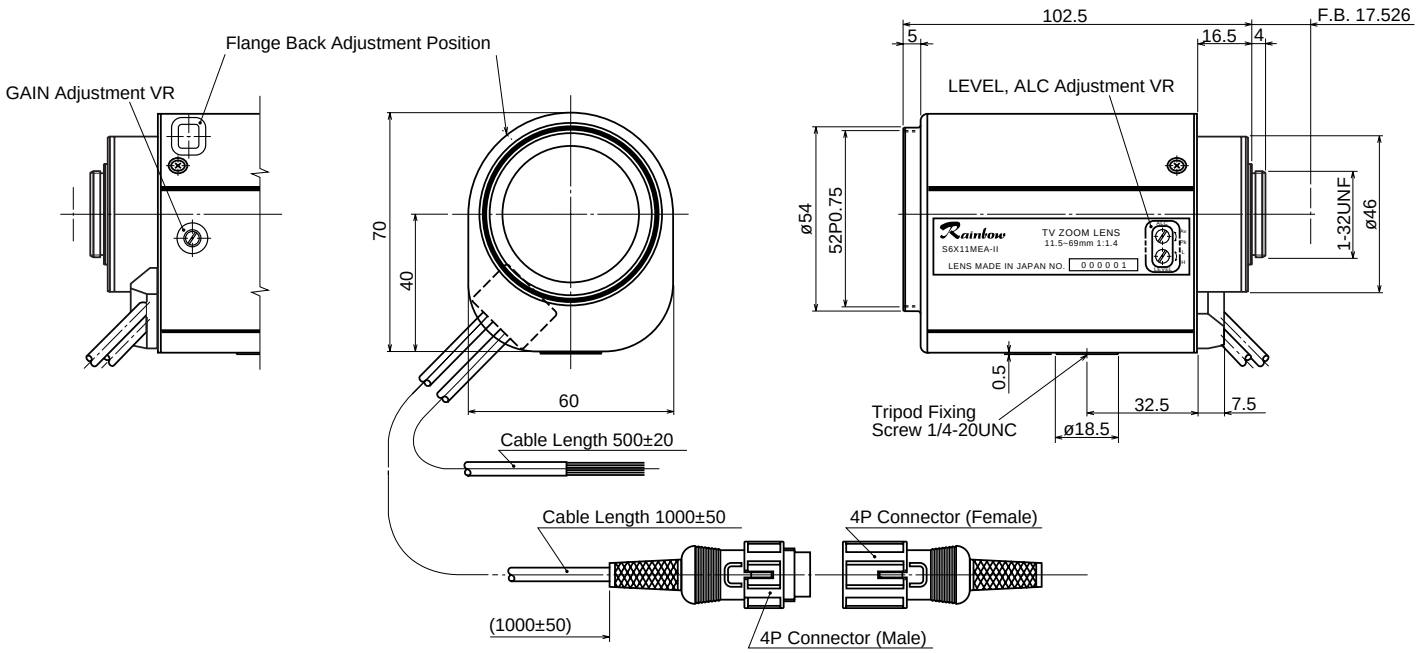


S6X11MEA-II

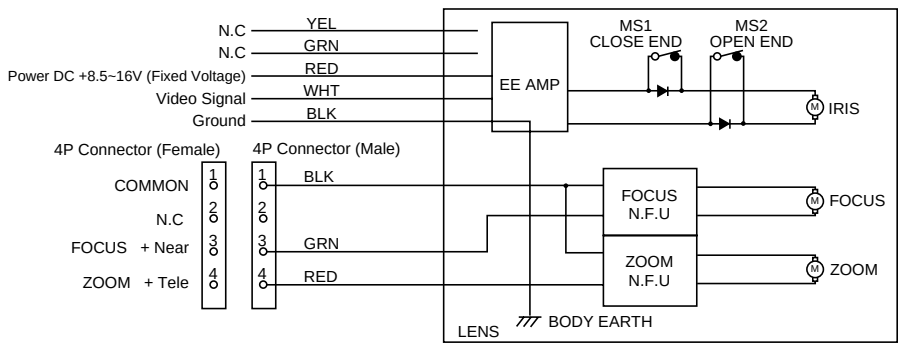
11.5~69mm F1.4 – C-Mount

Compatible with 2/3”, 1/2” & 1/3” Cameras

Focal Length:	11.5~69mm
Max. Relative Aperture:	1:1.4
Iris:	F1.4~Approx. F1200 With ND Spot Filter
Zoom Ratio:	6X
Angular Field of View:	2/3”: 41.9° × 32.0° at 11.5mm 7.3° × 5.5° at 69mm 1/2”: 31.1° × 23.6° at 11.5mm 5.3° × 4.0° at 69mm 1/3": 23.6° × 17.8° at 11.5mm 4.0° × 3.0° at 69mm
Min. Object Distance (M.O.D.):	1.0m (From Front Vertex)
Optical Back Focal Distance:	17.93mm (In Air)
Auto-Iris Input Signal:	Composite Video Signal or Video Signal
Input Impedance:	High Impedance
Sensitivity Adjustment:	Image Signal Level 0.5~1.0Vp-p
Auto-Iris Accuracy:	With Input Video Signal 0.7Vp-p Within ±15% of Mean value
Operation: Zoom:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 6 sec. (at 6.4V)
Focus:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 7 sec. (at 6.4V)
Iris:	Auto (DC+8.5~16V: Fixed Voltage, Max. 60mA) Speed Within 3 sec.
Operation Temperature:	-10 ~ +50°C (+14 ~ 122° F)
Filter Size:	52mm P0.75
Mount:	C-mount (Adjustable Lens Postion)
Size, Approx. Weight:	60 × 70 × 102.5mm (w/h/d), 500g (Approx. 2.4 × 2.8 × 4.0in., 1.1lb.)



– Circuit Diagram –

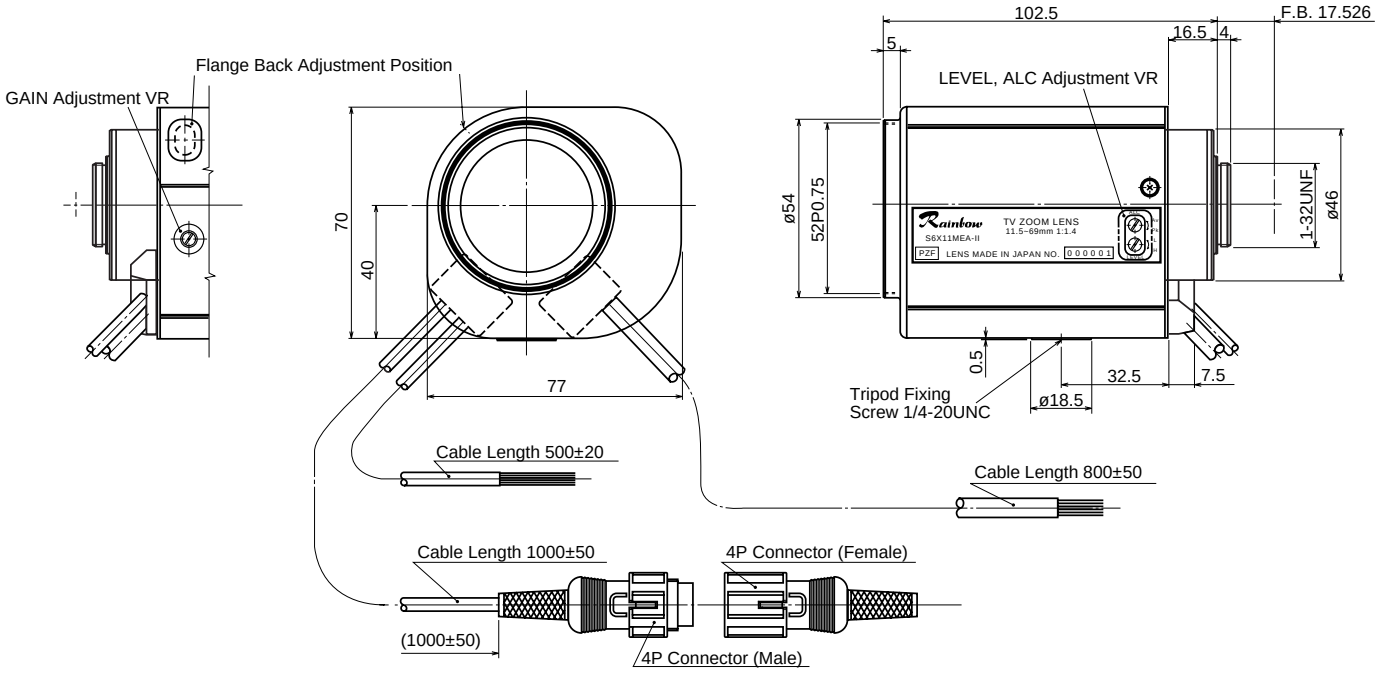


S6X11MEA-II PZF

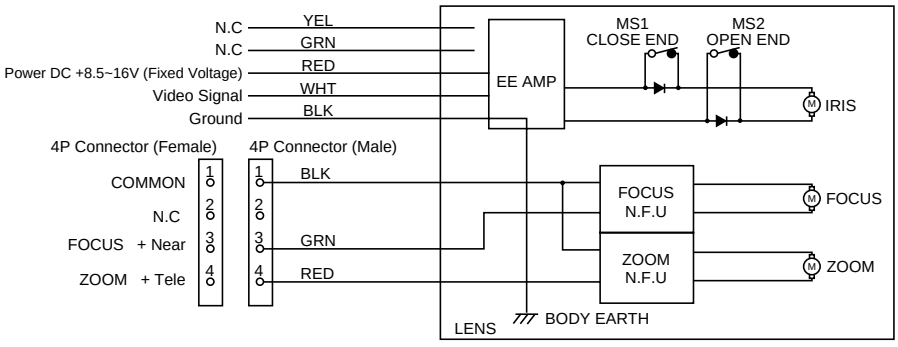
11.5~69mm F1.4 – C-Mount

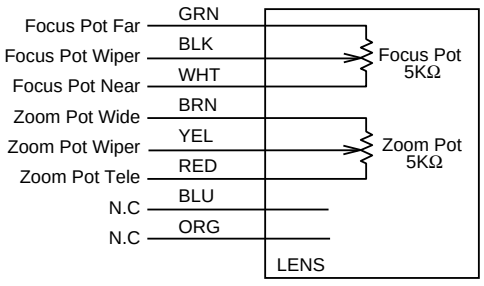
Compatible with 2/3”, 1/2” & 1/3” Cameras

Focal Length:	11.5~69mm
Max. Relative Aperture:	1:1.4
Iris:	F1.4~Approx. F1200 With ND Spot Filter
Zoom Ratio:	6X
Angular Field of View:	2/3”: 41.9° × 32.0° at 11.5mm 7.3° × 5.5° at 69mm 1/2”: 31.1° × 23.6° at 11.5mm 5.3° × 4.0° at 69mm 1/3": 23.6° × 17.8° at 11.5mm 4.0° × 3.0° at 69mm
Min. Object Distance (M.O.D.):	1.0m (From Front Vertex)
Optical Back Focal Distance:	17.93mm (In Air)
Auto-Iris Input Signal:	Composite Video Signal or Video Signal
Input Impedance:	High Impedance
Sensitivity Adjustment:	Image Signal Level 0.5~1.0Vp-p
Auto-Iris Accuracy:	With Input Video Signal 0.7Vp-p Within ±15% of Mean value
Operation: Zoom:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 6 sec. (at 6.4V)
Focus:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 7 sec. (at 6.4V)
Iris:	Auto (DC+8.5~16V: Fixed Voltage, Max. 60mA) Speed Within 3 sec.
Operation Temperature:	-10 ~ +50°C (+14 ~ 122° F)
Filter Size:	52mm P0.75
Mount:	C-mount (Adjustable Lens Postion)
Size, Approx. Weight:	60 × 70 × 102.5mm (w/h/d), 500g (Approx. 2.4 × 2.8 × 4.0in., 1.1lb.)



– Circuit Diagram –





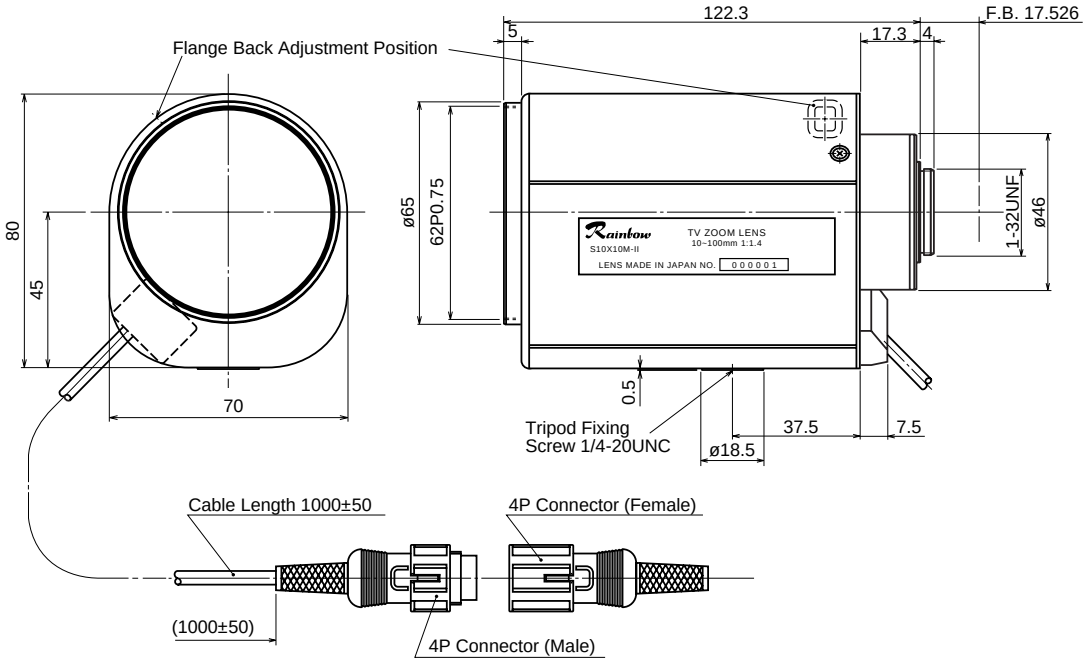
S10X10M-II

10~100mm F1.4 – C-Mount

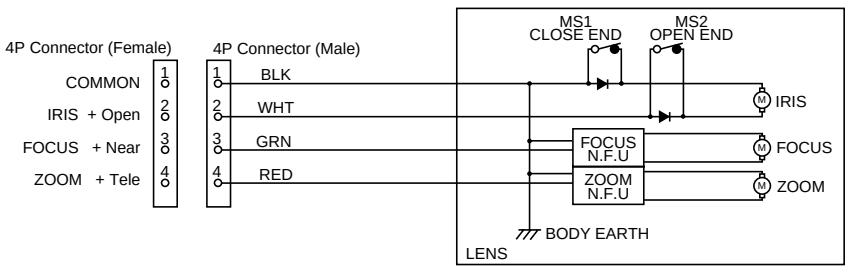
Compatible with 2/3", 1/2" & 1/3" Cameras

Focal Length:	10~100mm
Max. Relative Aperture:	1:1.4
Iris:	F1.4~Close
Zoom Ratio:	10X
Angular Field of View:	2/3": 47.5° × 36.5° at 10mm 5.0° × 3.8° at 100mm 1/2": 35.5° × 27.0° at 10mm 3.7° × 2.7° at 100mm 1/3": 27.0° × 20.4° at 10mm 2.8° × 2.1° at 100mm
Min. Object Distance (M.O.D.):	1.2m (From Front Vertex)
Optical Back Focal Distance:	14.694mm (In Air)

Operation:	Zoom:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 6 sec. (at 6.4V)
	Focus:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 7 sec. (at 6.4V)
	Iris:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 3.5 sec. (at 6.4V)
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		62mm P0.75
Mount:		C-mount (Adjustable Lens Postion)
Size, Approx. Weight:		70 × 80 × 122.3mm (w/h/d), 700g (Approx. 2.8 × 3.1 × 4.8in., 1.5lb.)



– Circuit Diagram –



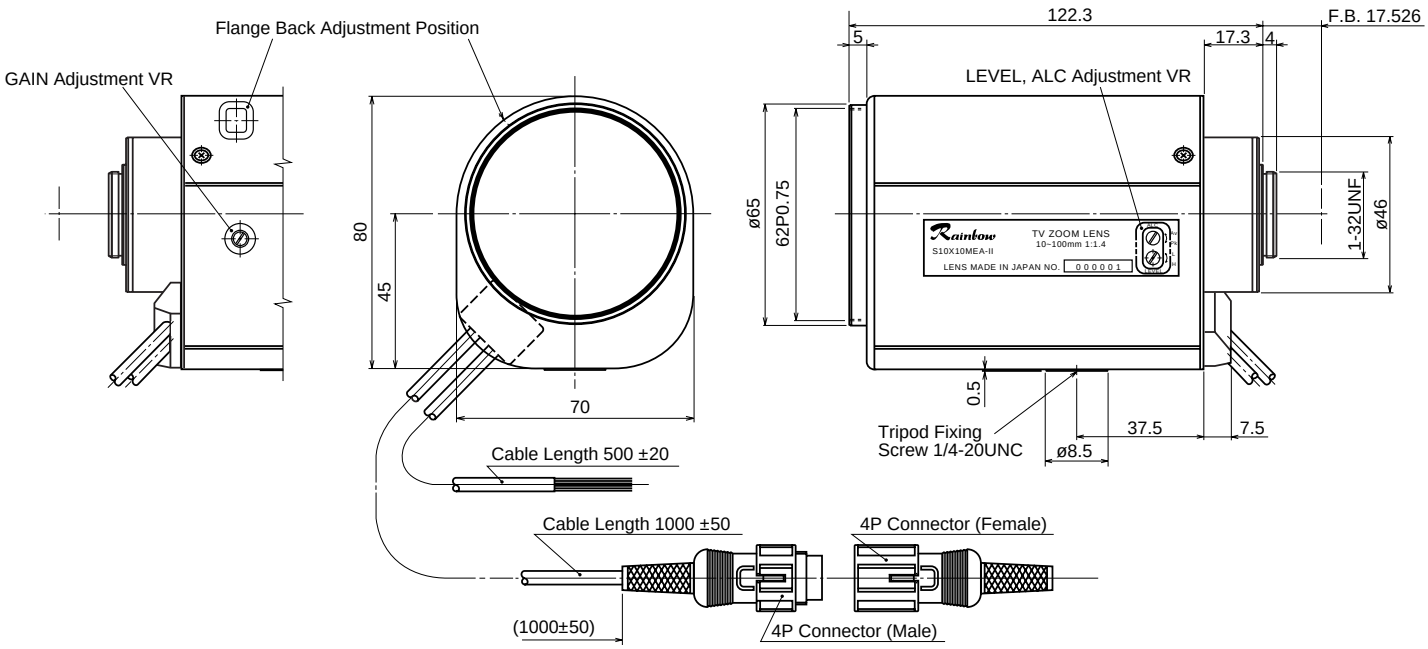
S10X10MEA-II

10~100mm F1.4 – C-Mount

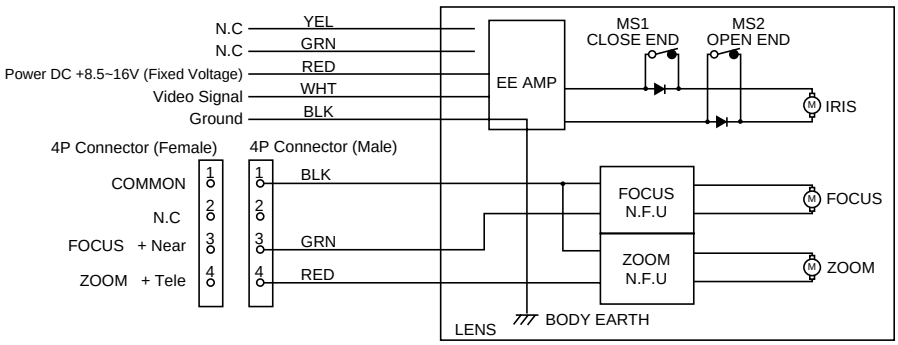
Compatible with 2/3”, 1/2” & 1/3” Cameras

Focal Length:	10~100mm
Max. Relative Aperture:	1:1.4
Iris:	F1.4~Approx. F1200 With ND Spot Filter
Zoom Ratio:	10X
Angular Field of View:	2/3”: 47.5° × 36.5° at 10mm 5.0° × 3.8° at 100mm 1/2”: 35.5° × 27.0° at 10mm 3.7° × 2.7° at 100mm 1/3": 27.0° × 20.4° at 10mm 2.8° × 2.1° at 100mm
Min. Object Distance (M.O.D.):	1.2m (From Front Vertex)
Optical Back Focal Distance:	14.694mm (In Air)
Auto-Iris Input Signal:	Composite Video Signal or Video Signal

Input Impedance:		High Impedance
Sensitivity Adjustment:		Image Signal Level 0.5~1.0Vp-p
Auto-Iris Accuracy:		With Input Video Signal 0.7Vp-p Within ±15% of Mean value
Operation:	Zoom:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 6 sec. (at 6.4V)
	Focus:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 7 sec. (at 6.4V)
	Iris:	Auto (DC+8.5~16V: Fixed Voltage, Max. 60mA) Speed Within 3.5 sec.
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		62mm P0.75
Mount:		C-mount (Adjustable Lens Postion)
Size, Approx. Weight:		70 × 80 × 122.3mm (w/h/d), 700g (Approx. 2.8 × 3.1 × 4.8in., 1.5lb.)



– Circuit Diagram –



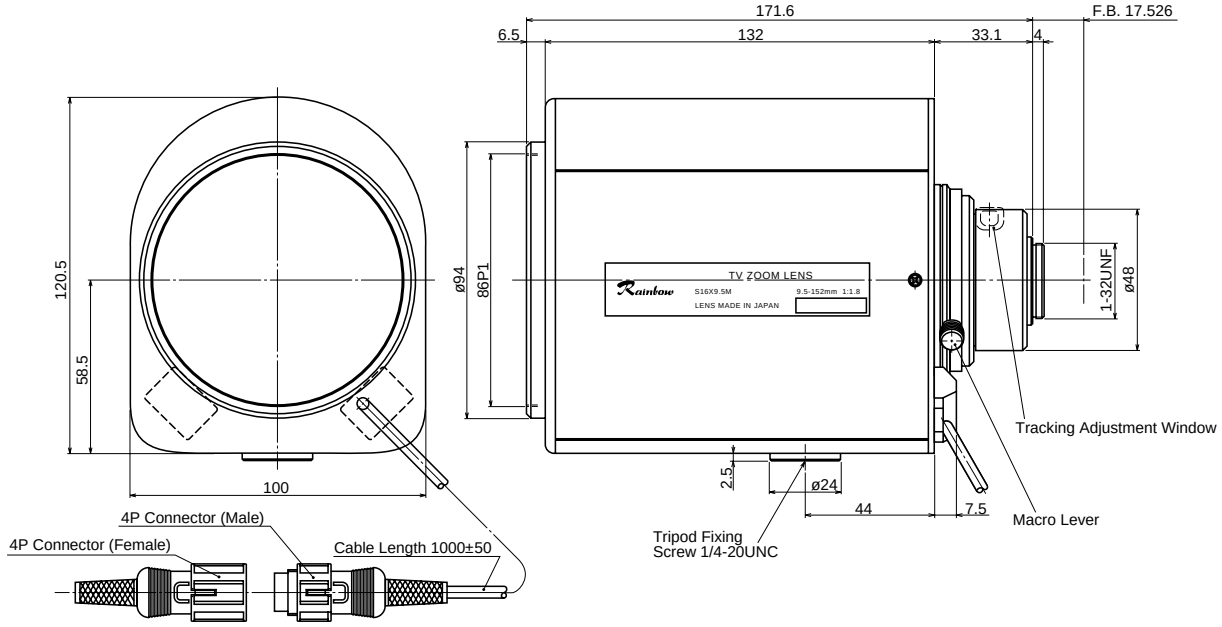
S16X9.5M

9.5~152mm F1.4 – C-Mount

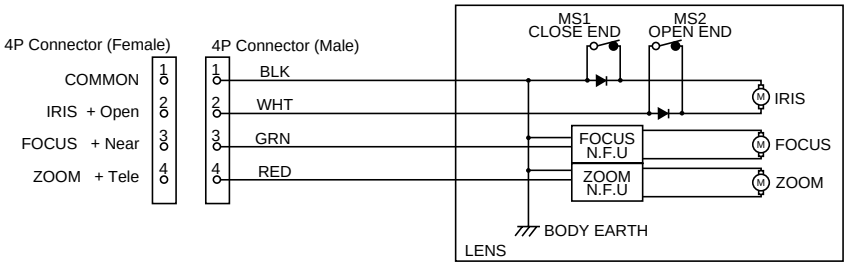
Compatible with 2/3”, 1/2” & 1/3” Cameras

Focal Length:	9.5~152mm
Max. Relative Aperture:	1:1.8 at 9.5~110mm 1:2.3 at 152mm
Iris:	F1.8-Close
Zoom Ratio:	10X
Angular Field of View:	2/3”: 49.7° × 38.3° at 9.5mm 3.3 × 2.5° at 152mm 1/2”: 37.2° × 28.4° at 9.5mm 2.4° × 1.8° at 152mm 1/3": 28.4° × 21.5° at 9.5mm 1.8° × 1.4° at 152mm
Min. Object Distance (M.O.D.):	1.0m (From Front Vertex) 22mm at macro
Optical Back Focal Distance:	20.15mm (In Air)

Operation:	Zoom:	Motorized (DC±4V~12V, Max 80mA) Speed Approx. 9 sec. (at 6.4V)
	Focus:	Motorized (DC±4V~12V, Max 80mA) Speed Approx. 17 sec. (at 6.4V)
	Iris:	Motorized (DC±4V~12V, Max 40mA) Speed Approx. 3 sec. (at 6.4V)
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		86mm P1
Mount:		C-mount (Adjustable Lens Postion)
Size, Approx. Weight:		100 × 120.5 × 171.6mm (w/h/d), 1.5kg (Approx. 4.0 × 4.7 × 6.8in., 3.3lb.)

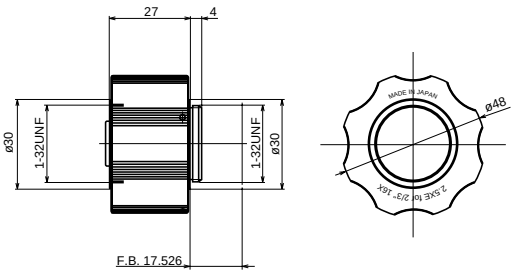


– Circuit Diagram –



– Optional Extender –

Model: 2.5XE – Rear conversion lens to multiply the focal length by 2.5X to achieve 23.8~380mm.
Note: will multiply the F-stop by 2.5X.



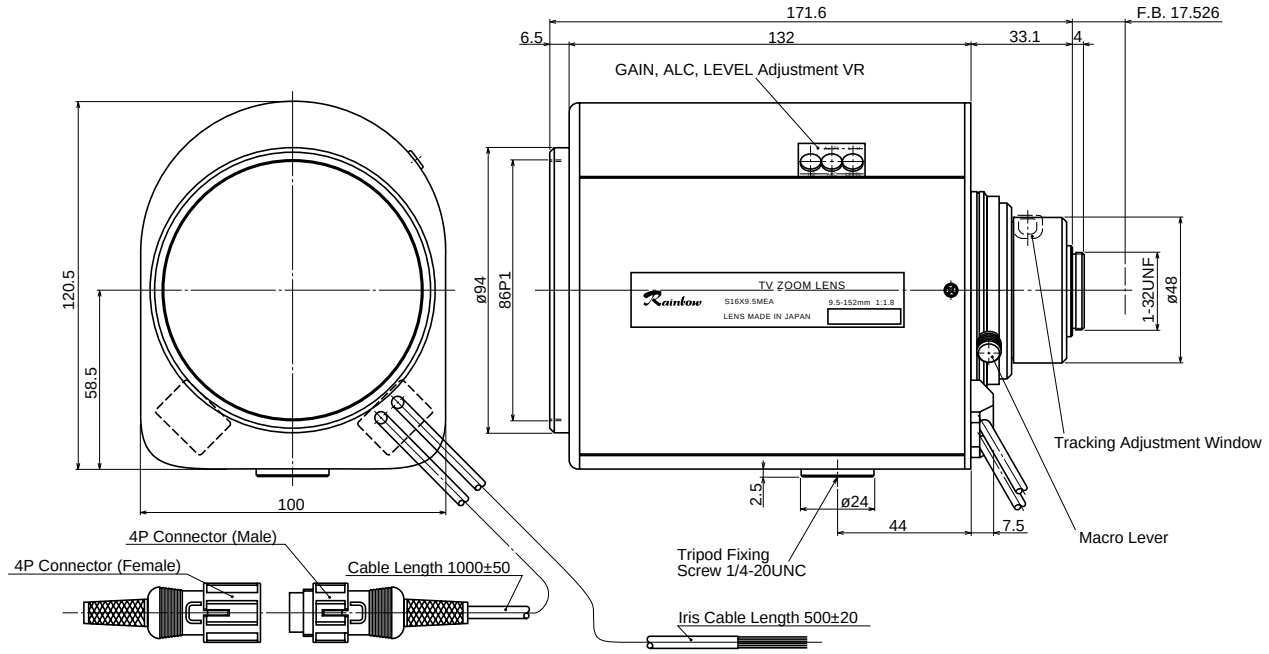
S16X9.5MEA

9.5~152mm 1:1.8– C-Mount

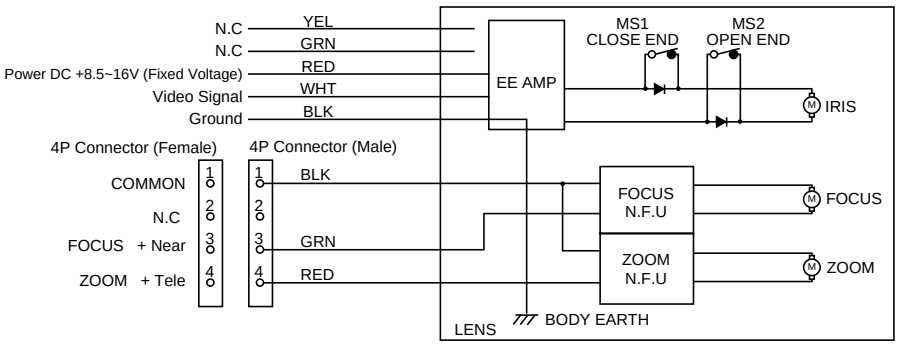
Compatible with 2/3”, 1/2” & 1/3” Cameras

Focal Length:	9.5~152mm
Max. Relative Aperture:	1:1.8 at 9.5~110mm 1:2.3 at 152mm
Iris:	F1.8~Approx. F360 With ND Spot Filter
Zoom Ratio:	16X
Angular Field of View:	2/3”: 49.7° × 38.3° at 9.5mm 3.3 × 2.5° at 152mm 1/2”: 37.2° × 28.4° at 9.5mm 2.4° × 1.8° at 152mm 1/3": 28.4° × 21.5° at 9.5mm 1.8° × 1.4° at 152mm
Min. Object Distance (M.O.D.):	1.0m (From Front Vertex)
Optical Back Focal Distance:	20.15mm (In Air)
Auto-Iris Input Signal:	Composite Video Signal or Video Signal

Input Impedance:		High Impedance
Sensitivity Adjustment:		Image Signal Level 0.5~1.0Vp-p
Auto-Iris Accuracy:		With Input Video Signal 0.7Vp-p Within ±15% of Mean value
Operation:	Zoom:	Motorized (DC±4V~12V, Max 80mA) Speed Approx. 6 sec. (at 6.4V)
	Focus:	Motorized (DC±4V~12V, Max 80mA) Speed Approx. 10 sec. (at 6.4V)
	Iris:	Auto (DC+8.5~16V: Fixed Voltage, Max. 60mA) Speed Within 3 sec.
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		86mm P1
Mount:		C-mount (Adjustable Lens Postion)
Size, Approx. Weight:		100 × 120.5 × 171.6mm (w/h/d), 1.5kg (Approx. 4.0 × 4.7 × 6.8in., 3.3lb.)

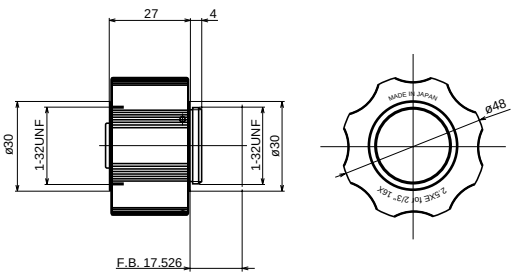


– Circuit Diagram –



– Optional Extender –

Model: 2.5XE – Rear conversion lens to multiply the focal length by 2.5X to achieve 23.8~380mm.
Note: will multiply the F-stop by 2.5X.



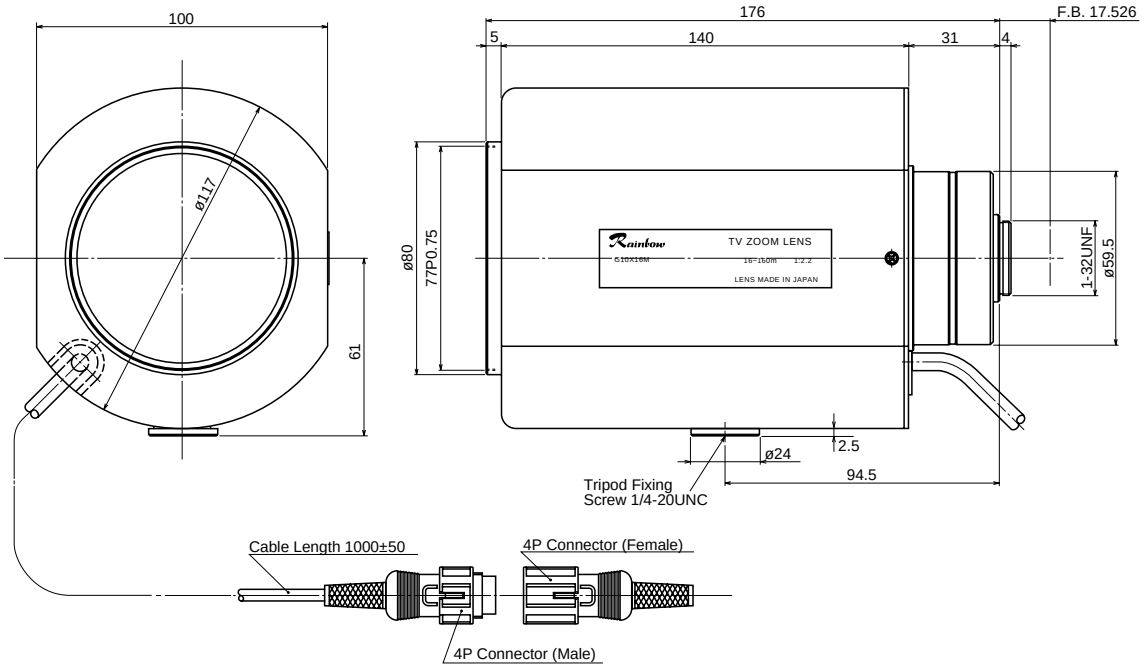
G10X16M

16~160mm 1:2.2 – C-Mount

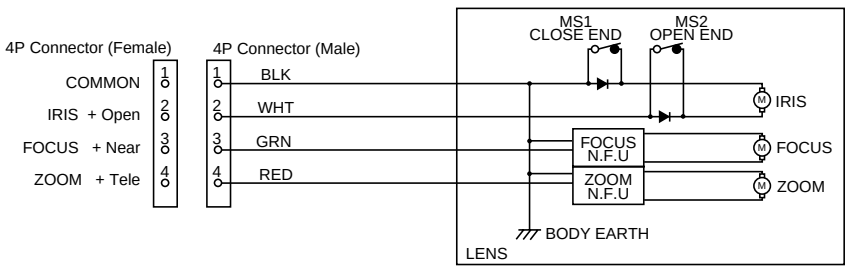
Compatible with 1”, 2/3”, 1/2” & 1/3” Cameras

Focal Length:	116~160mm
Max. Relative Aperture:	1:2.2
Iris:	F2.2-Close
Zoom Ratio:	10X
Angular Field of View:	1”: 43.6° × 33.4° at 16mm 4.6° × 3.4° at 160mm 2/3”: 30.8° × 23.3° at 16mm 3.2° × 2.4° at 160mm 1/2": 22.6° × 17.1° at 16mm 2.3° × 1.7° at 160mm 1/3”: 17.1° × 12.8° at 16mm 1.7 × 1.3° at 160mm
Min. Object Distance (M.O.D.):	1.1m (From Front Vertex)
Optical Back Focal Distance:	18.6mm (In Air)

Operation:	Zoom:	Motorized (DC±4V~12V, Max 80mA) Speed Approx. 5.5 sec. (at 6.4V)
	Focus:	Motorized (DC±4V~12V, Max 80mA) Speed Approx. 8 sec. (at 6.4V)
	Iris:	Motorized (DC±4V~12V, Max 80mA) Speed Approx. 3.5 sec. (at 6.4V)
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		77mm P0.75
Mount:		C-mount (Adjustable Lens Postion)
Size, Approx. Weight:		100 × 117 × 176mm (w/h/d), 1.4kg (Approx. 4.0 × 4.6 × 6.9in., 3.1lb.)



– Circuit Diagram –



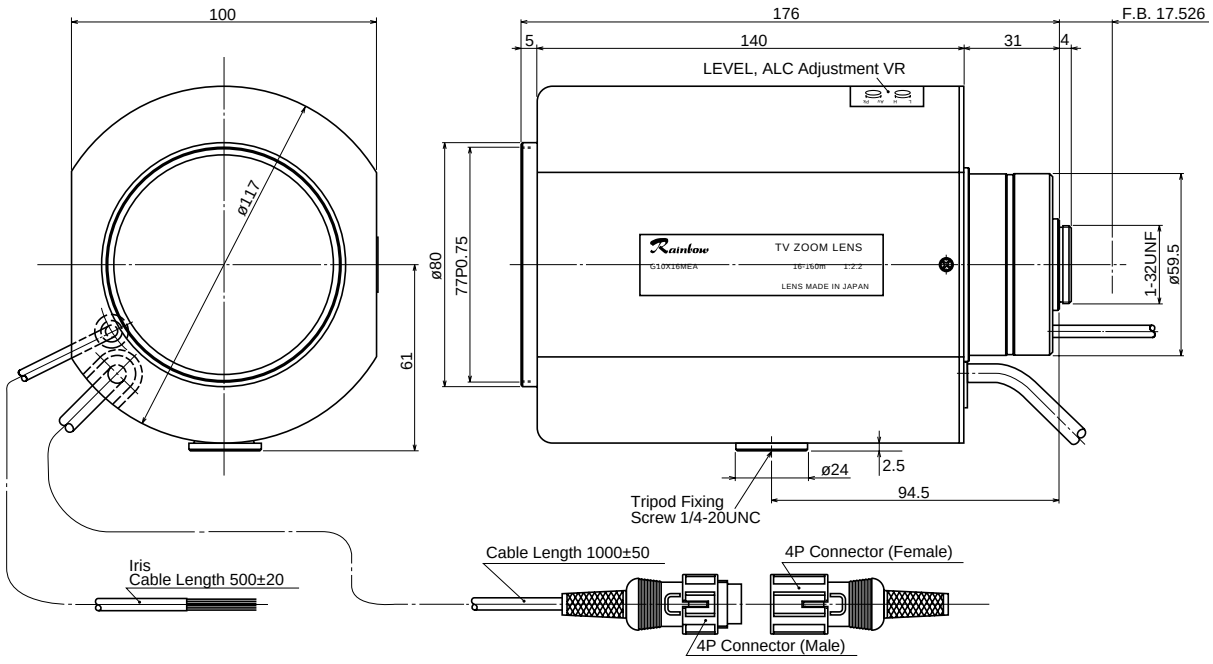
G10X16MEA

16~160mm 1:2.2 – C-Mount

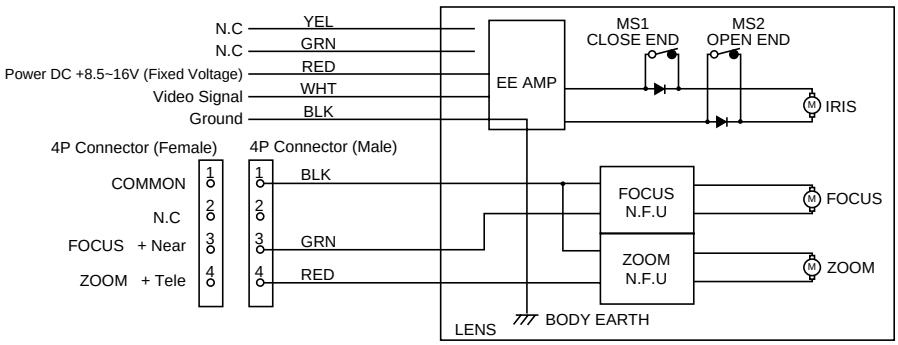
Compatible with 1”, 2/3”, 1/2” & 1/3” Cameras

Focal Length:	16~160mm
Max. Relative Aperture:	1:2.2
Iris:	F2.2~Aprrox. F1200 With ND Spot Filter
Zoom Ratio:	10X
Angular Field of View:	1”: 43.6° × 33.4° at 16mm 4.6° × 3.4° at 160mm 2/3”: 30.8° × 23.3° at 16mm 3.2° × 2.4° at 160mm 1/2": 22.6° × 17.1° at 16mm 2.3° × 1.7° at 160mm 1/3”: 17.1° × 12.8° at 16mm 1.7 × 1.3° at 160mm
Min. Object Distance (M.O.D.):	1.1m (From Front Vertex)
Optical Back Focal Distance:	18.60mm (In Air)
Auto-Iris Input Signal:	Composite Video Signal or Video Signal

Input Impedance:		High Impedance
Sensitivity Adjustment:		Image Signal Level 0.5~1.0Vp-p
Auto-Iris Accuracy:		With Input Video Signal 0.7Vp-p Within ±15% of Mean value
Operation:	Zoom:	Motorized (DC±4V~12V, Max 80mA) Speed Approx. 6 sec. (at 6.4V)
	Focus:	Motorized (DC±4V~12V, Max 80mA) Speed Approx. 8 sec. (at 6.4V)
	Iris:	Auto (DC+8.5~16V: Fixed Voltage, Max. 60mA) Speed Within 3.5 sec.
Operation Temperature:		-10 ~ +50°C (+14 ~ 122° F)
Filter Size:		77mm P0.75
Mount:		C-mount (Adjustable Lens Postion)
Size, Approx. Weight:		100 × 117 × 176mm (w/h/d), 1.4kg (Approx. 4.0 × 4.6 × 6.9in., 3.1lb.)



– Circuit Diagram –



Combo Series

Camera and Lens Combination

Fast, Easy Installation; Just Connect Power and Video

Lens Features

- Full Range of Focal Lengths
  2.8mm to 75mm Fixed
  2.8-6.4mm, 3-8mm, 5-40mm, 6-12mm
  6.5-39mm, 8.5-51mm Vari-Focal
  6.5-65mm & 8.5-85mm Zoom
- **All Glass Optics**
- 4-Year Warranty

Combo Features

- Choice of Camera
  580 Lines B&W
  330 or 460 Lines Color DSP
- Backfocused, Ready to Install
- No "Bad Out of Box" Failures; Bench Tested

Camera Features

- 12VDC/24VAC Input With Phase Adjustable AC Line Lock
- Sony Super HAD CCD™
- BLC (Backlight Compensation)
- Built-in Isolated Power Supply
- 3-Year Warranty

Camera with Manual Iris Lens		BL58D B&W 580 Lines	CLD33D Color DSP 330 Lines	CLD46D Color DSP 460 Lines
Vari-Focal	**2.8~6.4mm**	**BL58VM26**	**CL33VM26**	**CL46VM26**
	3~8mm	**BL58VM3**	**CL33VM3**	**CL46VM3**
	5~40mm	BL58VM5	CL33VM5	CL46VM5
	6~12mm	BL58VM6	CL33VM6	CL46VM6
	6.5~39mm	BL58VM65	CL33VM65	CL46VM65
	8.5~51mm	BL58VM85	CL33VM85	CL46VM85
Fixed	2.8mm	BL58M28	CL33M28	CL46M28
	4mm	BL58M4	CL33M4	CL46M4
	8mm	BL58M8	CL33M8	CL46M8

Camera with DC-Type Auto-Iris Lens		BL58D B&W 580 Lines	CLD33D Color DSP 330 Lines	CLD46D Color DSP 460 Lines
Vari-Focal	**2.8~6.4mm**	**BL58VD26**	**CL33VD26**	**CL46VD26**
	3~8mm	**BL58VD3**	**CL33VD3**	**CL46VD3**
	5~50mm	BL58VD5	CL33VD5	CL46VD5
	6~12mm	BL58VD6	CL33VD6	CL46VD6
	6.5~39mm	BL58VD65	CL33VD65	CL46VD65
	8.5~51mm	BL58VD85	CL33VD85	CL46VD85
Fixed	2.8mm	BL58D28	CL33D28	CL46D28
	4mm	BL58D4	CL33D4	CL46D4
	8mm	BL58D8	CL33D8	CL46D8
Zoom	6.5~65mm	BL58ZD65	CL33ZD65	CL46ZD65
	8.5~85mm	BL58ZD85	CL33ZD85	CL46ZD85

Other focal lengths available include 12, 16, 25, 50, and 75mm manual and DC auto-iris.

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Rainbow® CCTV

BL58D

- **1/3” Black & White (Sony chipset)**
- **580 TV lines resolution**
- **High sensitivity of 0.06 lux**
- **12VDC or 24VAC input**
- **Electronic iris**
- **Multi-Zone backlight compensation**
- **Built-in isolated power supply**
- **3-year warranty**
- **Backfocus Mode™ for easy, one touch backfocusing. No more filters or numerous adjustments for lens/camera setup. Push the button, focus the lens and you’re done!**

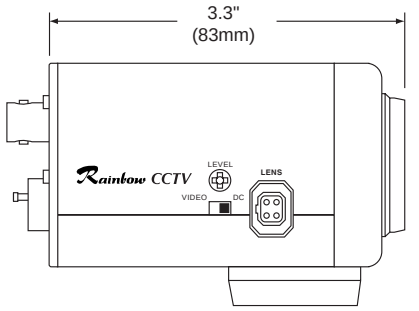
Model	BL58D
Image Sensor	1/3" Interline Transfer Sony Super HAD CCD
TV System	EIA
Picture Elements (pixels)	768 (H) × 494 (V)
Horizontal Resolution	580 TV Lines
Min. Illumination	0.06 lux at F1.2
Signal to Noise Ration	More than 48dB
Synchronizing System	Phase Adjustable Line Lock - Range 0~270° / Internal Selectable
Video Output	1Vp-p 75ohm
Auto-Iris Drive	DC or Video Type (4-pin square connector)
Electronic Iris	1/60-1/100,000 - On/Off Selectable
BLC (Backlight Compensation)	On/Off/Zone Selectable (Center Zone Detection)
AGC (Automatic Gain Control)	On/Off Selectable
Power Requirement	12VDC/24VAC ±20% (Isolated Power Supply Built Into Camera)
Operating Current	250mA Max
Operating Condition	+14 ~ 122°F (-10°C ~ +50°C) Within 85% RH
Lens Mount	CS/C (C-mount adapter included) with Cam-type Backfocus Adjustment
Measurement – w/h/d	1.9 × 1.9 × 3.3 inches (47 × 47 × 83mm)
Weight / Color	7.1 oz. (200g) / Ivory
Included Accessories	CS-C mount adapter, 4-pin iris connector

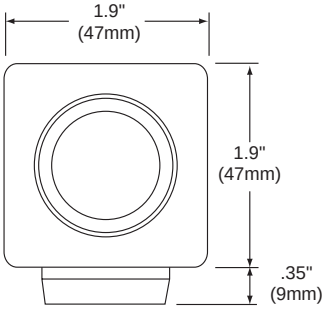
Recommended Lenses (Additional lens types are available)

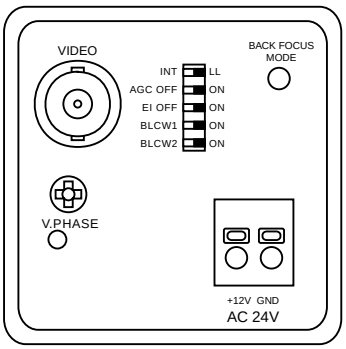
Type	Focal Length	Angle of View	Manual Iris	DC Auto-Iris
Vari-Focal	2.7~12mm	83~23°	—	L212VDC4P
	3~8mm	93~36°	L308VCS	L308VDC4P
	5~50mm	54~6°	—	L550VDC4P
	6.5~39mm	41~7°	L639VCS	L639VDC4P
	8.5~51mm	32~5°	L851VCS	L851VDC4P

Auto-Iris Connector Wiring

Pin	DC LENS	VIDEO LENS
1	Brake –	+12V
2	Brake +	N.C.
3	Drive +	VIDEO
4	Drive –	GROUND







Specifications subject to change without notice

Rainbow® CCTV

CLD33D

- **1/3” Color DSP (Sony chipset)**
- **330 TV lines resolution**
- **High sensitivity of 0.2 lux**
- **12VDC or 24VAC input**
- **Electronic iris**
- **Backlight compensation**
- **Built-in isolated power supply**
- **3-year warranty**
- **Backfocus Mode™ for easy, one touch backfocusing. No more filters or numerous adjustments for lens/camera setup. Push the button, focus the lens and you’re done!**

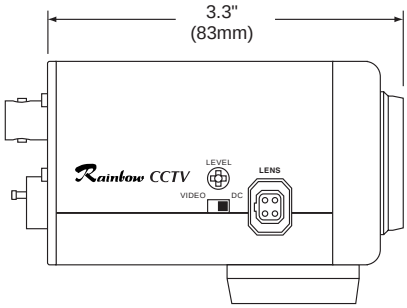
Model	CLD33D
Image Sensor	1/3" Interline Transfer Sony Super HAD CCD
TV System	NTSC
Picture Elements (pixels)	542 (H) × 492 (V)
Horizontal Resolution	330 TV Lines
Min. Illumination	0.5 lux (Normal AGC Mode) / 0.2 lux (Hi-Gain AGC Mode) at F1.2
Signal to Noise Ration	More than 48dB
Synchronizing System	Phase Adjustable Line Lock - Range 0~350° / Internal Selectable
Video Output	1Vp-p 75ohm
Auto-Iris Drive	DC or Video Type (4-pin square connector)
White Balance	Range of 2700~7000° K Auto or Hold Mode (Push Lock)
Electronic Iris	1/60-1/100,000 - On/Off Selectable
BLC (Backlight Compensation)	On/Off Selectable (Center Zone Detection)
AGC (Automatic Gain Control)	Normal Mode / Hi-Gain Mode Selectable
Power Requirement	12VDC/24VAC ±20% (Isolated Power Supply Built Into Camera)
Operating Current	250mA Max
Operating Condition	+14 ~ 122°F (-10°C ~ +50°C) Within 85% RH
Lens Mount	CS/C (C-mount adapter included) with Cam-type Backfocus Adjustment
Measurement – w/h/d	1.9 × 1.9 × 3.3 inches (47 × 47 × 83mm)
Weight / Color	7.1 oz. (200g) / Ivory
Included Accessories	CS-C mount adapter, 4-pin iris connector

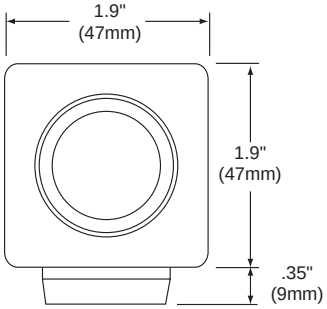
Recommended Lenses (Additional lens types are available)

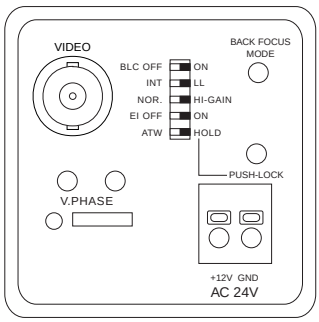
Type	Focal Length	Angle of View	Manual Iris	DC Auto-Iris
Vari-Focal	2.7~12mm	83~23°	—	L212VDC4P
	3~8mm	93~36°	L308VCS	L308VDC4P
	5~50mm	54~6°	—	L550VDC4P
	6.5~39mm	41~7°	L639VCS	L639VDC4P
	8.5~51mm	32~5°	L851VCS	L851VDC4P

Auto-Iris Connector Wiring

Pin	DC LENS	VIDEO LENS
1	Brake –	+12V
2	Brake +	N.C.
3	Drive +	VIDEO
4	Drive –	GROUND







Specifications subject to change without notice

Phone (800) 654-5367 (949) 260-1599 • Fax (800) 828-2031 (949) 260-1594

CLD46D

- **1/3” Color DSP (Sony chipset)**
- **460 TV lines resolution**
- **High sensitivity of 0.3 lux**
- **12VDC or 24VAC input**
- **Electronic iris**
- **Backlight compensation**
- **Built-in isolated power supply**
- **3-year warranty**
- **Backfocus Mode™ for easy, one touch backfocusing. No more filters or numerous adjustments for lens/camera setup. Push the button, focus the lens and you’re done!**

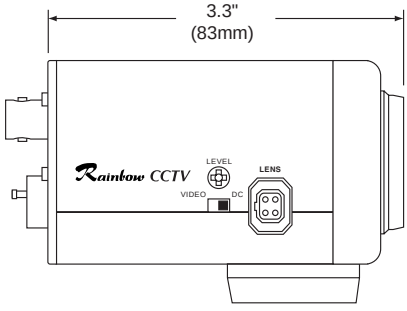
Model	CLD46D
Image Sensor	1/3" Interline Transfer Sony Super HAD CCD
TV System	NTSC
Picture Elements (pixels)	811 (H) × 508(V)
Horizontal Resolution	460 TV Lines
Min. Illumination	1.0 lux (Normal AGC Mode) / 0.3 lux (Hi-Gain AGC Mode) at F1.2
Signal to Noise Ration	More than 48dB
Synchronizing System	Phase Adjustable Line Lock - Range 0~350° / Internal Selectable
Video Output	1Vp-p 75ohm
Auto-Iris Drive	DC or Video Type (4-pin square connector)
White Balance	Range of 2700~7000° K Auto or Hold Mode (Push Lock)
Electronic Iris	1/60-1/100,000 - On/Off Selectable
BLC (Backlight Compensation)	On/Off Selectable (Center Zone Detection)
AGC (Automatic Gain Control)	Normal Mode / Hi-Gain Mode Selectable
Power Requirement	12VDC/24VAC ±20% (Isolated Power Supply Built Into Camera)
Operating Current	250mA Max
Operating Condition	+14 ~ 122°F (-10°C ~ +50°C) Within 85% RH
Lens Mount	CS/C (C-mount adapter included) with Cam-type Backfocus Adjustment
Measurement – w/h/d	1.9 × 1.9 × 3.3 inches (47 × 47 × 83mm)
Weight / Color	7.1 oz. (200g) / Ivory
Included Accessories	CS-C mount adapter, 4-pin iris connector

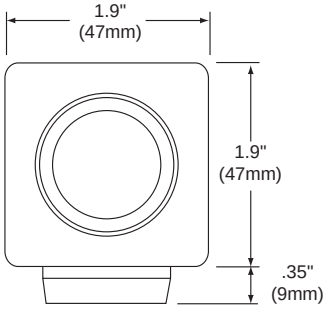
Recommended Lenses (Additional lens types are available)

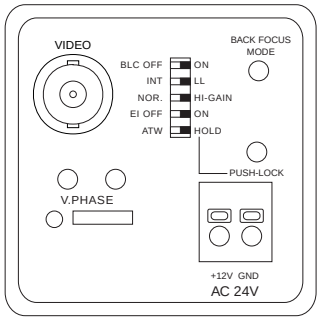
Type	Focal Length	Angle of View	Manual Iris	DC Auto-Iris
Vari-Focal	2.7~12mm	83~23°	—	L212VDC4P
	3~8mm	93~36°	L308VCS	L308VDC4P
	5~50mm	54~6°	—	L550VDC4P
	6.5~39mm	41~7°	L639VCS	L639VDC4P
	8.5~51mm	32~5°	L851VCS	L851VDC4P

Auto-Iris Connector Wiring

Pin	DC LENS	VIDEO LENS
1	Brake –	+12V
2	Brake +	N.C.
3	Drive +	VIDEO
4	Drive –	GROUND







Specifications subject to change without notice

Rainbow® CCTV

DAY NIGHT IR

DNL SERIES

High Performance Day/Night/IR Camera

Color by day, B&W by night, Excellent performance with IR illuminators

Gone are the days of dark, grainy nighttime pictures of standard color cameras. Rainbow's new line of Day/Night/IR cameras feature the high-performance Sony ExView CCD™ for outstanding pictures 24-hours a day. This CCD provides the following features: Color in bright light, high sensitivity B&W in low light, enhanced-IR performance when using IR illumination. This is all achieved with no moving parts. The key is the spectrum notch filter on the CCD. Standard color cameras use an IR cut filter to maintain proper color. The spectrum notch filters allows a combination of visible and IR light spectrums to reach the CCD to provide excellent low-light pictures with or without IR lighting.

Features

- High Performance 1/3" Sony ExView CCD™
- DSP - Digital Signal Processing
- Color in normal lighting conditions
- High Sensitivity B&W in low light
- Sensitive to IR up to 1000nm; ideal for use with our IR illuminators, 35% better IR performance than standard B&W cameras
- Compact body design (3.3" length)
- Electronic iris
- Backlight compensation
- 12VDC or 24VAC operation
- Built-in isolated power supply
- 3-year warranty
- Exclusive Backfocus Mode™ for easy, one touch backfocusing. No more filters or numerous adjustments for lens/camera setup. Push the button, focus the lens and you're done!

Note: Due to the high performance nature of the CCD, this camera will perform best under the following conditions: Outdoor use. Indoor under flouorescent lighting. Use in incandescent lighting can exhibit color changes due to IR being present in the light source.

INTERNATIONAL SPACE OPTICS, S.A.
Address: 2495 Da Vinci, Irvine, CA 92614 USA
Phone: (800) 654-5367 (949) 260-1599 • **Fax:** (800) 828-2031 (949) 260-1594
E-mail: rainbow@isorainbow.com • **Internet:** www.rainbowcctv.com

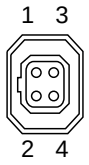
Rainbow® CCTV

SPECIFICATIONS

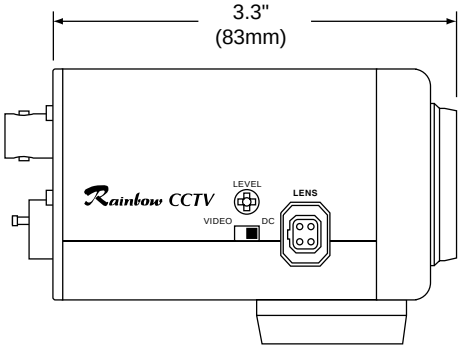
Camera Model	DNL33D	DNL46D
Image Sensor	Interline 1/3" Sony ExView HAD CCD™	
TV System	NTSC Standard	
Effective Pixels	542 (H) × 492 (V)	768 (H) × 494 (V)
Horizontal Resolution	330 TV Lines	460 TV Lines
Signal to Noise Ratio	More than 48dB	
Minimum Illumination (@F1.2)	DNL33D - 0.04 lux (Normal Mode) / 0.03 lux (Hi-Gain Mode) / 0 lux with IR lighting DNL46D - 0.05 lux (Normal Mode) / 0.03 lux (Hi-Gain Mode) / 0 lux with IR lighting	
Video Output	1Vp-p, 75 ohm	
Sync System	Phase Adjustable Line Lock – Range 0~350˚/Internal Selectable	
Auto-Iris Drive	DC or Video Type (4-pin square connector)	
Electronic Iris	1/60~1/100,000 sec. – On/Off Selectable	
BLC (Backlight Compensation)	Backlight Compensation – On/Off Selectable (Center Zone Detection)	
AGC (Automatic Gain Control)	Normal Gain / Hi-Gain Selectable	
Auto White Balance (ATW)	Range of 2,700 ˚K ~ 7000 ˚K Auto or Hold Mode (Push Lock)	
Color to B&W Change Point	Approx. 1 lux	
Power Requirement	12VDC or 24VAC ±10% 60Hz, 250mA Max. Isolated Power Supply Built Into Camera	
Operating Condition	14˚ F to 122˚ F (-10˚ C to 50˚ C), Within 85% RH	
Lens Mount	CS/C (C-mount adapter included), with Cam-type Backfocus Adjustment	
Camera Mount	1/4" – 20 (Top or Bottom Selectable)	
Dimensions (w/h/d)	1.9 x 1.9 x 3.3 inches (47mm x 47mm x 83mm)	
Weight, Color	7.1 oz. (200g), Off White	

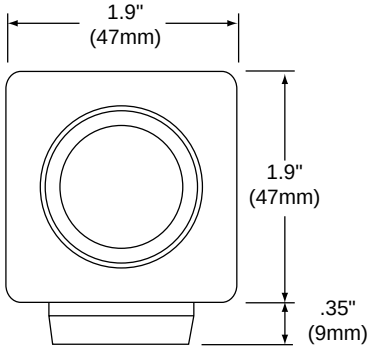
Recommended Lenses *(Additional lens types are available)*

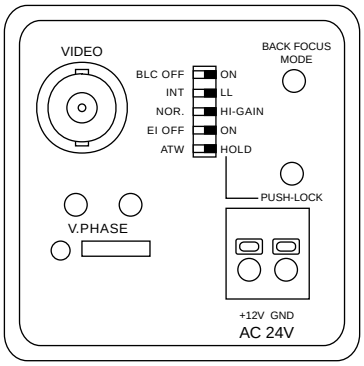
Type	Focal Length	Angle of View	Manual Iris	DC Auto-Iris
Vari-Focal	2.7~12mm	83~23˚	—	L212VDC4P
	3~8mm	93~36˚	L308VCS	L308VDC4P
	5~50mm	54~6˚	—	L550VDC4P
	6.5~39mm	41~7˚	L639VCS	L639VDC4P
	8.5~51mm	32~5˚	L851VCS	L851VDC4P



Pin	DC LENS	VIDEO LENS
1	Brake –	+12V
2	Brake +	N.C.
3	Drive +	VIDEO
4	Drive –	GROUND







Rear Panel Layout

Note: Due to the high performance nature of the CCD, this camera will perform best under the following conditions: Outdoor use. Indoor under flouorescent lighting. Use in incandescent lighting can exhibit color changes due to IR being present in the light source.

Rainbow CCTV

INTERNATIONAL SPACE OPTICS, S.A.
Address: 2495 Da Vinci, Irvine, CA 92614 USA
Phone: (800) 654-5367 (949) 260-1599 • **Fax:** (800) 828-2031 (949) 260-1594
E-mail: rainbow@isorainbow.com • **Internet:** www.rainbowcctv.com

Rainbow® CCTV

ECL3824

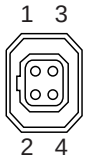
1/3” Low Cost Color Camera

- 1/3” Color DSP (Digital Signal Processing) Sony CCD
- 380 TV lines resolution
- High sensitivity of 0.1 lux
- 24VAC input with phase adjustable line lock
- Electronic iris
- Backlight compensation
- Supports C and CS-mount lenses
- Accepts DC and Video type lenses
- 3-year warranty

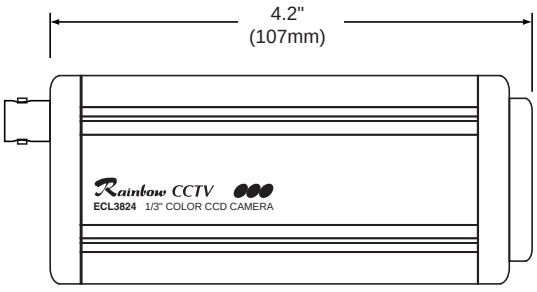
Specifications

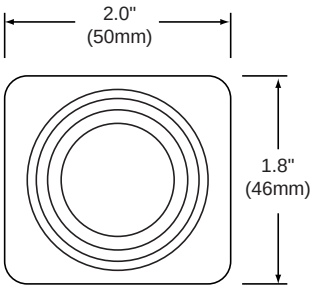
Image Sensor	1/3" Interline Transfer CCD (Sony)	**AES (Automatic Electronic Shutter)**	1/60~1/100,000 sec.
TV System	NTSC Standard	**Flickerless Mode**	1/100 sec. On / Off Selectable
Effective Elements	510 (H) x 492 (V)	**AGC (Automatic Gain Control)**	Normal Gain / Hi-Gain Selectable
Horizontal Resolution	380 TV Lines	**ATW (Auto White Balance)**	Range of 2500°K~9500°K Auto / Manual Selectable
Signal to Noise Ratio	More than 48dB (AGC Off)	**BLC**	Backlight Compensation On/Off selectable
Minimum Illumination	0.1 lux at F1.2	**Power Requirement**	24V AC 60Hz, 3.5W
Video Output	1Vp-p, 75 ohm	**Operating Condition**	14° F to 122° F (-10° C to 50° C), Within 85% RH
Sync System	Phase Adjustable Line Lock	**Lens Mount**	C/CS (C-mount adapter included)
Auto-Iris Drive	DC or Video Type	**Dimensions**	2.2 x 2.2 x 4.7 inches (w/h/d) (50mm x 46mm x 107mm)

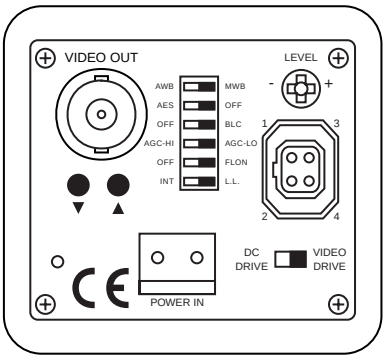
Auto-Iris Connector Wiring



Pin	DC LENS	VIDEO LENS
1	Brake –	+12V
2	Brake +	N.C.
3	Drive +	VIDEO
4	Drive –	GROUND





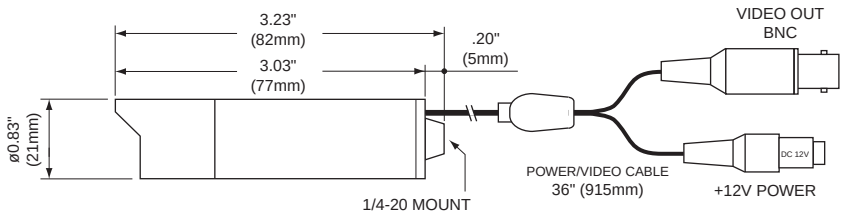


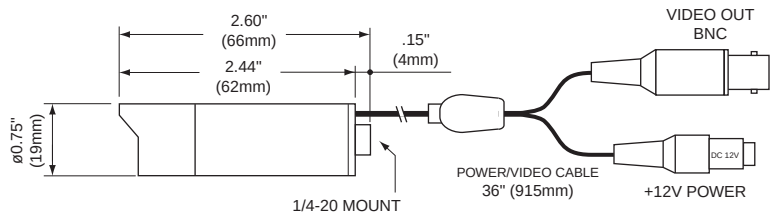
Phone (800) 654-5367 (949) 260-1599 • Fax (800) 828-2031 (949) 260-1594

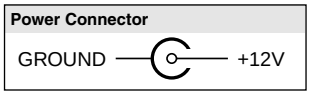
Bullet Cameras

- 1/3” Black & White 420 lines 0.1 lux
- 1/3” Color DSP 380 lines 0.5 lux
- Small size allows discreet installation
- Weatherproof housing with integrated hood
- 33° or 70° field of view
- Industry standard 1/4-20 mount
- Adjustable swivel mount included
- 12V plug-in power supply included
- 1 year warranty

Model	BB33W	BB70W	BC33W	BC70W
Other Models	BBI33W (Ivory)	BBI70W (Ivory)	BCI33W (Ivory)	BCI70W (Ivory)
Field of View (lens)	33° (8mm)	70° (3.6mm)	33° (8mm)	70° (3.6mm)
Image Sensor	B/W 1/3" Interline Transfer CCD		Color 1/3" Interline Transfer CCD	
TV System	EIA		NTSC	
Picture Elements (pixels)	500 (H) × 580 (V)		500 (H) × 580 (V)	
Horizontal Resolution	420 TV Lines		380 TV Lines	
Min. Illumination	0.1 lux at F2.0		0.5 lux at F2.0	
Signal to Noise Ration	More than 50dB		More than 50dB	
Synchronizing System	Internal		Internal	
Video Output	1Vp-p 75ohm		1Vp-p 75ohm	
Gamma Correction	r = 0.45		r = 0.45	
White Balance	—		Auto 2100°K - 8000°K	
Electronic Iris (auto)	1/60-1/100,000		1/60-1/100,000	
Power Requirement	12VDC ±20%		12VDC ±20%	
Operating Current	100mA w/ regulated power in		110mA w/ regulated power in	
Operating Condition	+14 ~ 122°F (-10°C ~ +50°C)		+14 ~ 122°F (-10°C ~ +50°C)	
Measurement – ø (dia.) × L	ø0.75 × 2.6 inches (ø19mm × 66mm)		ø0.83 × 3.2 inches (ø21mm × 82mm)	
Weight (Camera Only)	1.6 oz. (45g)		1.8 oz. (50g)	
Included Accessories	• UL Approved 12V 300mA plug-in power supply • Adjustable swivel mount			
Optional Accessory	EC60PV - 60' extension cable with power/video connectors			







Mount included

Available in Ivory

Specifications subject to change without notice

Rainbow® CCTV

Vari-Focal Bullet

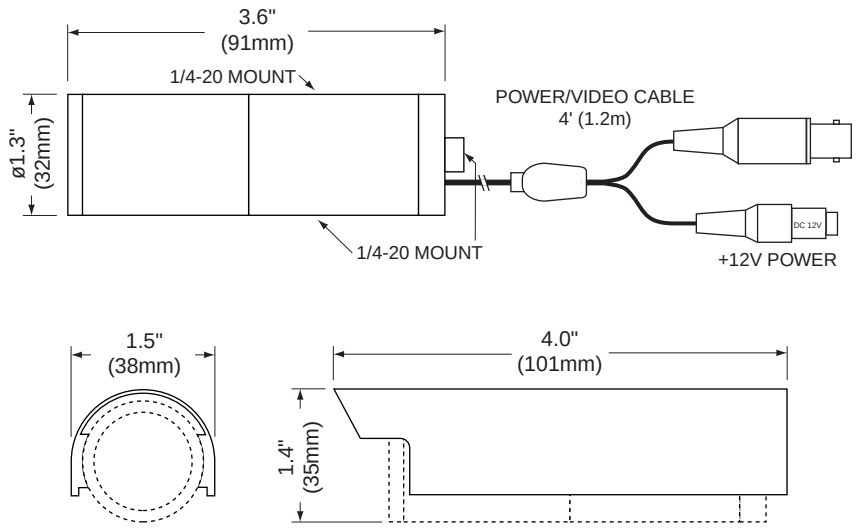
weatherproof color camera

- 1/3” Color DSP CCD
- 65~30° Field of view (4~9mm lens)
- Weatherproof housing with removable hood
- Includes swivel mount

Unit without hood

4~9mm Vari-Focal

Model	BCVF4W
Image Sensor	1/3" Interline Transfer CCD
Field of View (lens)	65~30° Horizontal (4~9mm F1.6~2.4)
TV System	NTSC
Picture Elements (pixels)	500 (H) × 494 (V)
Horizontal Resolution	380 TV Lines
Min. Illumination	0.5 lux
Signal to Noise Ration	More than 50dB
Synchronizing System	Internal
Video Output	1Vp-p 75ohm
Gamma Correction	r = 0.45
White Balance	Auto 2100°K - 8200°K
Gain Control	Auto 4dB - 32dB
Electronic Iris (auto)	1/60-1/100,000
Power Requirement	12VDC (tolerance: 8V-15V)
Operating Current	100mA w/ regulated power in
Operating Condition	+14 ~ 122°F (-10°C ~ +50°C)
Measurements	ø1.3 × 3.6 inches (ø32mm × 91mm) w/o hood 1.5 × 1.4 × 4.0 inches w/h/d (38mm × 35mm× 101mm w/h/d) with hood
Weight (Camera Only)	9.2 oz. (260g)
Included Accessories	• UL Approved 12V 300mA plug-in power supply • Adjustable swivel mount



Mount included

Specifications subject to change without notice

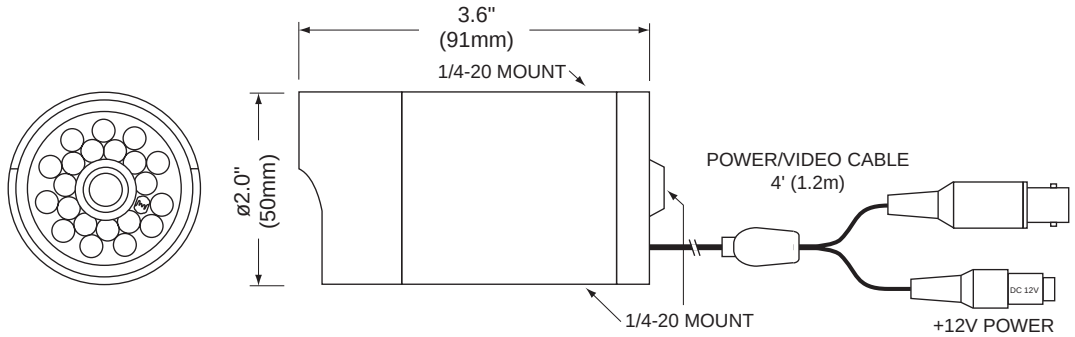
Phone (800) 654-5367 (949) 260-1599 • Fax (800) 828-2031 (949) 260-1594

Bullet with IR

Weatherproof camera with IR LED's

- 1/3" Color/B&W with Infared LED's
- 70° Field of view (3.6mm lens)
- Weatherproof housing
- Reliable power control
  - Reverse polarity protection
  - Reduces heat build-up to extend the life span of the camera and IR LED's
- Rust-free brass housing with scratch resistant finish
- Photocell for auto on/off operation of LED's
- Includes plug-in power supply

Model	BC70WIR	BC70WIRC
LED's	21 × 850nm (semi-visible)	16 × 940nm (covert)
Typical Range	40 feet	15 feet
LED Beam Width	30°	
Field of View (lens)	70° (3.6mm)	
Image Sensor	1/3" Interline Transfer CCD	
TV System	NTSC	
Picture Elements (pixels)	500 (H) × 582 (V)	
Horizontal Resolution	380 TV Lines	
Min. Illumination	0.001 lux at F2.0 / 0 with IR on	
Signal to Noise Ration	More than 50dB	
Synchronizing System	Internal	
Video Output	1Vp-p 75ohm	
Gamma Correction	r = 0.45	
White Balance	Auto 2100°K - 8200°K	
Gain Control	Auto 4dB - 32dB	
Electronic Iris (auto)	1/60-1/100,000	
Power Requirement	12VDC	
Operating Current	250mA w/ regulated power in	
Operating Condition	+14 ~ 122°F (-10°C ~ +50°C)	
Measurement – ø (dia.) × L	ø2.0 × 3.6 inches (ø50mm × 91mm)	
Weight (Camera Only)	13 oz. (380g)	
Included Accessories	• UL Approved 12V 500mA plug-in power supply • Adjustable swivel mount	



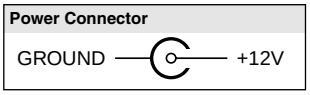
Mount included

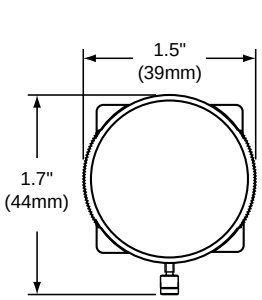
Specifications subject to change without notice

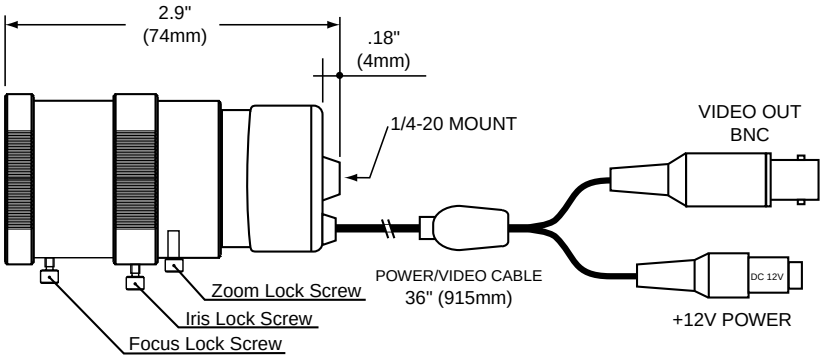
VARI-CUBES

- 1/3” Black & White 420 lines 0.1 lux
- 1/3” Color DSP 380 lines 0.2 lux
- Compact size (3” long)
- For indoor use
- 3~8mm vari-focal
- Industry standard 1/4-20 mount
- Adjustable swivel mount included
- 1 year warranty

Model	CBV3	CCV3
Image Sensor	B/W 1/3" Interline Transfer CCD	Color 1/3" Interline Transfer CCD
Field of View	93~36° Horizontal	93~36° Horizontal
Lens	3~8mm F1.4	3~8mm F1.4
Horizontal Resolution	420 TV Lines	380 TV Lines
TV System	EIA	NTSC
Picture Elements (pixels)	510 (H) × 492 (V)	537 (H) × 505(V)
Min. Illumination	0.1 lux	0.2 lux
Signal to Noise Ration	More than 50dB	More than 50dB
Synchronizing System	Internal	Internal
Electronic Iris	1/60~1/100,000 sec.	1/60~1/100,000 sec.
Video Output	1Vp-p 75ohm	1Vp-p 75ohm
White Balance	—	Auto 2100°K ~ 8000°K
Power Requirement	12VDC ±20%	12VDC ±20%
Operating Current	100mA w/ regulated power in	100mA w/ regulated power in
Operating Condition	+14 ~ 122°F (-10°C ~ +50°C)	+14 ~ 122°F (-10°C ~ +50°C)
Measurements (w/h/d)	1.5 × 1.7 × 2.9 inches (39 × 44 × 74mm)	1.5 × 1.7 × 2.9 inches (39 × 44 × 74mm)
Weight (Camera Only)	3.2 oz. (90g)	3.2 oz. (90g)
Color	Black	Black
Included Accessories	• PS1230R - UL Approved 12V 300mA plug-in power supply • Swivel mount	
Optional Accessories	EC60PV - 60' (18m) extension cable with BNC/Power connectors	



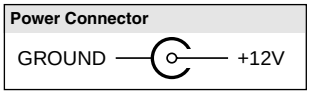


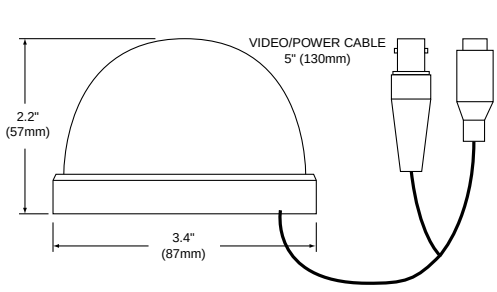


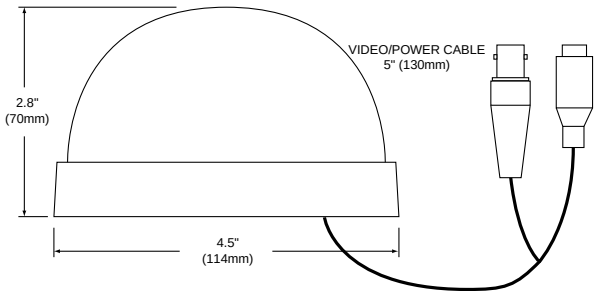
Specifications subject to change without notice

- 1/3” Black & White 380 lines
- 1/3” Color DSP 350 lines
- Compact size
- For indoor use
- Plug-in power supply included
- 1 year warranty

Model	MDB70PS	MDC70PS
Other Models	MDB70 (no 12V power supply)	MDC70 (no 12V power supply)
Image Sensor	B/W 1/3" Interline Transfer CCD	Color 1/3" Interline Transfer CCD
Field of View	70° Horizontal	70° Horizontal
Lens	3.6mm	3.6mm
Horizontal Resolution	380 TV Lines	350 TV Lines
TV System	EIA	NTSC
Picture Elements (pixels)	510 (H) × 492 (V)	537 (H) × 505(V)
Min. Illumination	0.5 lux	2.5 lux
Signal to Noise Ration	More than 46dB	More than 45dB
Synchronizing System	Internal	Internal
Electronic Iris	1/60~1/100,000 sec.	1/60~1/100,000 sec.
Video Output	1Vp-p 75ohm	1Vp-p 75ohm
White Balance	—	Auto 2500°K - 9500°K
Power Requirement	12VDC ±10%	12VDC ±10%
Operating Current	110mA w/ regulated power in	180mA w/ regulated power in
Operating Condition	+14 ~ 122°F (-10°C ~ +50°C)	+14 ~ 122°F (-10°C ~ +50°C)
Measurements	ø3.4 × 2.2 inches (ø87mm × 57mm)	ø4.2 × 2.8 inches (ø106.8mm × 70mm)
Weight (Camera Only)	3.2 oz. (250g)	7.5 oz. (250g)
Base Color	Ivory	Black
Optional Accessories	PS1230R - UL Approved 12V 300mA plug-in power supply (included with PS model) EC60PV - 60' (18m) extension cable with BNC/Power connectors	







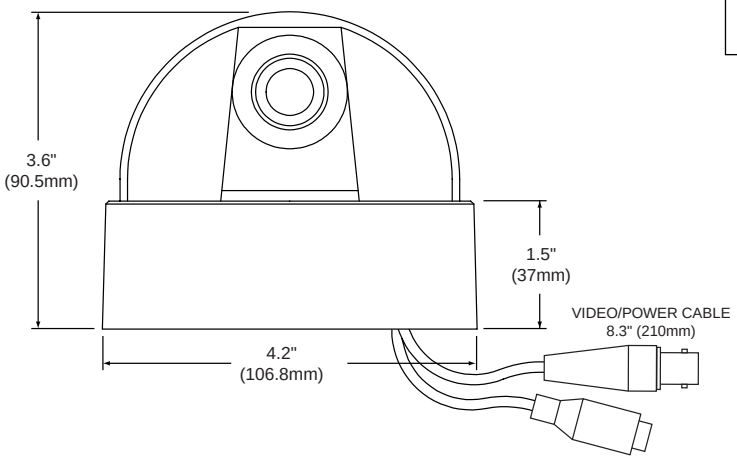
Specifications subject to change without notice

Rainbow® CCTV

VARI-FOCAL DOME

- **1/3” Color DSP**
- **3.5~8mm lens DC auto-iris lens**
- **Compact housing, easy installation**

Model	MDCVFPS
Other Models	MDCVF (no 12V power supply)
Image Sensor	Color 1/3" Interline Transfer CCD
Field of View	70~33° Horizontal
Lens	3.5~8mm F1.6~360 DC auto-iris
Horizontal Resolution	380 TV Lines
TV System	NTSC
Picture Elements (pixels)	510 (H) × 492 (V)
Min. Illumination	0.5 lux
Signal to Noise Ration	More than 48dB
Synchronizing System	Internal
Video Output	1Vp-p 75ohm
Gamma Correction	r = 0.45
White Balance	Auto 2500°K - 9500°K
Gain Control	Auto
Power Requirement	12VDC ±10%
Operating Current	120mA w/ regulated power in
Operating Condition	+14 ~ 122°F (-10°C ~ +50°C)
Measurements	ø4.2 × 3.6 inches (ø106.8mm × 90.5mm)
Weight (Camera Only)	8.8 oz. (250g)
Included Accessories	UL Approved 12V 300mA plug-in power supply (PS model only)



Power Connector

GROUND — +12V

Specifications subject to change without notice

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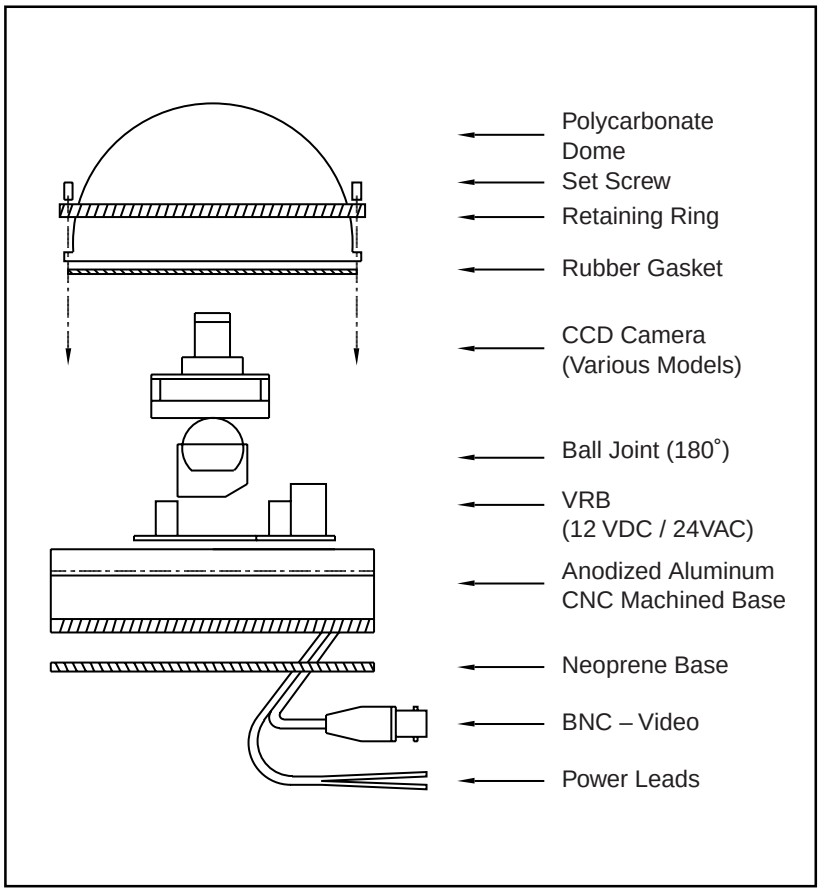
HD SERIES

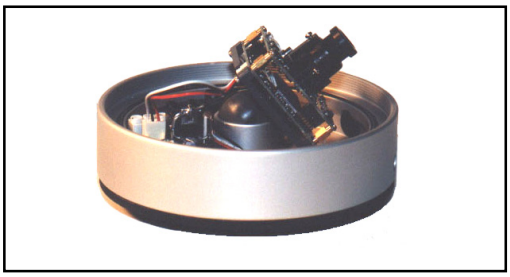
High Impact Dome Cameras

The HD Series High Impact Domes are hammer tough, weathertight, and input power protected. The exterior, is comprised of a thick anodized CNC machined aluminum base, an impact resistant polycarbonate dome, and an anodized retaining ring that locks the dome in place while providing continuous rigidity against impact forces. The interior incorporates a voltage regulator board that allows 12 VDC or 24 VAC operation while providing protection from over voltage, transient spikes and improper electrical installations. Standard configuration includes an aluminum color base, clear dome with black inner sleeve, and choice of black and white or color camera.

The HD Series is designed to mount over a single gang box to provide a flush appearance while leaving room inside the electrical box for installing modulators, power supplies, telemetry or video storage devices. The impact resistant dome can also be surface installed in minutes to all interior and exterior walls and ceilings.

A patent (pending) gimbal device allows full rotation of the CCD camera head for positioning in any direction.





Above and left: The HD Series is based on a tough vandal resistant design comprising of a polycarbonate dome and anodized CNC machined base. The HD Series is extremely versatile for indoor and outdoor installations in vandal prone locations. It can also fit over a single gang electrical box for integration with cable television modulators and other electronic options. The HD Series is available in B&W and DSP color.

Applications:

- Schools / Prisons
- Access Control
- Home Automation
- Transit Vehicles
- Public Buildings
- Industrial Buildings
- Indoor / Outdoor

INTERNATIONAL SPACE OPTICS, S.A.
Address: 2495 Da Vinci, Irvine, CA 92614 USA
Phone: (800) 654-5367 (949) 260-1599 • **Fax:** (800) 828-2031 (949) 260-1594
E-mail: rainbow@isorainbow.com • **Internet:** www.rainbowcctv.com

Non metric weights and measurements are approximate.
Specifications are subject to change without notice.

Specifications

Model	Color	B&W
TV System	NTSC	EIA
Image Sensor	1/3" CCD Color DSP Image Sensor	1/3" CCD Sony Image Sensor
Video Signal Output	1 V p-p, 75 ohm	1 V p-p, 75 ohm
CCD Effective Pixels	510 (H) x 492 (V) – NTSC	510 (H) x 492 (V)
Sync. System	Internal	Internal
Min. Illumination	1 lux @ F2.0	0.1 lux @ F2.0
Resolution	380 TV lines	420 TV Lines
S/N Ratio	>48 dB	>50 dB
Electronic Shutter	1/60 to 1/100,000	1/60 to 1/100,000
Gamma Correction	0.45	0.45
Backlight Compensation	Automatic	Manual Switch
Gain Control	AGC	AGC
Operational Range	-40^{0}C to +50^{0}C (-40^{0}F to 122^{0}F)	-40^{0}C to +50^{0}C (-40^{0}F to 122^{0}F)
Humidity Range	Up to 85% relative humidity	Up to 95% relative humidity
Power Supply	12VDC or 24VAC	12VDC or 24VAC
Power Draw	220 mA (Max.)	100 mA (Max.)
Lens Options	3.6mm, 6mm, 8mm, 12mm	3.6mm, 6mm, 8mm, 12mm
Dome	Polycarbonate (clear with inner sleeve)	Polycarbonate (clear with inner sleeve)
Base / Ring	CNC Aluminum Anodized (6061 T6)	CNC Aluminum Anodized (6061 T6)
Dimensions	4.63" (118 mm) dia / 3.31" (76 mm) H	4.63" (118 mm) dia / 3.31" (76 mm) H
Weight	1.0 lbs (454g)	1.0 lbs (454g)

Model Numbers:

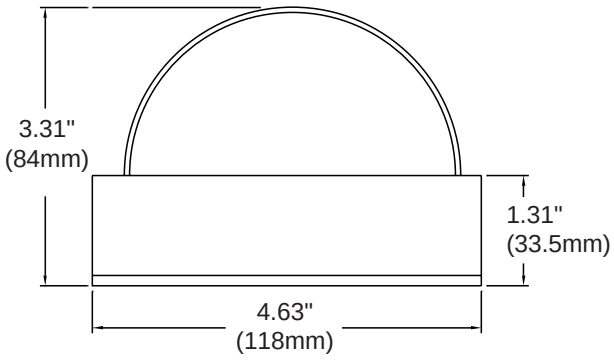
Model	*Description*
HDB4236AC	*B&W, 420 lines — 3.6mm lens (70° FOV)*
HDB4206AC	*B&W, 420 lines — 6mm lens (45° FOV)*
HDB4208AC	*B&W, 420 lines — 8mm lens (33° FOV)*
HDB4212AC	*B&W, 420 lines — 12mm lens (23° FOV)*
HDC3336AC	*Col, 330 lines — 3.6mm lens (70° FOV)*
HDC3306AC	*Col, 330 lines — 6mm lens (45° FOV)*
HDC3308AC	*Col, 330 lines — 8mm lens (33° FOV)*
HDC3312AC	*Col, 330 lines — 12mm lens (23° FOV)*

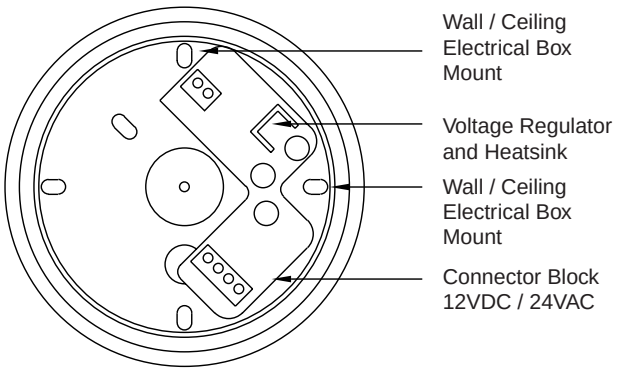
24 VAC Plug-in Transformer:

PS2420	*120 VAC to 24 VAC, 20VA, 60Hz*

Features

- Weather and impact protected housing
- Vandal resistant / Hammer tested
- Rustproof anodized aluminum base
- Silver finish base / clear dome with black inner sleeve
- Universal 180° camera rotation
- B&W or color DSP
- Compact at only 4.6" diameter
- Neoprene backing / Dustproof
- 12VDC or 24VAC operation





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E-mail: rainbow@isorainbow.com • **Internet:** www.rainbowcctv.com

Technology by Derwent Extreme

Non metric weights and measurements are approximate.
Specifications are subject to change without notice.

RMB92

9” Video Monitor — Black & White

ELECTRICAL

System:	EIA or CCIR Standard (Dual system)
Picture Tube:	9” measured diagonally
Horizontal Resolution:	>1000 TV Lines (Center) >800 TV Lines (Corners)
Video Input:	Composite: 0.5-2 V p.-p., sync negative
Video Input Impedence:	High (Loop Through) 75Ω terminated
Bandwidth:	100 Hz to 10 MHz
Video Gain:	30dB
Linearity:	Horizontal: 15% Max. Vertical: 10% Max.
Video Output:	Composite: 0.5-2V p.-p., sync negative
Video Output Impedence:	Over 10KΩ
Power Requirement:	100~240V AC, 50/60 Hz
Power Consumption:	0.5A

ENVIRONMENTAL

Operating Temperature:	14° F to 130°F (-10° C to 55°C)
Storage Temperature:	-22° F to 149°F (-30° C to 65°C)
Humidity:	10 to 95%, non-condensing

CERTIFICATIONS

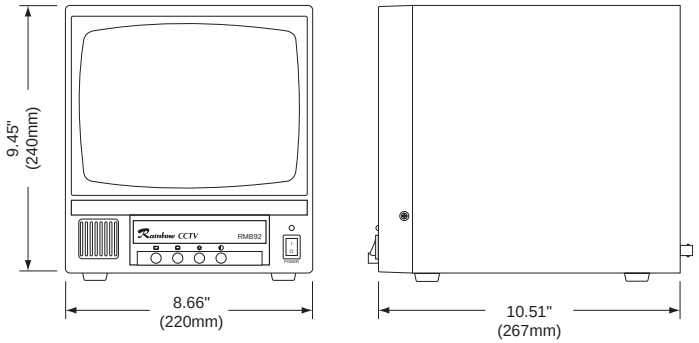
UL/CUL Listed TV/Video Product 8K37, E133441
CE

GENERAL

Dimensions:	8.66 × 9.45 × 10.51 in. (w/h/d) 220 × 240 × 267 mm
Weight:	Approx. 13.2lb (6kg)

CONTROLS / CONNECTORS

Front:	Horizontal Hold (rotary knob) Vertical Hold (rotary knob) Brightness (rotary knob) Contrast (rotary knob)
Rear:	Video IN-OUT (BNC) Impedance Switch: HIGH, LOW (75Ω)



RMB122

12” Video Monitor — Black & White

ELECTRICAL

System:	EIA or CCIR Standard (Dual system)
Picture Tube:	12” measured diagonally
Horizontal Resolution:	>1000 TV Lines (Center) >800 TV Lines (Corners)
Video Input:	Composite: 0.5-2 V p.-p., sync negative
Video Input Impedence:	High (Loop Through) 75Ω terminated
Bandwidth:	100 Hz to 10 MHz
Video Gain:	30dB
Linearity:	Horizontal: 15% Max. Vertical: 10% Max.
Video Output:	Composite: 0.5-2V p.-p., sync negative
Video Output Impedence:	Over 10KΩ
Power Requirement:	100~240V AC, 50/60 Hz
Power Consumption:	0.5A

ENVIRONMENTAL

Operating Temperature:	14° F to 130°F (-10° C to 55°C)
Storage Temperature:	-22° F to 149°F (-30° C to 65°C)
Humidity:	10 to 95%, non-condensing

CERTIFICATIONS

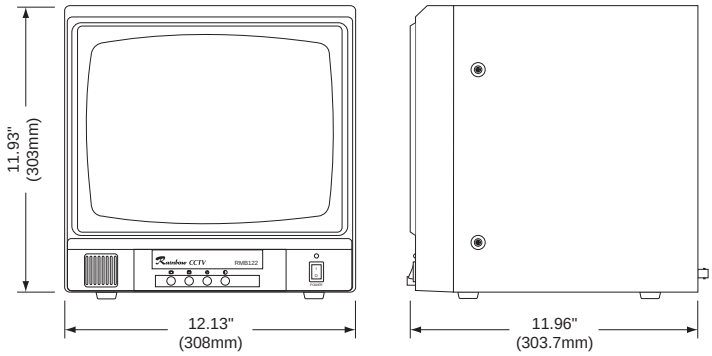
UL/CUL Listed TV/Video Product 8K37, E133441
CE

GENERAL

Dimensions:	12.13 × 11.93 × 11.96 in. (w/h/d) 308 × 303 × 303.7 mm
Weight:	Approx. 19.8lb (9kg)

CONTROLS / CONNECTORS

Front:	Horizontal Hold (rotary knob) Vertical Hold (rotary knob) Brightness (rotary knob) Contrast (rotary knob)
Rear:	Video IN-OUT (BNC) Impedance Switch: HIGH, LOW (75Ω)



RMB15

15” Video Monitor — Black & White

ELECTRICAL

System:	EIA or CCIR Standard (Dual system)
Picture Tube:	15” measured diagonally
Horizontal Resolution:	>1000 TV Lines (Center) >800 TV Lines (Corners)
Video Input:	Composite: 0.5-2 V p.-p., sync negative
Video Input Impedence:	High (Loop Through) 75Ω terminated
Bandwidth:	100 Hz to 10 MHz
Video Gain:	30dB
Linearity:	Horizontal: 15% Max. Vertical: 10% Max.
Video Output:	Composite: 0.5-2V p.-p., sync negative
Video Output Impedence:	Over 10KΩ
Power Requirement:	100~240V AC, 50/60 Hz
Power Consumption:	0.4A

ENVIRONMENTAL

Operating Temperature:	14° F to 130°F (-10° C to 55°C)
Storage Temperature:	-22° F to 149°F (-30° C to 65°C)
Humidity:	10 to 95%, non-condensing

CERTIFICATIONS

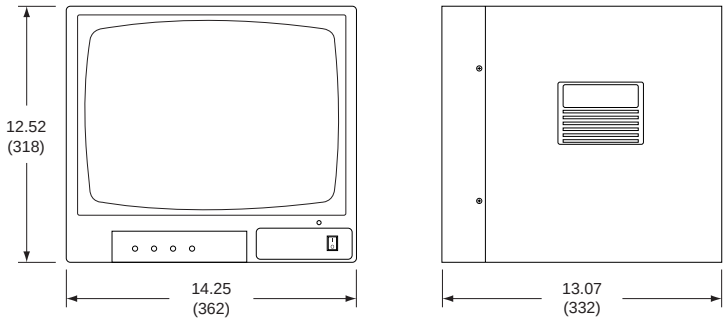
UL Listed TV/Video Product 8K37, E133441
CSA Compliant LR101187
CE

GENERAL

Dimensions:	14.25 × 12.52 × 13.07 in. (w/h/d) 362 × 318 × 332 mm
Weight:	Approx. 28.7lb (13kg)

CONTROLS / CONNECTORS

Front:	Horizontal Hold (rotary knob) Vertical Hold (rotary knob) Brightness (rotary knob) Contrast (rotary knob)
Rear:	Video IN-OUT (BNC) Impedance Switch: HIGH, LOW (75Ω)



RMC10

10” Video Monitor — Color

ELECTRICAL

System:	NTSC or PAL Standard (Dual system)
Picture Tube:	10” measured diagonally
Horizontal Resolution:	>350 TV Lines (Center) >330 TV Lines (Corners)
Video Input:	Composite: 0.5-2 V p.-p., sync negative
Video Input Impedence:	High (Loop Through) 75Ω terminated
Bandwidth:	1 KHz to 4 MHz
Video Gain:	30dB
Linearity:	Horizontal: 15% Max. Vertical: 10% Max.
Video Output:	Composite: 0.5-2V p.-p., sync negative
Video Output Impedence:	Over 10KΩ
Power Requirement:	100~240V AC, 50/60 Hz
Power Consumption:	55W

ENVIRONMENTAL

Operating Temperature:	14° F to 104°F (-10° C to 40°C)
Storage Temperature:	14° F to 131°F (-10° C to 55°C)
Humidity:	Below 80%, non-condensing

CERTIFICATIONS

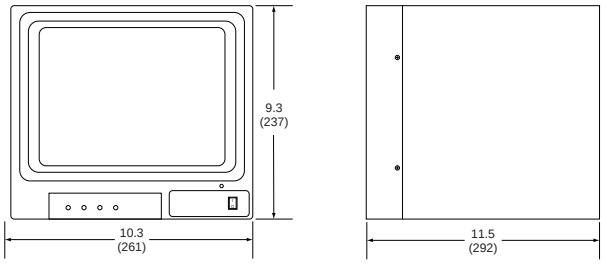
UL Listed TV/Video Product UL1950
CUL Listed TV/Video Product C22.950 M93

GENERAL

Dimensions:	10.3 × 9.3 × 11.5 in. (w/h/d) 261 × 237 × 292 mm
Weight:	Approx. 20lb (9kg)

CONTROLS / CONNECTORS

Front:	Tint (rotary knob) Color (rotary knob) Brightness (rotary knob) Contrast (rotary knob)
Rear:	Video IN-OUT (BNC) Impedance Switch: HIGH, LOW (75Ω)



RMC14

14” Video Monitor — Color

ELECTRICAL

System:	NTSC or PAL Standard (Dual system)
Picture Tube:	14” measured diagonally
Horizontal Resolution:	>350 TV Lines (Center) >330 TV Lines (Corners)
Video Input:	Composite: 0.5-2 V p.-p., sync negative
Video Input Impedence:	High (Loop Through) 75Ω terminated
Bandwidth:	1 KHz to 4 MHz
Video Gain:	30dB
Linearity:	Horizontal: 15% Max. Vertical: 10% Max.
Video Output:	Composite: 0.5-2V p.-p., sync negative
Video Output Impedence:	Over 10KΩ
Power Requirement:	100~240V AC, 50/60 Hz
Power Consumption:	60W

ENVIRONMENTAL

Operating Temperature:	14° F to 104°F (-10° C to 40°C)
Storage Temperature:	14° F to 131°F (-10° C to 55°C)
Humidity:	Below 80%, non-condensing

CERTIFICATIONS

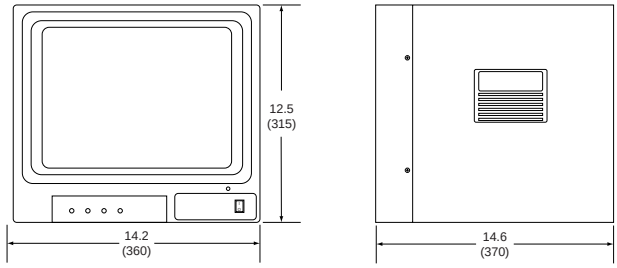
UL Listed TV/Video Product UL1950
CUL Listed TV/Video Product C22.950 M93

GENERAL

Dimensions:	14.2 × 12.5 × 14.6 in. (w/h/d) 360 × 315 × 370 mm
Weight:	Approx. 30lb (14kg)

CONTROLS / CONNECTORS

Front:	Tint (rotary knob) Color (rotary knob) Brightness (rotary knob) Contrast (rotary knob)
Rear:	Video IN-OUT (BNC), IN (S-Video) Video Selection: BNC or S-Video Impedance Switch: HIGH, LOW (75Ω)



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IR Illuminator Range Guidelines

IRL/IRLC Series

Model	Typical Range	Beam	nm
IRL585A / IRLC685	30'	60°	850nm
IRL285A / IRLC385	50'	30°	850nm
Semi-covert (slightly visible glow)			

Model	Typical Range	Beam	nm
IRL594A / IRLC694	12’	60°	940nm
IRL294A / IRLC394	20’	30°	940nm
Covert (no visible glow)			

UFL Series

Model	Typical Range	Beam	nm
UFL685	41'	60°	850nm
UFL385	75'	30°	850nm
Semi-covert (slightly visible glow)			

Model	Typical Range	Beam	nm
UFL694	16’	60°	940nm
UFL394	30’	30°	940nm
Covert (no visible glow)			

UF100 Series

Model	Typical Range	Beam	nm
UF100673	50'	60°	730nm
UF100373	90'	30°	730nm
UF100173	150'	10°	730nm
Visible glow			

Model	Typical Range	Beam	nm
UF100683	35’	60°	830nm
UF100383	63’	30°	830nm
UF100183	105’	10°	830nm
Semi-covert (slightly visible glow)			

Model	Typical Range	Beam	nm
UF100695	20’	60°	950nm
UF100395	36’	30°	950nm
UF100195	60’	10°	950nm
Covert (no visible glow)			

UF500 Series

Model	Typical Range	Beam	nm
UF500673	180'	60°	730nm
UF500373	246'	30°	730nm
UF500173	344'	10°	730nm
UF500S73	460’	5°	730nm
Visible glow			

Model	Typical Range	Beam	nm
UF500683	126’	60°	830nm
UF500383	172’	30°	830nm
UF500183	240’	10°	830nm
UF500S83	322’	5°	830nm
Semi-covert (slightly visible glow)			

Model	Typical Range	Beam	nm
UF500695	72’	60°	950nm
UF500395	98’	30°	950nm
UF500195	138’	10°	950nm
UF500S95	184’	5°	950nm
Covert (no visible glow)			

Note: The above ranges are indicated as a general guide and the actual results depend on the performance of the camera and lenses as well as the reflectivity of the scene, weather conditions, etc. Rainbow’s Enhanced-IR cameras typically provide 30% better range.

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UF500 SERIES

High Performance Covert and Semi-Covert Infrared Illuminators

The UF500 series of illuminators for CCTV applications is specially designed for covert or semi-covert night time operations using special gold optics and high efficiency quartz halogen bulbs for **unsurpassed night viewing up to 460 feet (140m)** and 60° wide. The unique lens design provides evenly distributed illumination from the foreground to background for the entire scene. The shorter and thicker bulb filaments operate at lower voltages and temperatures and are less vulnerable to shock and vibration. The result is a high-performance illuminator with 40% higher efficiency and 50% longer life than traditional illuminators.

The UF500, patent pending technology by Derwent Extreme, is the favored illuminator in Europe where night-time video monitoring is broadly utilized for proactive policing.

UF500 - Illuminator Specifications

Color	Black (Standard)
Radiated Output	Similar to ordinary 500 Watt
Viewing Range	Up to 460 feet (140m)*
Optics	Optimized focus, gold optics system
Consumption	220W (28VAC)
Bulb life	3,000 hours average
Construction	Robust aluminum casting/extrusion
Weight	Approx. 4.2 lbs. (1.9 kg)

* View range, video signal, signal/noise ratio and field of view will depend on the sensitivity and spectral response of your camera/lens combination.

Benefits

- *High output illumination up to 460 feet (140m) (up to 650 feet (200m) using 2 illuminators)*
- *Range of beam patterns from Spot, 10°, 30°, & 60°*
- *Range of filters from 730 nm to covert 950 nm*
- *Low operating cost, uses less power*
- *Balanced illumination – no foreground overexposure*
- *Rugged and weatherproof*
- *Long bulb life – 3,000 hours average; replacement bulbs available*
- *Low operating voltage at 28 VAC*
- *Matching power supplies available*
- *Extends the dynamic range of CCD cameras in low light conditions*
- *2-year warranty**

Visit www.rainbowcctv.com/ir/ for more information on our infrared illuminators

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*Bulb excluded except in cases of manufacturing defects

Non metric weights and measurements are approximate.
Specifications are subject to change without notice.

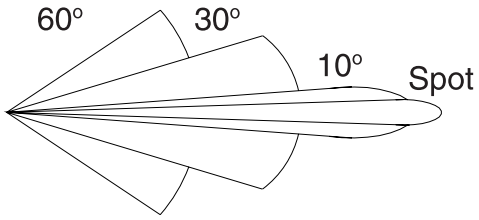
Power Supply Specifications (sold separately)

Models: ***UF500PSS, PSD***

Input	110/115/120 VAC 50/60 Hz
Output	28.6 VAC nominal
UF500PSS	Single 220VA, 6.3 amp draw
UF500PSD	Dual 420VA, 12.6 amp draw
Photocell	Dusk/Dawn automatic switching
Auxiliary Output	12V DC @ 650ma regulated
Dimensions	6.3 × 3.6 × 9.9 in (w/h/d) /160 × 90 × 250 mm
Weight	UF500PSS – 7.5 lbs. (3.4 kg)
	UF500PSD – 9.5 lbs (4.3 kg)

For more detailed information on these power supplies, refer to the UF500 Power Supply specification sheet. Rainbow literature part number 1119.

Beam Spread Pattern of UF500

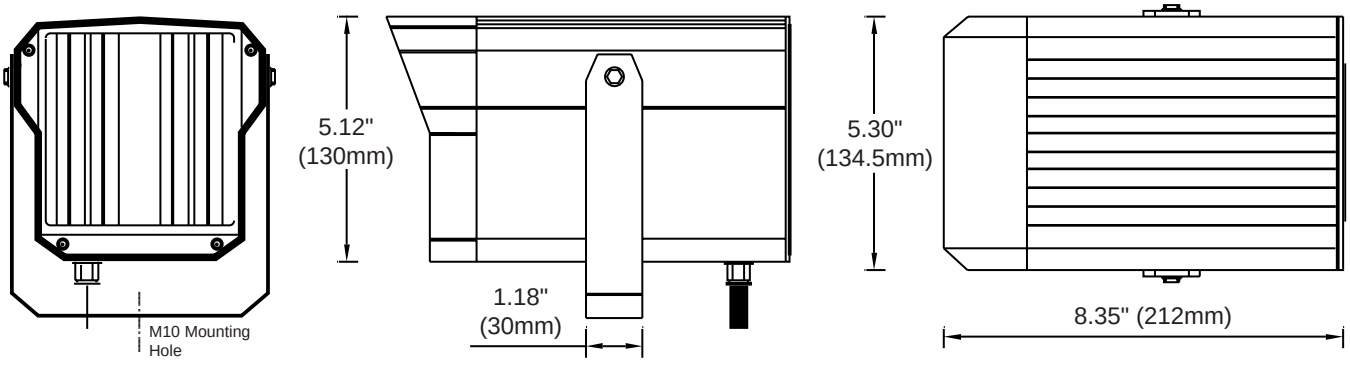


Model Numbers:

Beam Width	*Model*	*Description*	*Typical Range*
5°	***UF500S73***	*UF500, 5° Spot Beam, 730 nm filter*	*460 feet*
	UF500S83	*UF500, 5° Spot Beam, 830 nm filter*	*322 feet*
	UF500S95	*UF500, 5° Spot Beam, 950 nm filter*	*184 feet*
10°	***UF500173***	*UF500, 10° Narrow Beam, 730 nm filter*	*344 feet*
	UF500183	*UF500, 10° Narrow Beam, 830 nm filter*	*240 feet*
	UF500195	*UF500, 10° Narrow Beam, 950 nm filter*	*138 feet*
30°	***UF500373***	*UF500, 30° Medium Beam, 730 nm filter*	*246 feet*
	UF500383	*UF500, 30° Medium Beam, 830 nm filter*	*172 feet*
	UF500395	*UF500, 30° Medium Beam, 950 nm filter*	*98 feet*
60°	***UF500673***	*UF500, 60° Flood Beam, 730 nm filter*	*180 feet*
	UF500683	*UF500, 60° Flood Beam, 830 nm filter*	*126 feet*
	UF500695	*UF500, 60° Flood Beam, 950 nm filter*	*72 feet*
—	***UF500BULB***	*Replacement bulb for UF500 Series*	

Power Supply Model Numbers: *(all w/photocells)*

UF500PSS	*Single UF500 - 120 VAC 50/60 Hz*
UF500PSD	*Dual UF500 - 120 VAC 50/60 Hz*



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UF500PSS/PSD

Weather Protected Power Supply for UF500 Infrared Illuminators

Controlled, stable power is essential for optimal long life performance of the UF500 Infrared Illuminator. These matching power supplies allow installation versatility to suit normal power input voltages of 110 VAC to 120 VAC at 60Hz. The UF500 Power Supply Unit can be bolted to walls or posts adjacent to lamp and camera.

Above: Inside the UF500 Power Supply

Power Supply Specification:

Input	110/115/120 VAC 50/60 Hz
Output	28.6 VAC nominal
UF500PSS	Single 220VA, 6.3 amp draw
UF500PSD	Dual 420VA, 12.6 amp draw
Photocell	Dusk/Dawn automatic switching
Remote Control	On/Off volt-free contact switching
Auxiliary Output	12V DC @ 650ma regulated
Dimensions	6.3 × 3.6 × 9.9 in (w/h/d) 160 × 90 × 250 mm
Weight	
UF500PSS	7.5 lbs. (3.4 kg)
UF500PSD	9.5 lbs (4.3 kg)
Enclosure	Polycarbonate – All-Weather IP66 (NEMA4 Equivalent)

Features:

- *Compact rugged polycarbonate enclosure with weather shielded mounting holes.*
- *CSA NRTL (UL Equivalent) Certified for North American use. (CSA File No. 113310)*
- *Provides a stable output voltage of 28 VAC at the bulb*
- *Three input voltage taps – 110 / 115 / 120 VAC*
- *Single or Dual Output Models*
- *Photocell Controlled (standard)*
- *Remote Control Capability*
- *Auxiliary 12 VDC output for accessory equipment*
- *2-year warranty*

The UF500Power Supply is designed to provide controlled, stable power for our UF500 Series of high performance infrared illuminators.

Model Numbers:

UF500PSS	*Single UF500 - 120 VAC 50/60 Hz*
UF500PSD	*Twin UF500 - 120 VAC 50/60 Hz*

Visit **www.rainbowcctv.com/ir** for more information on our infrared illuminators

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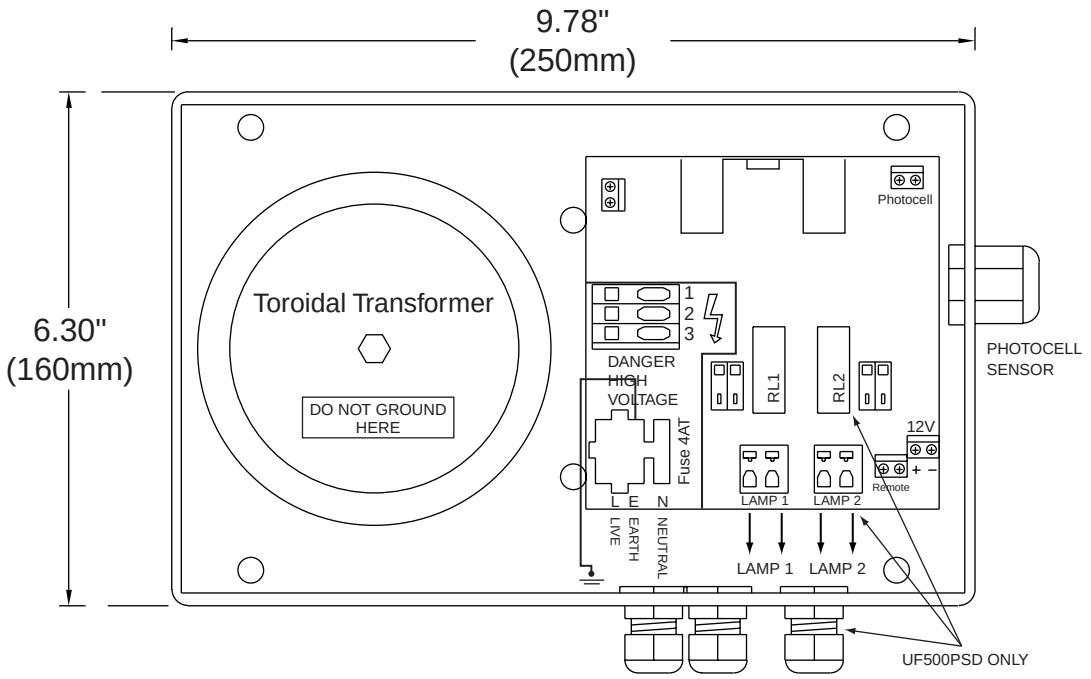

Notes:

1. Over-voltage will shorten the bulb life. Use the power taps to match your input power voltage with the tap selections from 110 VAC to 120 VAC. The optimal voltage of 28 VAC will result in a bulb life of at least 9 months on dusk to dawn every night usage.

2. Under-voltage will decrease the intensity of the bulb output but increase its life. Many customers will purposely decrease the output voltage to the bulb to receive this longer life benefit when sufficient infrared energy is provided by the UF500 illuminator. Contact Rainbow CCTV for an estimated power output versus bulb life chart.

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Technology by Derwent Extreme

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Specifications are subject to change without notice.

UF100 SERIES

"Mini-Flood" Covert and Semi-Covert Infrared Illuminators

The UF100 Series of infrared illuminators is a compact, low-voltage version of our high performance UF500 Series. It is specially designed for covert or semi-covert night time operations using high efficiency quartz halogen bulbs and uniquely cut lenses to match the field of view of surveillance cameras.

The industrial designed housing is compact, attractive and waterproof. Constructed of extruded and cast aluminum components, the housing also acts as a heat sink to allow an efficient illuminator at low input voltages of 12 Volts DC or AC. An optional external module allows for 24 V AC/DC operation.

Despite low voltages and small size, the UF100 has remarkable infrared performance, low operating cost and a long bulb life of 8,000 hours.

A variety of lenses and filters makes the UF100 a versatile infrared illuminator for security specifiers who need to design night time CCTV surveillance with high levels of performance in and around buildings. As a 12 volt illuminator, the UF100 is also suitable for mobile investigative surveillance.

UF100 - Illuminator Specifications

Viewing Range*	60 – 150 feet (20 – 50m)*
Angle	10 deg – 60 deg (depending on model)
Optics	Optimized focus optical system
Consumption	Nominal 70 Watts
Bulb life	8,000 Hours Average
Construction	Robust aluminum casting/extrusion
Weight	Approx. 1.8 lbs (800g)
Color	Black (Standard)

* View range, video signal, signal/noise ratio and field of view will depend on the sensitivity and spectral response of your camera/lens combination.

Benefits

- *High output illumination up to 150 feet (50m)*
- *Range of beam patterns: 10°, 30°, & 60°*
- *Range of filters from 730 nm to covert 950 nm*
- *Compact, attractive design*
- *Rugged and weatherproof*
- *Long bulb life – 8,000 hours average; replacement bulbs available*
- *Low operating cost*
- *12 Volt AC/DC operation standard*
- *Matching power supplies available*
- *24 Volt AC/DC module optional*
- *Extends the dynamic range of CCD cameras in low light conditions*
- *2-year warranty**

Rainbow® CCTV

Visit **www.rainbowcctv.com/ir** for more information on our infrared illuminators

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*Bulb excluded except in cases of manufacturing defects

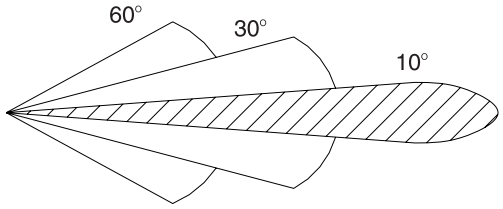
Non metric weights and measurements are approximate.
Specifications are subject to change without notice.

Power Supply Specifications:

Models: ***UF100PSS, PSD, PS24***

Input Power	
UF100PSS/PSD	115/120/125 VAC, 60 Hz
UF100PS24	24/26/28 VAC, 60 Hz
Output	12 VAC nominal
UF100PSS	Single 73.2VA, 0.6 amp draw
UF100PSD	Dual 144VA, 1.2 amp draw
UF100PS24	Single 75.6VA, 3.2 amp draw
Photocell	Dusk/Dawn Auto Switching
Enclosure	IP66 Polycarbonate , weathertight
Dimensions	4.8 × 3.0 × 7.9 in. (w/h/d) (120 × 75 × 200 mm)
Weight	6.6 lbs. (3 kg)

Beam Spread Pattern of UF100

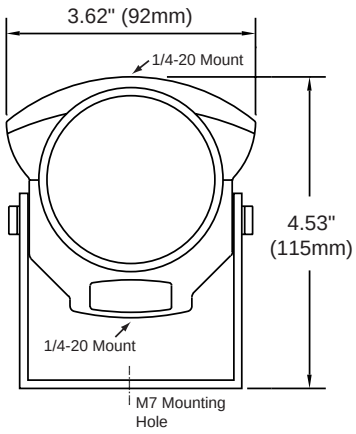


Model Numbers:

Beam Width	*Model*	*Description*	*Typical Range*
10°	***UF100173***	*UF100, 10° Narrow Beam, 730 nm filter*	*150 feet*
	UF100183	*UF100, 10° Narrow Beam, 830 nm filter*	*105 feet*
	UF100195	*UF100, 10° Narrow Beam, 950 nm filter*	*60 feet*
30°	***UF100373***	*UF100, 30° Medium Beam, 730 nm filter*	*90 feet*
	UF100383	*UF100, 30° Medium Beam, 830 nm filter*	*63 feet*
	UF100395	*UF100, 30° Medium Beam, 950 nm filter*	*36 feet*
60°	***UF100673***	*UF100, 60° Wide Beam, 730 nm filter*	*50 feet*
	UF100683	*UF100, 60° Wide Beam, 830 nm filter*	*35 feet*
	UF100695	*UF100, 60° Wide Beam, 950 nm filter*	*20 feet*
—	***UF100BULB***	*Replacement bulb for UF100 Series*	

Power Supply Model Numbers: *(all w/photocells)*

UF100PSS *Single UF100 – 120 VAC 50/60 Hz*
UF100PSD *Dual UF100 –120 VAC 50/60 Hz*
UF100PS24 *24 VAC – 12 VAC Converter*



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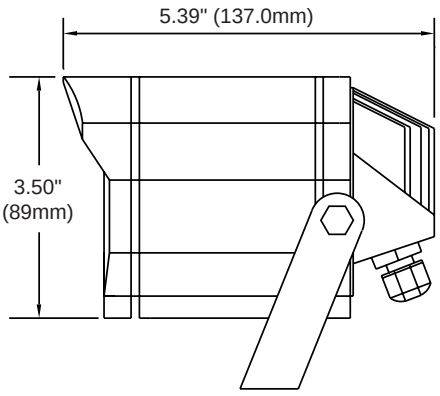

SIDE

Rainbow CCTV

INTERNATIONAL SPACE OPTICS, S.A.
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Non metric weights and measurements are approximate.
Specifications are subject to change without notice.

UF100PSS/PSD/PS24

Weather Protected Power Supply for UF100 Infrared Illuminators

Controlled, stable power is essential for optimal long life performance of the UF100 Infrared Illuminator. These matching power supplies allow installation versatility to suit normal power input voltages. The PSS/PSD models accept 115-125 VAC, the PS24 model accepts 24-28 VAC. The UF100 Power Supply Unit can be bolted to walls or posts adjacent to lamp and camera.

Above: Inside the UF100 Power Supply

Features:

- *Compact rugged polycarbonate enclosure with weather shielded mounting holes.*
- *CE Certified*
- *Provides a stable output voltage of 12 VAC at the bulb*
- *Three input voltage taps –*
  115 / 120 / 125 VAC (PSS/PSD)
  24 / 26 / 28VAC (PS24)
- *Photocell Controlled (standard)*
- *Remote Control Capability*
- *2-year warranty*

Power Supply Specifications:

Models: ***UF100PSS, PSD, PS24***

Input Power	
UF100PSS/PSD	115/120/125 VAC, 60 Hz
UF100PS24	24/26/28 VAC, 60 Hz
Output	12 VAC nominal
UF100PSS	Single 73.2VA, 0.6 amp draw
UF100PSD	Dual 144VA, 1.2 amp draw
UF100PS24	Single 75.6VA, 3.2 amp draw
Photocell	Dusk/Dawn Auto Switching
Remote Control	Volt Free Contacts for remote switching by telemetry
Enclosure	IP66 Polycarbonate Weathertight
Dimensions	4.8 × 3.0 × 7.9 in. (w/h/d) (120 × 75 × 200 mm)
Weight	6.6 lbs. (3 kg)
Certifications	*CE*

The UF100Power Supply is designed to provide controlled, stable power for our UF100 Series of compact infrared illuminators.

Model Numbers:

UF100PSS	*Single UF100 - 120 VAC 60 Hz*
UF100PSD	*Dual UF100 - 120 VAC 60 Hz*
UF100PS24	*Single UF100 - 24 VAC 60 Hz*

Visit **www.rainbowcctv.com/ir** for more information on our infrared illuminators

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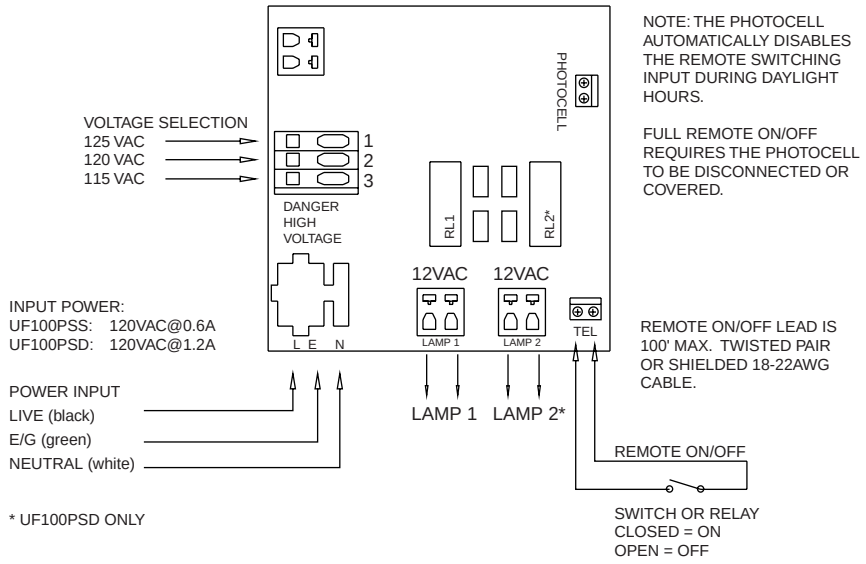
UF100PSS/PSD BLOCK DIAGRAM

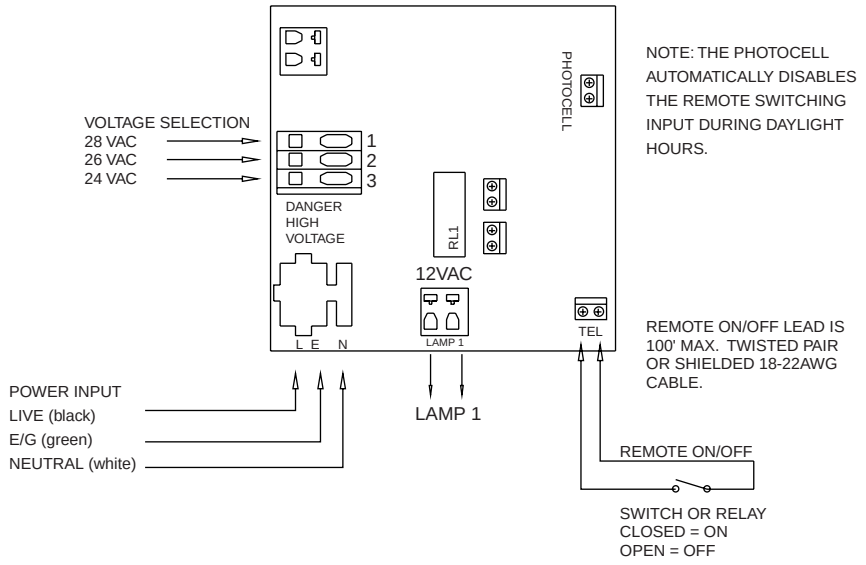


NOTE: THE PHOTOCELL AUTOMATICALLY DISABLES THE REMOTE SWITCHING INPUT DURING DAYLIGHT HOURS.

FULL REMOTE ON/OFF REQUIRES THE PHOTOCELL TO BE DISCONNECTED OR COVERED.

REMOTE ON/OFF LEAD IS 100' MAX. TWISTED PAIR OR SHIELDED 18-22AWG CABLE.

UF100PS24 BLOCK DIAGRAM



NOTE: THE PHOTOCELL AUTOMATICALLY DISABLES THE REMOTE SWITCHING INPUT DURING DAYLIGHT HOURS.

REMOTE ON/OFF LEAD IS 100' MAX. TWISTED PAIR OR SHIELDED 18-22AWG CABLE.

CE

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UFL SERIES

Covert and Semi-Covert LED Infrared Illuminators

The UFL Series LED Infrared Illuminator is a versatile short to mid-range illuminator (up to 75 feet* / 23 m). It is encased in a weather-tight cast and extruded aluminum housing and is equipped with a U-bracket for instant installation. It is ideal for existing CCTV installations and new CCTV projects that specify 24 hour surveillance in and around buildings in covert or semi-covert conditions.

Maximum control is given to the installer. The unit allows 12VDC or 24VAC operation and requires less than 14 watts. A built-in photocell turns the unit off automatically during daylight hours.

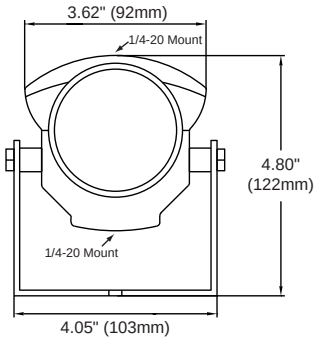
UFL Series LED Illuminator Specifications

LED Type	High Performance 850nm / 940nm
LED Beam Angles	30 deg. or 60 deg.
Number of LEDs	60
Operational Range	-4°F to 122°F (-20°C to +50°C)
Humidity Range	Up to 85% relative humidity
Power Supply	12VDC or 24VAC
Power Draw	800 mA (Max.)

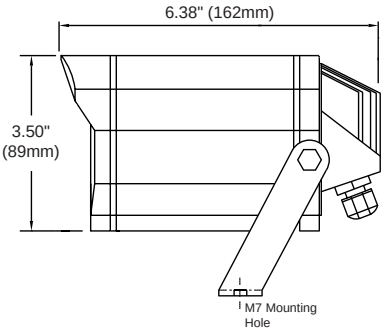
Enclosure:

Housing	Extruded and Cast Aluminum
U-Bracket	Aluminum
Finish	Baked Enamel - Black
Dimensions	See drawing below
Weight	2.2 lbs (1 kg)

Each unit includes:
Photocell with sensitivity adjustment
Voltage Regulator for 12VDC or 24VAC input power



FRONT



SIDE

Features:

- Illumination up to 75 feet* (23m)
- Sixty (60) high performance IR LED's
- Integrated heat sink built into the extruded aluminum housing
- Photocell with sensitivity control
- 12VDC or 24VAC operation
- 850 nm (semi-covert) or 940 nm (covert) LEDs
- Weatherproof housing

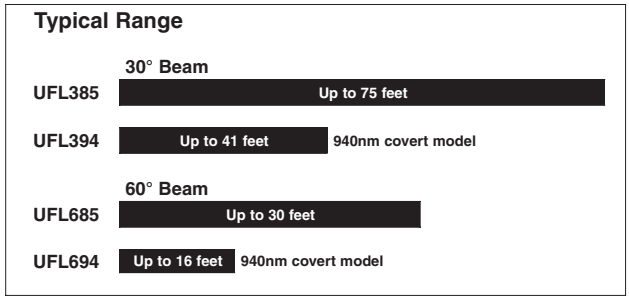
Model Numbers:

Model	*Description*
UFL385	*30° Medium Beam, 850nm*
UFL685	*60° Wide Beam, 850nm*
UFL394	*30° Medium Beam, 940nm (covert)*
UFL694	*60° Wide Beam, 940nm (covert)*

* View range, video signal, signal/noise ratio and field of view will depend on the sensitivity and spectral response of your camera/lens combination.

Performance Notes:

1. Use good infrared sensitive cameras for better results.
2. 850nm models emit a slight red visible glow.
3. 940nm covert models are not visible, but require a camera with extended IR range to achieve the distance of our 850nm models.



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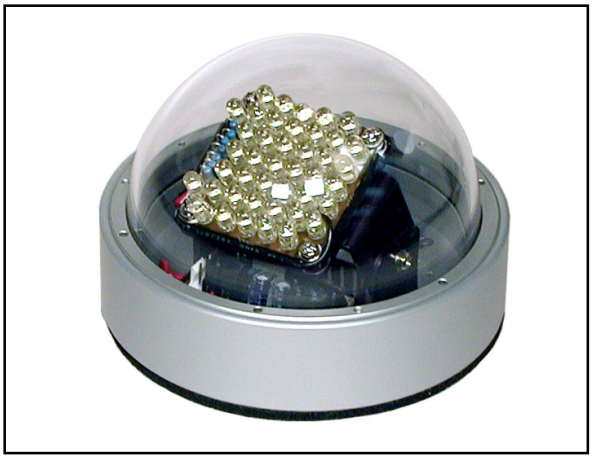
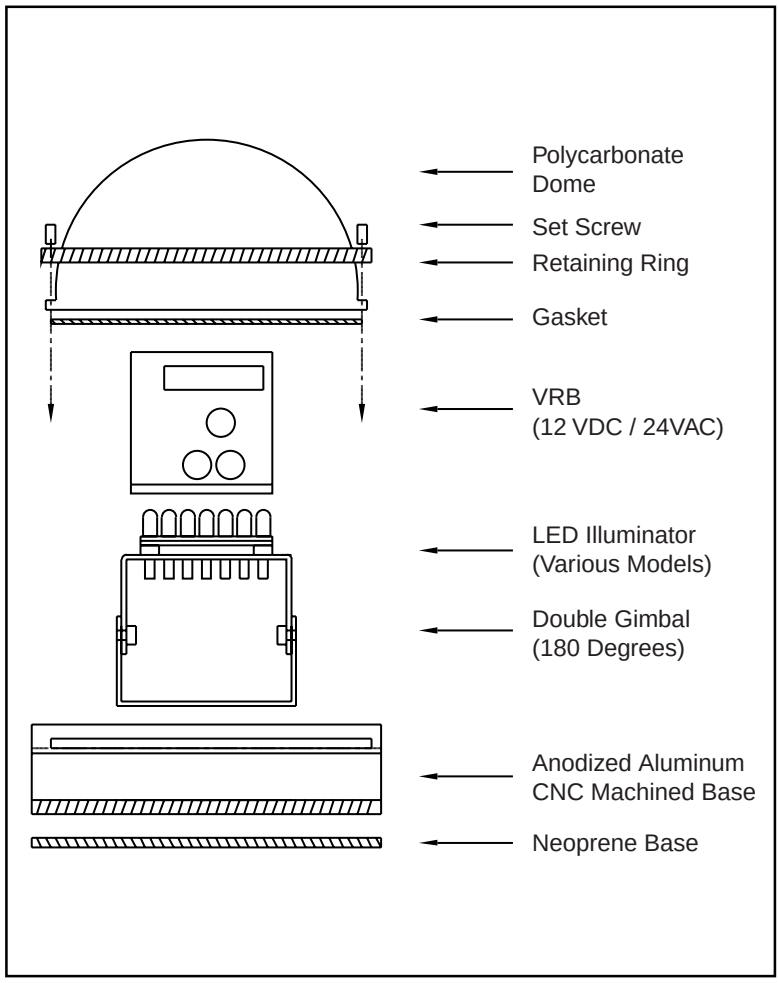
IRL SERIES

LED Infrared Illuminator (patent pending)

The IRL Series Infrared Illuminator is a versatile short range illuminator (up to 50 feet /15 m) that easily installs onto ceilings, walls and standard electrical boxes. It is ideal for infrared enhancement of dark areas in restaurants, night-clubs, warehouses, and wherever video surveillance requires night-time performance enhancement under covert or semi-covert conditions.



The Hi-Impact Dome enclosure is hammer tough and weathertight. The exterior is a thick anodized CNC machined aluminum base with an impact resistant polycarbonate dome. An anodized retaining ring locks the dome in place providing continuous rigidity against impact forces. Inside, 42 high-performance LEDs mounted to a heat-sinking double-gimbal can be easily adjusted to point in the desired direction.



The IRL Series can be installed as a covert infrared illuminator to enhance the night-time performance of our matching HD Series B&W surveillance camera. Installation is simple “plug-and-play” and adjusting the direction of the LED illuminator is quickly achieved. The rugged yet elegant design is versatile for indoor and outdoor installations in vandal prone locations. It can also fit over a single gang electrical box for home automation projects.

Above and left: The IRL Series is based on a tough vandal resistant design comprising of a polycarbonate dome and anodized CNC machined base that installs onto walls, ceilings, and electrical boxes. Matching HD Series infrared sensitive cameras make for attractive, non-obtrusive 24 hour surveillance systems.

Visit **www.rainbowcctv.com/ir** for more information on our infrared illuminators

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The IRL Series is designed to mount over a single gang box to provide a flush appearance while leaving room inside the electrical box for connectors. The impact resistant dome can also be surface installed in minutes to all interior and exterior walls and ceilings.

A patent (pending) gimbal device allows full rotation of the LED head for positioning in any direction while also acting as a heat sink to transfer heat to the solid aluminum base.

Pre-harnessed wiring allows for plug & play installation with a standard 12 VDC or 24 VAC power supply.

Specifications

Viewing Range	Up to 50 feet (15m)*
LED Type	High Performance 850nm / 940nm
LED Beam Angles	60 deg. (M), 30 deg. (N)
Number of LEDs	42
Pan/Tilt Device	Full rotational double gimbal
Operational Range	-4° to 122°F (-20° to +50°C)
Humidity Range	Up to 85% relative humidity
Power Supply	12 VDC or 24 VAC
Power Draw	600 mA (Max.)

Enclosure:

Dome	Polycarbonate
Base / Ring	CNC Aluminum Anodized (6061 T6)
Dimensions	ø 4.63” (118 mm) / 3.31” (84 mm) H
Weight	1.0 lbs (454g)

* View range, video signal, signal/noise ratio and field of view will depend on the sensitivity and spectral response of your camera/lens combination.

Features

- Illumination to 50 feet (15m)
- 850nm or covert 940nm options
- 30° or 60° models
- 42 IR LED's on double-gimbal head
- Weather and impact protected housing
- Vandal resistant / Hammer tested
- Rustproof anodized aluminum base
- Universal IR head rotation
- Compact at only 4.6" diameter
- Neoprene backing / Dustproof
- 5 minute installation
- 2-year warranty

Model Numbers:

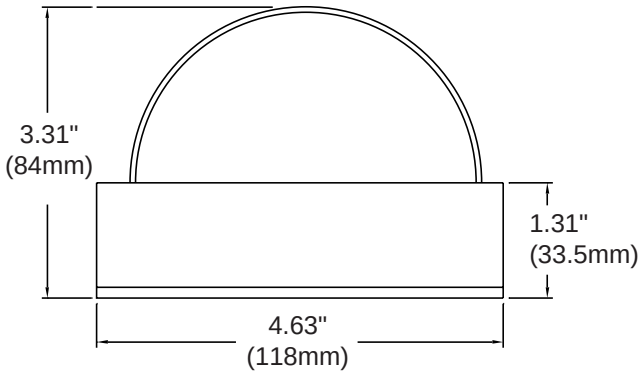
Model	*Description*
IRL285A	*30º Medium Beam, 850nm*
IRL585A	*60º Wide Beam, 850nm*
IRL294A	*30º Medium Beam, 940nm (covert)*
IRL594A	*60º Wide Beam, 940nm (covert)*

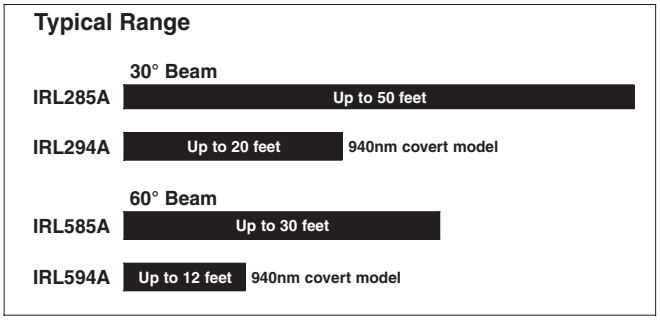
Note: Aluminum finish, clear dome

Black finish available as special order on above items

Performance Notes:

1. Use good infrared sensitive cameras for better results.
2. 850nm models emit a slight red visible glow.
3. 940nm covert models are not visible, but require a camera with extended IR range to achieve the distance or our 850nm models.





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Technology by Derwent Extreme

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Specifications are subject to change without notice.

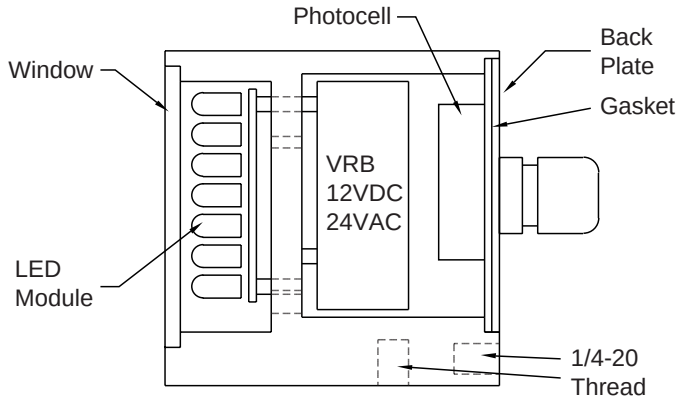
IRLC SERIES

Compact LED Infrared Illuminator

The IRLC Series infrared illuminators offer a versatile, effective and economical solution for covert lighting of indoor and outdoor surveillance. The compact cube shape is designed to be located near the surveillance site, while allowing the camera to be located further away if necessary.

These low voltage illuminators can be safely and discreetly installed to enhance the nighttime performance of existing and new infrared-sensitive cameras. Installers can now provide as much infrared light as necessary to illuminate a dark environment.

The units are comprised of 42 high performance LEDs mounted to a solid core CNC machined aluminum housing that acts as a heat sink. A voltage regulator allows for 12VDC or 24VAC operation. An adjustable photocell allows the installer to set the ambient light level for automatic on/off operation. The illuminators are available in 850nm or 940nm, with 30 degree or 60 degree beam patterns. A variable resistor, that acts like a dimmer, allows the installer to adjust the infrared light intensity. Two 1/4-20 mounting holes allow for easy installation onto standard camera brackets.



OVERVIEW

Features

- Illumination up to 50 feet (15m)
- 850nm or covert 940nm options
- 30° or 60° beam width
- 42 high performance IR LED's
- Weatherproof housing
- Rustproof anodized aluminum housing
- Versatile mounting options
- Compact size (under 3-inches square)
- 12VDC or 24VAC operation
- 2-year warranty

Visit **www.rainbowcctv.com/ir** for more information on our infrared illuminators

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SPECIFICATIONS

Viewing Range	Up to 50 feet (15m)*
LED Type	High Performance 850nm / 940nm
LED Beam Angles	60 deg. (W), 30 deg. (M)
Number of LEDs	42
Output Control	Variable Resistor
Photocell	Automatic On/Off adjustable
Operational Range	-20°C to +50°C (-4°F to 122°F)
Humidity Range	Up to 85% relative humidity
Voltage Regulator	Included for electronic protection
Power Supply	12VDC or 24VAC
Power Draw	700 mA (Max.)

ENCLOSURE:

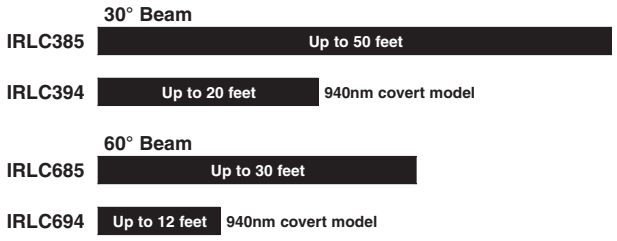
Housing	CNC Aluminum Anodized (6061 T6) black
Front Window	Optical Acrylic
Back Cover	Anodized Aluminum Plate, Gasketed
Mount	1/4-20 thread bottom and rear
Dimensions	2.9 X 2.75 X 2.75 in. (w/h/d) (73 × 70 × 70mm)
Approx. Weight	1.0 lbs (454g)

* View range, video signal, signal/noise ratio and field of view will depend on the sensitivity and spectral response of your camera/lens combination.

Model Numbers

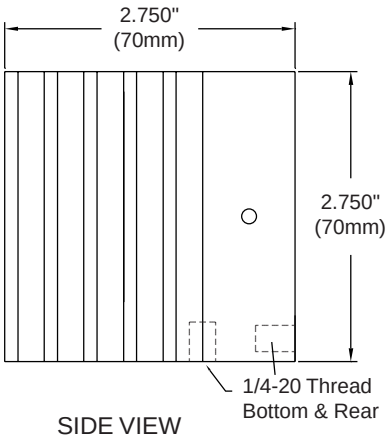
IRLC385	850nm, 30 deg. Medium Beam
IRLC685	850nm, 60 deg. Wide Beam
IRLC394	940nm, 30 deg. Medium Beam (covert)
IRLC694	940nm, 60 deg. Wide Beam (covert)

Typical Range

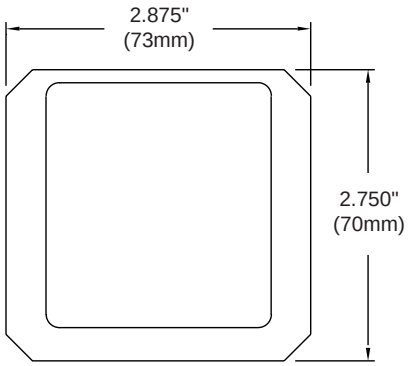


Performance Notes:

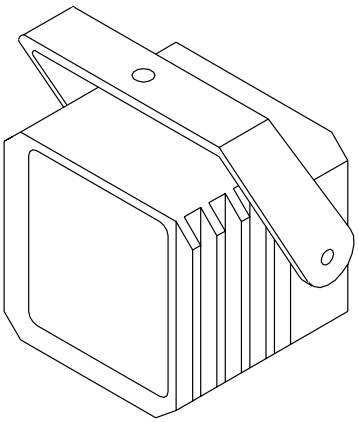
1. Use good infrared sensitive cameras for better results.
2. 850nm models emit a slight red visible glow.
3. 940nm covert models are not visible, but require a camera with extended IR range to achieve the distance or our 850nm models.



SIDE VIEW



FRONT VIEW



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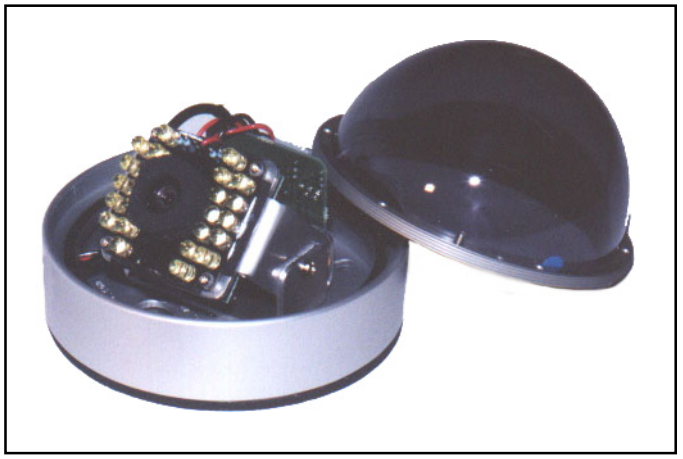
HDI SERIES

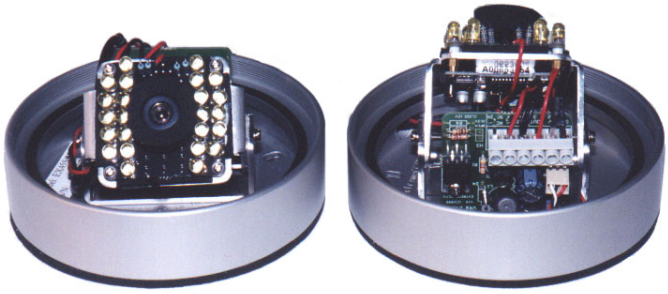
Integrated Infrared High Impact Dome Camera

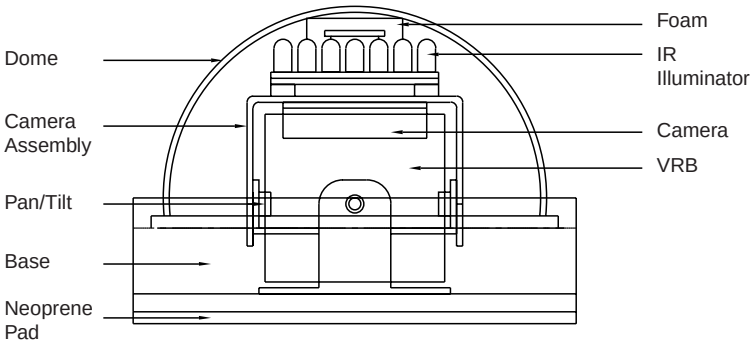


The HDI Series consists of a high performance camera and infrared illumination enclosed in a high impact dome housing. Available in standard 850nm and covert 940nm options, the 24 high performance IR LED's combine with our IR optimized CCD camera for outstanding day/ night short-range surveillance. All models accept 12VDC or 24VAC (user selectable).

The HDI Series is hammer tough, weatherproof, and vandal resistant. The CNC machined aluminum base and polycarbonate dome combine to protect the unit from high impact forces.

The HDI Series is extremely versatile for indoor and outdoor installations in vandal prone locations. It can also fit over a single gang electrical box for integration with cable television modulators and other electronic options.





Applications:

- Schools / Prisons
- Access Control
- Home Automation
- Transit Vehicles
- Public Buildings
- Industrial Buildings
- Indoor / Outdoor

Above: The HDI Series is based on the tough vandal resistant design of our HD Series dome cameras. The HD Series is available in B&W and DSP color for applications that do not require infrared illumination. The HD Series can also be comined with our stand alone illuminators for greater distance coverage and versatility.

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Specifications are subject to change without notice.

Specifications

IR Optimized Camera	
TV System	EIA
Image Sensor	1/3" CCD Sony Image Sensor
Video Signal Output	1 V p-p, 75 ohm
Effective Pixels	537 (H) x 505 (V)
Sync. System	Internal
Resolution	420 TV Lines
Min. Illumination	0.1 lux @ F2.0 / 0 lux with IR
S/N Ratio	>50 dB
Gamma Correction	0.45
Electronic Shutter	1/60 to 1/100,000
Gamma Correction	0.45
Backlight Compensation	Manual Switch
Gain Control	AGC
Lens Options	3.6mm, 6mm, 8mm

Infrared Illuminator	
LED Type	High performance 850 or 940nm
LED Beam Angle	Matched to lens
Number of LED's	24

General	
Operational Range	-20°C to +50°C (-40°F to 122°F)
Humidity Range	Up to 95% relative humidity
Power Supply	12VDC or 24VAC
Power Draw	500 mA (Max.)
Lens Options	3.6mm, 6mm, 8mm
Dome	Polycarbonate (half-tint)
Base / Ring	CNC Aluminum Anodized (6061 T6)
Dimensions	ø4.63" (118 mm), 3.31" (76 mm) H
Weight	1.0 lbs (454g)

Model Numbers:

Camera with 850nm IR LED's - 25 foot range

Model	Description
HDI836AH	B&W, 420 lines — 3.6mm lens (70° FOV)
HDI806AH	B&W, 420 lines — 6mm lens (45° FOV)
HDI808AH	B&W, 420 lines — 8mm lens (33° FOV)

Camera with covert 940nm IR LED's - 15 foot range

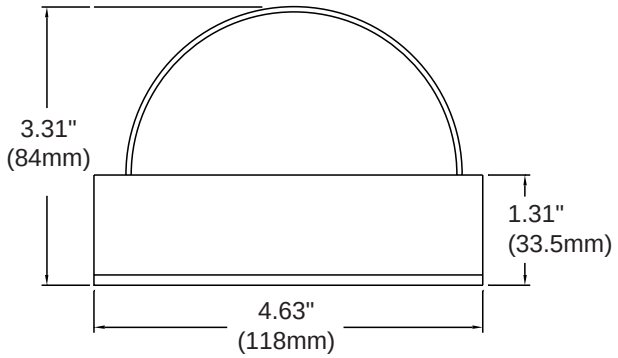
Model	Description
HDI936AH	B&W, 420 lines — 3.6mm lens (70° FOV)
HDI906AH	B&W, 420 lines — 6mm lens (45° FOV)
HDI908AH	B&W, 420 lines — 8mm lens (33° FOV)

24 VAC Plug-in Transformer:

Model	Description
PS2440	120 VAC to 24 VAC, 40VA, 60Hz

Features

- Illumination to 25 feet (7.5m) (15 feet for covert 940nm models)
- 850nm or covert 940nm options
- 24 IR LED's with IR optimized camera on double-gimbal head
- Weather and impact protected housing
- Vandal resistant / Hammer tested
- Rustproof anodized aluminum base
- Silver finish base / half-tint dome
- Universal 180° camera rotation
- 12VDC or 24VAC operation



Rainbow CCTV
INTERNATIONAL SPACE OPTICS, S.A.
Address: 2495 Da Vinci, Irvine, CA 92614 USA
Phone: (800) 654-5367 (949) 260-1599 • **Fax:** (800) 828-2031 (949) 260-1594
E-mail: rainbow@isorainbow.com • **Internet:** www.rainbowcctv.com

Technology by Derwent Extreme

Non metric weights and measurements are approximate.
Specifications are subject to change without notice.

IC SERIES

Ruggedized Aluminum Infrared Illuminator Camera

Ruggedized with an steel housing 1/4" LEXAN windows, the IC Series is designed for the toughest of prison environments. A sharp 45 degree tilt on its faceplate and super-wide 2.5mm lens combine to provide a view of the ENTIRE room including below the camera itself. This unit is ideal for use in small rooms such as prison cells, hospital care rooms, suicide cells, sleep labs and elevator cabs.

The smooth compact housing allows for tight installations without any exposed wiring, making this unit very difficult to vandalize. Separate windows for the camera and illuminator provides a perfect small-room picture without light interference from the LEDs. 84 high performance infrared emitting LED's provide light energy at 850nm or covert 940nm. The voltage and current control board controls LED light intensity while ensuring long life. The built-in photocell allows for automatic on/off infrared operation.

The unit's internal pan-tilt device allows for slight camera adjustments. Preharnessed wiring allows for easy plug and play 24VAC operation.

The "ICQ" version features the high performance Sony ExView CCD™ to allow accurate COLOR surveillance by day and infrared supported B&W surveillance by night to maximize video information.

Standard models with B&W camera and IR

Model	*Description*
IC10524	*IR Camera, 420 lines, 105° FOV, 850nm*
IC10524C	*IR Camera, 420 lines, 105° FOV, 940nm*

"Q" Models B&W/Color camera and IR

Model	*Description*
ICQ10524	*IR Camera, 330 lines, 105° FOV, 850nm*
ICQ10524C	*IR Camera, 330 lines, 105° FOV, 940nm*

About the "Q" Version

These units integrate the high performance color, B&W and infrared sensitive Sony ExView CCD™ chip and infrared illumination in a solid state design that has no mechanical moving parts. The CCD, photocell, current controller and voltage regulator combine to ensure automated video-picture optimization in color and B&W.

Notes

- 850nm models emit a slight red visible LED glow.
- 940nm covert models are not visible, but the output distance is reduced by over 50% for the B&W version.

Features

- *45 degree tilt to view the ENTIRE room including underneath the camera itself*
- *Better Low-Noise Video*
- *Compact Design*
- *84 Infrared LED Illuminators*
- *850 and covert 940nm options*
- *30 foot (9 m) performance in total darkness (19 foot range for 940nm versions)*
- *1/4" LEXAN – Opto-Filtered windows*
- *Internal pan-tilt device for slight camera adjustments*
- *B&W or Day/Night CCD's available*
- *Hi / Low Switchable I.R. Light Modes*
- *Photocell Controlled*
- *Easy Lens Access*
- *Painted Steel Finish*
- *Vandal Resistant Screws*
- *Plug and Play Installation*

Non metric weights and measurements are approximate.
Specifications are subject to change without notice.

Specifications

B/W Camera

Pick- up device	Sony 1/3” CCD B/W
Resolution	420 TV lines
Spectral sensitivity	400 to 940 nm
Light sensitivity	0 lux using IR LED’s

Color/B&W Camera

Pick- up device	1/3” Sony ExView CCD™
Resolution	380 TV lines
Spectral sensitivity	400 to 940+ nm
Light sensitivity	0 lux using IR LED’s

General

Video output	1 V p-p, 75 Ohm, NTSC
S/N	>50 dB
Electronic iris	1/60 to 1/100,000 second
Lens	Fixed 2.5mm
Field of View	105° Horizontal (2.5mm lens)
Operation temperature	-22 °F to +95 °F (-30 °C to + 35 °C)

Electrical

Input power	24VAC, 900mA

Infrared

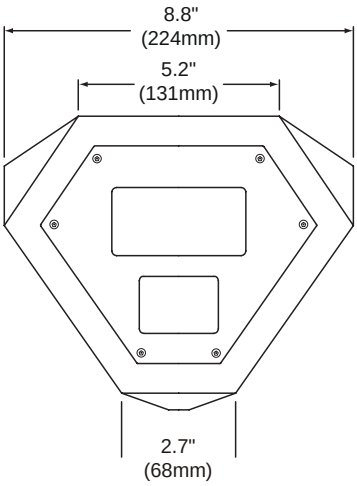
LED’s	84 High performance (850nm or 940nm)
Performance	850nm version up to 30 feet (9m) 940nm version up to 19 feet (6m)

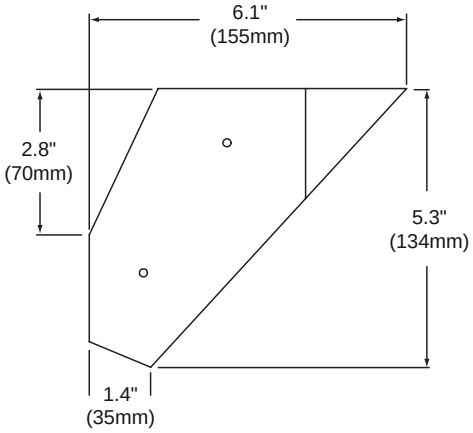
Enclosure

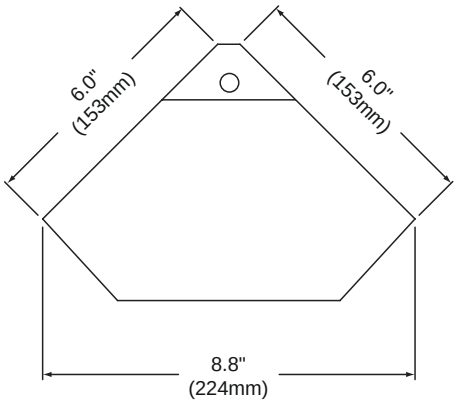
Material	Steel
Color	White
Weight	1.2 kg (2.64 lb)
Windows	1/4” LEXAN (opto-filtered)
Notes	Removable front panel with security screws

Certifications

CSA-NRTL	LR 113310
Class:	2226 02/82 Commercial Video Equipment
Safety:	CSA Std. C22.2 - Various Sections UL50 - Enclosures for Electrical Equipment UL2044 - Commercial CCTV Equipment







INSTALLATION

The IC Series is pre-wired for 24VAC and ready to install. After mounting the product, you will need to connect power and video and adjust the position of the camera and LEDs if necessary. The Photocell Controller, Current Controller, and Voltage Regulator Board are required for proper operation. DO NOT operate each unit independently.

Rainbow CCTV

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IRC SERIES

Aluminum Infrared Illuminator Camera - Corner Mount

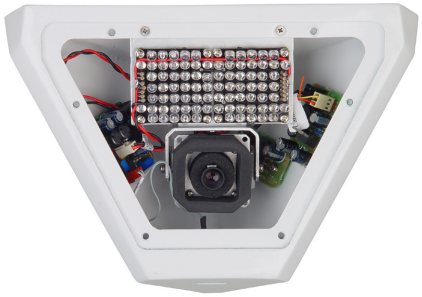
A corner mount camera in an steel housing and a tough Lexan view window, combined with 84 infrared LED's provide night-time surveillance in complete darkness over a distance of more than 35 feet (10.7 m). Separate windows for the camera lens and the LED's allow for minimum light interference and greater installation versatility.

The smooth compact design allows for tight installations without any exposed wiring, making this unit very difficult to vandalize. Applications include prisons, hospitals, warehouses, parking lots, schools and corridors.

A voltage and current control board controls LED light intensity while ensuring long life. A built-in photocell automatically shuts off the infrared function when there is adequate light in view of the CCD camera.

Applications:

- ***Night-time surveillance*** *where normal lighting is prohibited or undesirable.*
- ***Covert surveillance*** *in a wide range of conditions.*
- ***Prison*** *facilities.*
- ***Hospital radiation recovery rooms.***
- ***Low-light computer rooms.***
- ***Backlight corrected surveillance***



Above: 84 infrared emitting LED's provide light energy at 850nm or 940nm for video performance to 35 feet (10.7 m) in complete darkness. A photocell allows automatic on/off infrared operation. Preharnessed wiring with connectors make for easy plug and play operation for 24VAC (can also use 12VDC).

Features

- *Improved infrared light distribution*
- *Better low-noise video*
- *Compact design*
- *84 infrared LED illuminators*
- *Standard 850nm or covert 950nm options*
- *35 foot (10.7 m) performance in darkness*
- *1/4" LEXAN windows*
- *Internal pan-tilt device for slight camera adjustments*
- *Hi / Low switchable I.R. light modes*
- *Photocell controlled*
- *Easy lens access*
- *Powder coated aluminum finish*
- *Vandal resistant screws*
- *Plug and play installation*
- *2-year warranty*

Specifications

Camera

Pick- up device	Sony 1/3” CCD B/W interline
Resolution	420 TV lines
Video output	1 V p-p, 75 Ohm, EIA
S/N	>48 dB
Spectral sensitivity	400 to 940 nm
Light sensitivity	0.05 Lux (F1.4)
Electronic iris	1/60 to 1/100,000 second
Auto gain control	>18dB
Input power	12 VDC
Lens	3.6mm – 70° Field of View
Ambient operation temperature	-22 °F to +140 °F (-30 °C to + 60 °C)

Infrared

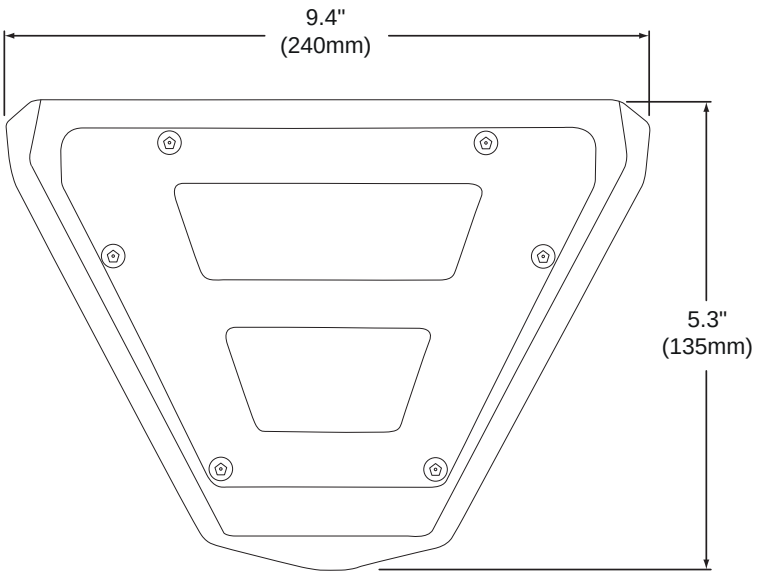
IR LED	850nm or 940nm, 84 LEDS
Input Power	24VAC or 12VDC
Current	800mA at 12VDC
Performance	35 feet meters (10.7m) in total darkness

Enclosure

Material	Steel, removable front panel w/ security screws
Color	White
Weight	1.2 kg (2.64 lb)
Window	1/4” LEXAN

Model Numbers:

Model	*Description*
IRC7024	*IR Camera, 420 lines, 70° FOV, 850nm*
IRC7024C	*IR Camera, 420 lines, 70° FOV, 940nm*



Depth = 4.3" (110mm)

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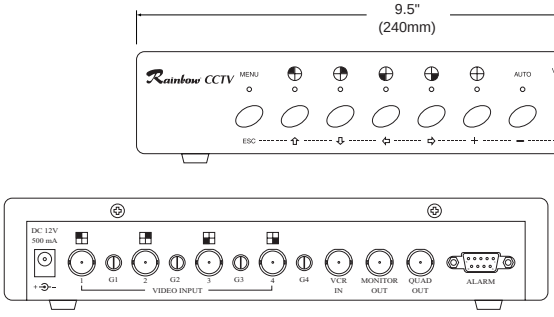
QP Series

B/W & Color Quad Processors

- Connect up to 4 cameras and 1 VCR
- Quad and switching video output
- Real time, high resolution images
- Multi-Function
  - Independent full screen
  - Auto sequential switching
  - System auto detection (NTSC/PAL or EIA/CCIR)
  - Video adjustment for all channels
  - Video loss detection
- Alarm inputs and outputs (4 in/1out)
- User Friendly OSD (On Screen Display)
- Includes plug-in power supply

Specifications		
Model	**QPBF**	**QPCF**
Type	B/W	Color
Video Inputs	4 cameras + 1 VCR	
Video Outputs	1 switching / 1 quad	
TV System	EIA/CCIR (auto detect)	NTSC/PAL (auto detect)
Refresh Rate	EIA: 30 frame/sec.; CCIR: 25 frame/sec.	NTSC: 30 frame/sec.; PAL: 25 frame/sec.
Resolution	720(H) x 480(V) - EIA ; 720(H) x 576(V) - CCIR 256 shades of gray	720(H) x 480(V) - NTSC ; 720(H) x 576(V) - PAL 16.7 million colors (true color)
Alarm Inputs/Outputs	4/1	
Alarm Duration	1~99 seconds	
Camera Title	10 character	
Time/Date	Built-in real time clock	
Dwell Time	1~30 seconds	
RS-232 Port	Yes	
Power Input	12VDC ±10% regulated (500mA UL Approved Plug-in Supply Included)	
Power Consumption	6W Max.	
Weight	Approx. 2.8 lbs. (1250g)	
Operating Condition	32° F to 122° F (0° C to 50° C), 10-80% RH	
Dimensions	9.5 x 1.8 x 5.9 inches (w/h/d) / (240mm x 45mm x 150mm)	



QPBF Rear Panel

QPCF Rear Panel

LCA4

Zoom, Focus, and Iris Control

Compatible with standard, single common zoom lenses

Power Source: 100~120V or 220~240V AC (Changeable) 50/60Hz

Power Consumption: Max. 6W (at 100VAC)

Operation:

1) Select input power using Input Voltage Select Switch on rear of unit (100V or 220V).

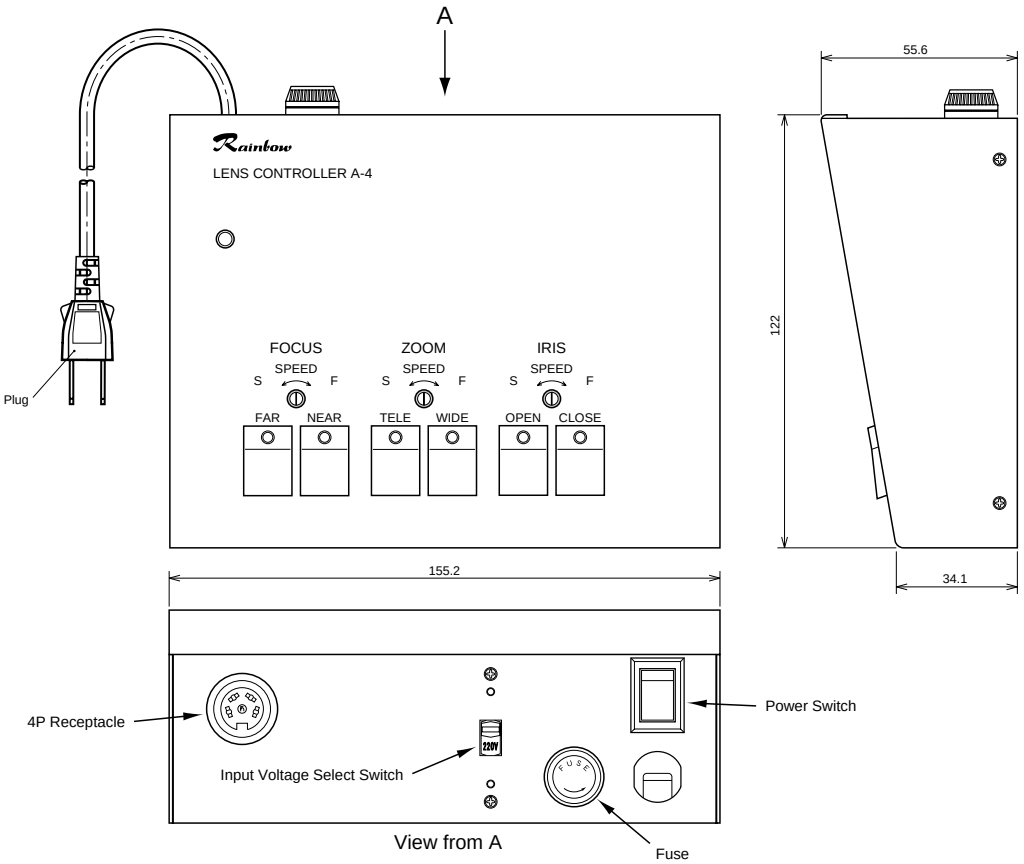
2) Insert the plug and trun the power switch on.

3) The output voltage select switch is changeable between 6.4VDC and 12VDC operation to suit the motorized zoom lens application.

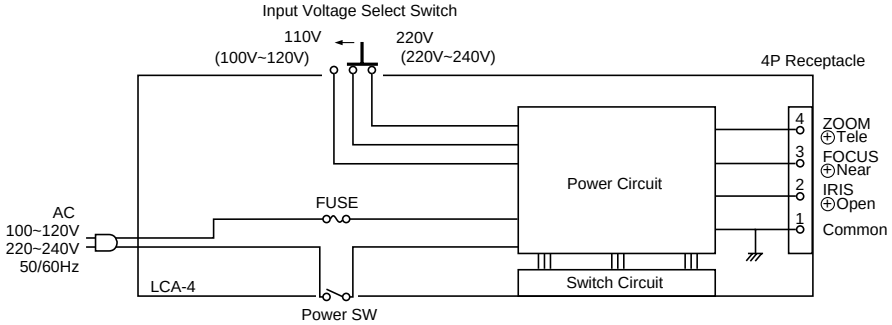
4) Zoom, Focus, and Iris are operated by pushing the button switches. (When using an MEA/EZ-MGE Type auto-iris lens, the iris buttons will not work because the iris is controlled by the internal lens circuit)

Operation Temperature: -10° ±50°C

Size, Approx. Weight: 155.2 × 55.6 × 122mm (w/h/d), 1.2Kg (Approx. 6.1 × 2.2 × 4.8in., 2.6lb.)



– Circuit Diagram –



UM6 Series

6" Universal Mount

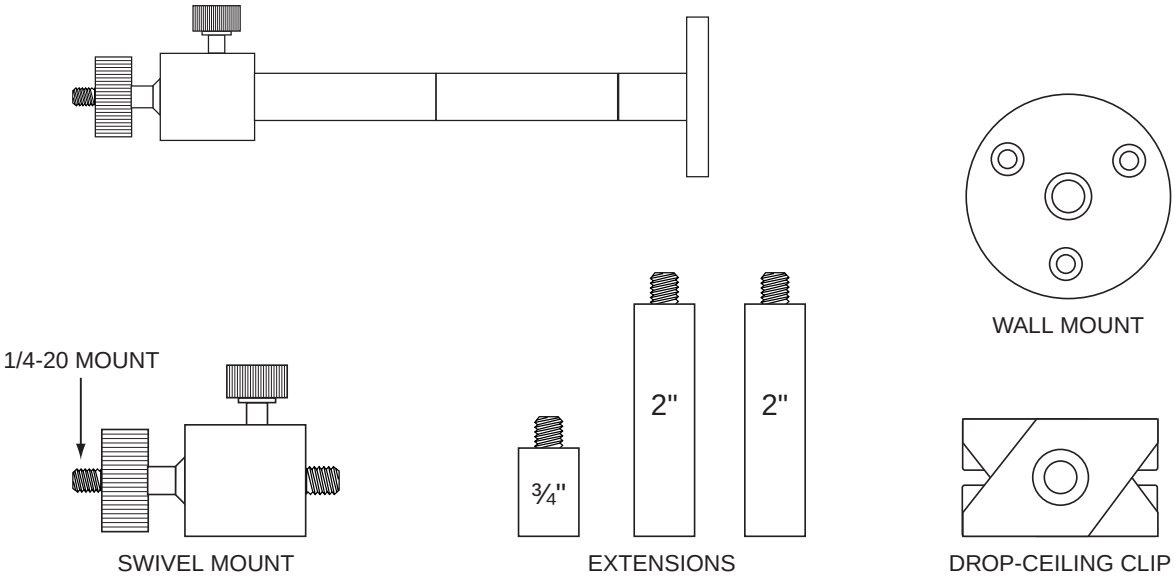
FEATURES

12-in-1 *Up to 12 combinations for maximum versatility*

This unit is ideal for mounting any type of equipment that uses the standard 1/4-20 mount including our bullet, cube, and standard cameras. Both a wall mount plate and drop-ceiling clip are supplied. Please refer to the weight capacities for each attachment before using.

SPECIFICATIONS

Mount Model	**UM6B**	**UM6I**
Color	Black	Ivory
Swivel Angle	360˚	
Tilt Angle	120˚	
Size	4" standard length, 6" with extension	
Construction	Steel with enamel overlay	
Accessories	Philips round head screws with plastic wall anchors (×3)	
Capacity	11 lbs (5kg) with wall mount plate 10 lbs (4.5kg) with mounting plate and extension arm (full 6” length) 6.6 lbs (3kg) with drop-ceiling clip	



SWIVEL MOUNT

EXTENSIONS

WALL MOUNT

DROP-CEILING CLIP

Rainbow CCTV
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E-mail: rainbow@isorainbow.com • **Internet:** http://www.isorainbow.com

Non metric weights and measurements are approximate
Specifications are subject to change without notice

0.7XWC

Wide Converter

Compatible With Model Listed Below In Angular Field of View

Ratio: 0.7X

Max. Relative Aperture: Equal to the maximum relative aperture of the master lens.

Filter screw diameter: 52mm, P0.75

Min. Object Distance (M.O.D.): 0.5m (from Front Vertex)

Angular Field of View:

S6X11 - Motorized and Manual Zooms *

Camera	WIDE	TELE
2/3:	57.3° X 44.6°	10.4° X 7.8°
1/2:	43.4° X 33.2°	7.6° X 5.7°
1/3:	33.2° X 25.2°	5.7° X 4.3°

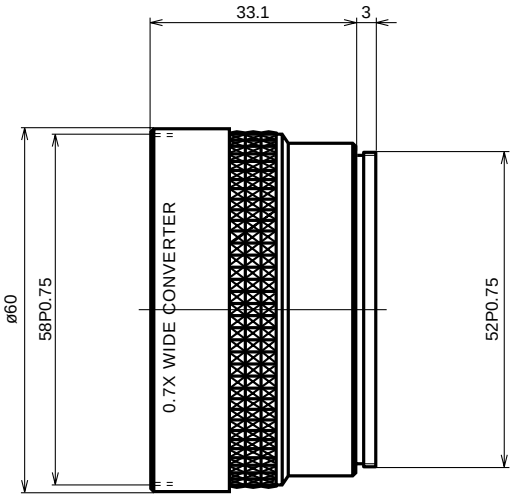
H6X8 - Motorized and Manual Zooms *

Camera	WIDE	TELE
1/2:	59.5° X 46.4°	10.9° X 8.2°
1/3:	46.4° X 35.6°	8.2° X 6.1°

L6X6.5 - Motorized Zoom

Camera	WIDE	TELE
1/3:	55.6° X 43.2°	10.0° X 7.5°

Size, Weight: ø60 x 33.1mm, Approx. 120g (ø2.4 x 1.3 in., Approx. 4.2 oz.)



*H6X8, S6X11 Manual zooms require our 4652SUR 46mm to 52mm Step Up Ring to attach converter to lens. Please inquire.

DLA

Allows use of DC lenses on Video auto-iris cameras

Input Signal: Composite Video Signal or Video Signal

Sensitivity Adjustment: Image Signal Level 0.5~1.0Vp-p

Photometry Range: Approx. 40%~70% Variable to Vp-p

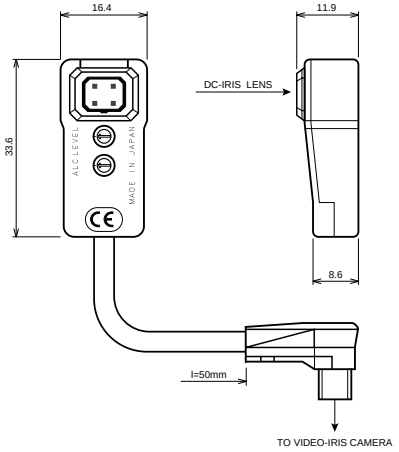
Input Impedance: High Impedance

Operation: EE Amplifier (Electronic Eye)
DC+6.5~16V : Fixed Voltage, Max 40mA
Speed Within 4 sec.

EE Accuracy: With Input Video Signal of 0.7Vp-p
Within ± of Mean Value

Operation Temperature: -10 ~ +50°C (+14 ~ 122° F)

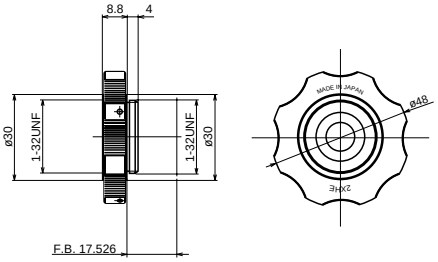
Size, Approx. Weight: 16.4 × 33.6 × 11.9mm (w/h/d), 20g
(Approx. 0.6 × 1.3 × 0.5in., 0.7oz.)



2XHE - 2X Range Extender

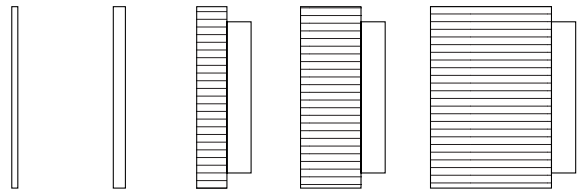
A rear conversion lens to double the focal length.
Note: will double the F-stop as well.
Will not fit lenses with a rear protrusion beyond the lens mount.

FOR USE WITH C-MOUNT LENSES ONLY



EX TUBE - Tube Extension Kit

This accessory allows you to reduce the minimum object distance on any lens for close-up viewing. These 5 metal spacers can be used alone or in combination for the desired results. *When using with a zoom lens, you will lose tracking (picture staying in focus) when zooming in and out.*

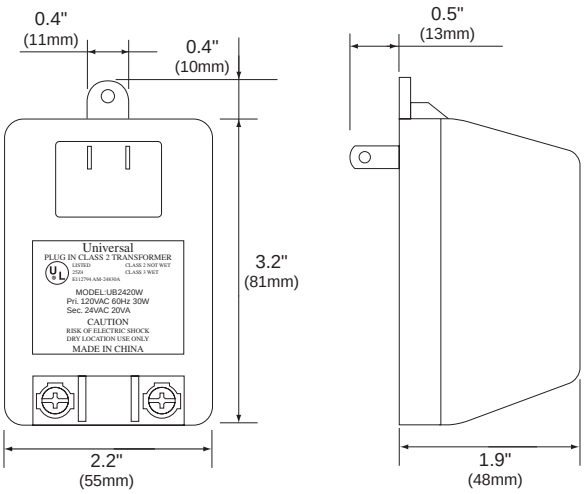


1mm 2mm 5mm 10mm 20mm

PS2420

20VA 24VAC Class 2 Plug-in Transformer

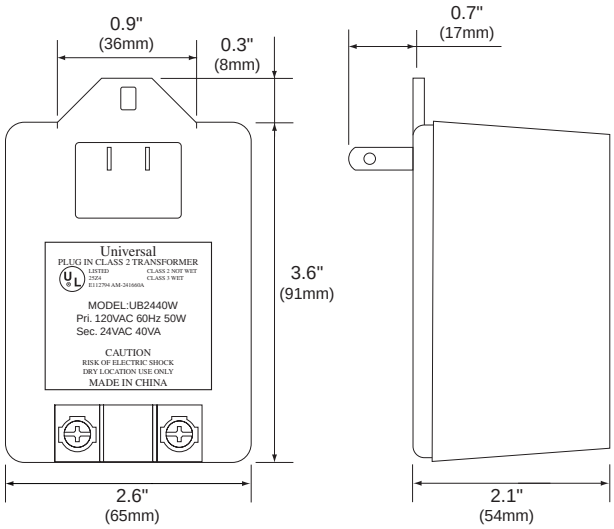
Input:	120V AC 60Hz 30W
Output:	24V AC 20VA
Enclosure:	Type AF-303, rated 94V-0 Cover and base secured by ultrasonic welding
Core:	Open type with laminated steel core
Winding:	Enamelled copper magnet wire
Certifications:	UL Approved
Operation Temperature:	-10 ~ +50°C (+14 ~ 122° F)
Size, Approx. Weight:	55 × 81 × 48mm (w/h/d), 455g (Approx. 2.2 × 3.2 × 1.9in., 1.0lb.)



PS2440

40VA 24VAC Class 2 Plug-in Transformer

Input:	120V AC 60Hz 50W
Output:	24V AC 40VA
Enclosure:	Type AF-303, rated 94V-0 Cover and base secured by ultrasonic welding
Core:	Open type with laminated steel core
Winding:	Enamelled copper magnet wire
Certifications:	UL Approved
Operation Temperature:	-10 ~ +50°C (+14 ~ 122° F)
Size, Approx. Weight:	65 × 91 × 54mm (w/h/d), 680g (Approx. 2.6 × 3.6 × 2.5in., 1.5lb.)



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Rainbow® CCTV

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Image Labs Int'l: (406) 585-7225 • (800) 785-5995 • **Fax:** (406) 586-0641
Internet: http://www.rainbowcctv.com http://www.imagelabs.com

LIST PRICING

Effective July 1, 2003

Price List Contents

LENSES - FIXED FOCAL LENGTH

1. Manual Iris, 1" Format (C-Mount)

MODEL	DESCRIPTION	PRICE
G25MWI	25mm F1.4 with focus and iris	$ 110.46
G25WI	25mm F1.4 with focus and iris (metal body)	156.22
G50WI	50mm F1.8 with focus and iris (metal body)	125.47
G75WI	75mm F1.8 with focus and iris (metal body)	212.10

2. Manual Iris, 2/3" Format (C-Mount)

MODEL	DESCRIPTION	PRICE
S48WI	4.8mm F1.8 with focus and iris	$ 92.84
S75WI	7.5mm F1.4 with focus and iris	79.80
S16WI	16mm F1.4 with focus and iris	74.42
S50WI	50mm F1.8 with focus and iris	94.50

3. Manual Iris, 1/2" Format (CS-Mount)

MODEL	DESCRIPTION	PRICE
H35CSWI	3.5mm F1.6 with focus and iris	$ 90.30
H6CSWI	6mm F1.2 with focus and iris	77.70
H12CSWI	12mm F1.2 with focus and iris	72.32

4. Manual/Fixed Iris, 1/3" Format (CS-Mount)

MODEL	DESCRIPTION	PRICE
L28CS	2.8mm F1.3 with focus and W/O iris	$ 62.48
L28CSWI	2.8mm F1.3 with focus and iris	74.55
L4CS	4mm F1.2 with focus and W/O iris	49.35
L4CSWI	4mm F1.2 with focus and iris	71.40
L8CS	8mm F1.2 with focus and W/O iris	44.10
L8CSWI	8mm F1.2 with focus and iris	69.30

5. Auto-Iris: DC-type with 4-pin, 1/2" Format (CS-Mount)

MODEL	DESCRIPTION	PRICE
L35DC4P	3.5mm F1.6 with focus	$ 176.40
L6DC4P	6mm F1.4 with focus	107.10
L12DC4P	12mm F1.4 with focus	119.70
L16DC4P	16mm F1.4 with focus	195.55
L25DC4P	25mm F1.4 with focus	249.90
L50DC4P	50mm F1.8 with focus	297.40
L75DC4P	75mm F1.8 with focus	343.60

6. Auto-Iris: DC-type with 4-pin, 1/3" Format (CS-Mount)

MODEL	DESCRIPTION	PRICE
L28DC4P	2.8mm F1.3 with focus	$ 119.70
L4DC4P	4mm F1.2 with focus	103.95
L8DC4P	8mm F1.2 with focus	94.50

7. Auto-Iris: Video-type with 4-pin, 1" Format (C-Mount)*

MODEL	DESCRIPTION	PRICE
G25E	25mm F1.4 with focus	$ 284.80
G50E	50mm F1.8 with focus	297.70
G75E	75mm F1.8 with focus	373.00

LENSES - FIXED FOCAL LENGTH (continued)

8. Auto-Iris: Video-type with 4-pin, 2/3" Format (C-Mount)*

MODEL	DESCRIPTION	PRICE
S48E	4.8mm F1.8 with focus	$ 243.81
S75E	7.5mm F1.4 with focus	212.69
S16E	16mm F1.4 with focus	215.50

9. Auto-Iris: Video-type with 4-pin, 1/2" Format (CS-Mount)*

MODEL	DESCRIPTION	PRICE
H35ECS	3.5mm F1.6 with focus	$ 189.25
H6ECS	6mm F1.2 with focus	251.03
H6GECS	6mm F1.4 with focus	152.47
H12ECS	12mm F1.2 with focus	240.03
H12GECS	12mm F1.4 with focus	130.45

10. Auto-Iris: Video-type with 4-pin, 1/3" Format (CS-Mount)*

MODEL	DESCRIPTION	PRICE
L28GECS	2.8mm F1.3 with focus	$ 168.25
L4GECS	4mm F1.4 with focus	146.16
L8GECS	8mm F1.3 with focus	136.75

LENSES - VARI-FOCAL

11. Manual Iris, (CS-Mount)

MODEL	DESCRIPTION	PRICE
L163VCS	1/3" 1.6-3.4mm F1.4 with focus and iris	$ 204.33
L2864VCS	1/3" 2.8-6.4mm F1.4 with focus and iris	82.95
L308VCS	1/3" 3-8mm F1.4 with focus and iris	62.58
L540VCS	1/3" 5-40mm F1.6 with focus and iris	221.66
L582VCS	1/3" 5.5-82.5mm F1.8 with focus and iris	304.50
L639VCS	1/3" 6.5-39mm F1.4 with focus and iris	195.30
H612VCS	1/2" 6-12mm F1.4 with focus and iris	123.90
L851VCS	1/2" 8.5-51mm F1.6 with focus and iris	195.30

12. Auto-Iris: DC-type with 4-pin, (CS-Mount)

MODEL	DESCRIPTION	PRICE
L163VDC4P	1/3" 1.6-3.4mm F1.4 with focus	$ 243.60
L2864VDC4P	1/3" 2.8-6.4mm F1.4 with focus	114.45
L212VDC4P	1/3" 2.7-12mm F1.4 with focus	125.48
L298AVDC4P	1/3" 2.9-8mm F0.95 with focus (Aspheric)	92.40
L308VDC4P	1/3" 3-8mm F1.4 with focus	70.98
L540VDC4P	1/3" 5-40mm F1.6 with focus	253.89
L550VDC4P	1/3" 5-50mm F1.45 with focus	144.90
L582VDC4P	1/3" 5.5-82.5mm F1.8 with focus	338.10
L639VDC4P	1/3" 6.5-39mm F1.4 with focus	226.80
L612VDC4P	1/2" 6-12mm F1.4 with focus	167.48
L851VDC4P	1/2" 8.5-51mm F1.6 with focus	226.80
L885VDC4P	1/2" 8.5-85mm F1.6 with focus	218.40

All prices in U.S. Dollars - F.O.B. Irvine, California

LIST PRICING — Effective July 1, 2003

LENSES - VARI-FOCAL continued

13. Auto-Iris: Video-Type With 4-pin (CS-mount)*

MODEL	DESCRIPTION	PRICE
L308VGECS**	1/3" 3-8mm F1.4 with focus	$ 80.98
L639VGECS	1/3" 6.5-39mm F1.4 with focus	310.70
H612VGECS	1/2" 6-12mm F1.4 with focus	208.15
L851VGECS	1/2" 8.5-51mm F1.6 with focus	310.70

** Consists of L308VDC4P + our DLA adapter on page 5, section 45

LENSES - ZOOM

14. Manual Zoom

MODEL	DESCRIPTION	PRICE
S6X11	2/3" 11.5-69mm F1.4	$ 331.80
H6X8	1/2" 8-48mm F1.0	310.80

15. Motorized Zoom – 1" Format

MODEL	DESCRIPTION	PRICE
G10X16M	16-160mm F2.2 – 3-motor	$1417.50
G10X16M/PZF	above with presets (Z/F)	1633.80
G10X16MEA	16-160mm F2.2 auto-iris (Video type)	1942.50
G10X16MEA/PZF	above with presets (Z/F)	2373.00

16. Motorized Zoom – 2/3" Format

MODEL	DESCRIPTION	PRICE
S6X11M-II	11.5-69mm F1.4 – 3-motor	$ 705.60
S6X11M-IIPZF	above with presets (Z/F)	1096.20
S6X11MEA-II	11.5-69mm F1.4 auto-iris (Video type)	781.20
S6X11MEA-IIPZF	above with presets (Z/F)	1192.80
S10X10M-II	10-100mm F1.4 – 3-motor	1106.70
S10X10M-IIPZF	above with presets (Z/F)	1465.80
S10X10MEA-II	10-100mm F1.4 auto-iris (Video type)	1167.60
S10X10MEA-IIPZF	above with presets (Z/F)	1575.00
S16X9.5M	9.5-152mm F1.8 – 3-motor	3517.50
S16X9.5MEA	9.5-152mm F1.8 auto-iris (Video type)	3906.00
S16X9.5MEA/PZF	above with presets (Z/F)	4956.00

17. Motorized Zoom – 1/2" Format

MODEL	DESCRIPTION	PRICE
H6X8M-II	8-48mm F1.0 – 3-motor	$ 514.25
H6X8M-IIPZF	above with presets (Z/F)	688.80
H6X8MEA-II	8-48mm F1.0 auto-iris (Video type)	737.97
H6X8MEA-IIPZF	above with presets (Z/F)	1006.52
H10X8M-II	8-80mm F1.2 – 3-motor	1039.50
H10X8M-IIPZF	above with presets (Z/F)	1323.00
H10X8MEA-II	8-80mm F1.2 auto-iris (Video type)	1155.00
H10X8MEA-IIPZF	above with presets (Z/F)	1449.00
H16X6.5M	6.5-104mm F1.4 – 3-motor	3643.50
H16X6.5MEA	6.5-104mm F1.4 auto-iris (Video type)	4048.80
H16X6.5MEA/PZF	above with presets (Z/F)	4452.00
H20X15M	15-300mm F3.6 – 3-motor	2109.03
H20X15MP	above with presets (Z/F)	2129.82
H20X15MEA	15-300mm F3.6 auto-iris (Video type)	2145.15
H20X15MEAP	above with presets (Z/F)	2678.97

LENSES - ZOOM (continued)

18. Motorized Zoom – 1/2" Format - ECO Line

MODEL	DESCRIPTION	PRICE
H10X85M	8.5-85mm F1.8 – 3-motor	$ 514.50
H10X85MP	above with presets (Z/F)	693.00
L10X85DC4P	8.5-85mm F1.8 auto-iris DC type, 4-pin	409.50
L10X85DC4PP	above with presets (Z/F)	709.00
H10X85MGE	8.5-85mm F1.8 auto-iris (Video type)	566.20

19. Motorized Zoom – 1/3" Format

MODEL	DESCRIPTION	PRICE
L6X6.5M/CS	6.5-39mm F1.0 – 3-motor	$ 536.42
L6X6.5M/CSPZF	above with presets (Z/F)	1012.62
L6X6.5MEA/CS	6.5-39mm F1.0 auto-iris (Video type)	626.44
L6X6.5MEA/CSPZF	above with presets (Z/F)	1130.72
L10X6M/CS	6-60mm F1.0 – 3-motor	1026.90
L10X6MEA/CS	6-60mm F1.0 auto-iris (Video type)	1134.00
L10X6MEA/CSPZF	above with presets (Z/F)	1428.00

20. Motorized Zoom – 1/3" Format - ECO Line

MODEL	DESCRIPTION	PRICE
L10X65MCS	6.5-65mm F1.4 – 3-motor	$ 514.50
L10X65MCSP	above with presets (Z/F)	693.00
L10X65DC4P	6.5-65mm F1.4 auto-iris DC type, 4-pin	409.50
L10X65MGECS	6.5-65mm F1.4 auto-iris (Video type)	566.20
L10X65MGECSP	above with presets (Z/F)	746.80

LENSES - SPECIALTY

21. Pinhole - Straight

MODEL	DESCRIPTION	PRICE
H6PWI	1/2" 6mm F2.0 with iris, focus (C)	$ 388.50
L4PCSWI	1/3" 4mm F2.0 with iris, focus (CS)	325.50

*Video Type with 4-pin Wiring Information

These models include the 4-pin connector for camera brands that support Video type lenses and use the standard wiring (Rainbow, Panasonic, Sanyo, Sony, etc.)

Connector wiring: **Pin 1**–Power, **Pin 2**–N.C., **Pin 3**–Video, **Pin 4**–Ground

Note: Some camera brands (incl. Everfocus, Hitachi, Javelin, Watec) use the same 4-pin connector with non-standard wiring, please indicate the make/model of the camera when ordering. We will re-wire the lens at no charge.

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CAMERAS

22. Standard

MODEL	DESCRIPTION	PRICE
BL58D	B&W 580 lines, BLC, EI, 12/24V (EIA)	$ 228.14
CLD33D	Color DSP 330 lines, BLC, EI, 12/24V (NTSC)	279.22
CLD46D	Color DSP 460 lines, BLC, EI, 12/24V (NTSC)	347.30

Can use 24VAC transformer model PS2440 or PS2420 on page 5, section 46.
• **3-year warranty** • Backfocus Mode™ for one touch backfocusing

ECL3824	Color DSP 380 lines, BLC, EI, 24V (NTSC)	199.50

Can use 24VAC transformer model PS2440 or PS2420 on page 5, section 46.
• Economical • Sony Super HAD CCD™ • **3-year warranty**

23. Day/Night/IR

MODEL	DESCRIPTION	PRICE
DNL33D	Day/Night 330 lines, BLC, EI, 12/24V (NTSC)	$ 459.90
DNL46D	Day/Night 460 lines, BLC, EI, 12/24V (NTSC)	$ 532.14

Can use 24VAC transformer model PS2440 or PS2420 on page 5, section 46.

• Intelligent switching from Color to B&W • Excellent IR sensitivity • Sony ExView CCD™
• **3-year warranty** • Backfocus Mode™ for one touch backfocusing • No moving parts

24. Bullet

MODEL	DESCRIPTION	PRICE
BB33W	1/3" B&W 420 lines, 33° FOV (EIA)	$ 157.50
BBI33W	above in Ivory color housing	157.50
BB70W	1/3" B&W 420 lines, 70° FOV (EIA)	157.50
BBI70W	above in Ivory color housing	157.50
BC33W	1/3" Color DSP 380 lines, 33° FOV (NTSC)	315.00
BCI33W	above in Ivory color housing	315.00
BC70W	1/3" Color DSP 380 lines, 70° FOV (NTSC)	315.00
BCI70W	above in Ivory color housing	315.00

Bullet cameras are 12VDC with weatherproof housing and include 1/4-20 swivel mount and UL approved 12V plug-in power supply. Video connector is BNC type. 3' cable.

25. Bullet with IR

MODEL	DESCRIPTION	PRICE
BB70WIRC	1/3" B&W 420 lines 15' range (EIA)	$ 258.30
BC70WIR	1/3" Color DSP 380 lines, 40' range (NTSC)	395.93
BC70WIRC	with 940nm covert LED's 15' range (NTSC)	405.30

Weatherproof, 4' cable, 3.6mm lens (70° FOV). Includes mount and 12V plug-in power supply.

26. Bullet with Vari-Focal

MODEL	DESCRIPTION	PRICE
BCVF4W	1/3" Color DSP 380 lines, 4~9mm (NTSC)	$ 331.17

Weatherproof, 4' cable. Includes mount and 12V plug-in power supply.

DOME CAMERAS

27. Vari-Cubes: Cube Cameras with Vari-Focal

MODEL	DESCRIPTION	PRICE
CBV3	1/3" B&W 420 lines, 3~8mm (EIA)	$ 202.55
CCV3	1/3" Color DSP 380 lines, 3~8mm (NTSC)	328.97

Indoor, includes mount and 12V plug-in power supply. Video connector is BNC type. 3' cable.

28. Mini-Dome, 1/3"

MODEL	DESCRIPTION	PRICE
MDB70	B&W 380 lines, 3.6mm lens 12V	$ 91.88
MDB70PS	above with 12V power supply	$ 104.48
MDC70	Color 350 lines, 3.6mm lens 12V	$ 175.88
MDC70PS	above with 12V power supply	$ 190.58

Domes are 12VDC for indoor use. Video connector is BNC type.

Extension cable for Bullet/Dome/Vari-Cube Cameras

MODEL	DESCRIPTION	PRICE
EC60PV	60' ext. cable w/ BNC-Power connectors (not for high impact dome cameras)	$ 31.50

29. High Impact Dome

MODEL	DESCRIPTION	PRICE
HDB4236AC	B&W 420 lines, 3.6mm lens 12/24V (EIA)	$ 678.20
HDC3336AC	Color 330 lines, 3.6mm lens 12/24V (NTSC)	852.98

Additional lens options: substitute "36" in model with: 06=6mm 08=8mm 12=12mm

Domes are vandal resistant, hammer-tough, weatherproof and power protected. Can use 24VAC transformer model PS2440 or PS2420 on page 5, section 46.

IR CAMERAS

30. IR Illuminator Camera with Maximum Security Enclosure

MODEL	DESCRIPTION	PRICE
IC10524	B&W IR cam, 420 lines, 850nm, 24VAC	$1207.50
IC10524C	B&W IR cam, 420 lines, 940nm, 24VAC	1207.50

View the entire room including below the camera. Indoor use only. Can use 24VAC transformer model PS2440 on page 5, section 46. Color/BW (day/night) version available. Call for pricing.

31. IR Illuminator Camera with Enclosure

MODEL	DESCRIPTION	PRICE
IRC7024	Corner mount, 420 lines, 850nm, 24VAC	$1051.37
IRC7024C	Corner mount, 420 lines, 940nm, 24VAC	1051.37
IRW7024	Wall mount, 420 lines, 850nm, 24VAC	1051.37
IRW7024C	Wall mount, 420 lines, 940nm, 24VAC	1051.37

Total darkness surveillance up to 50 feet. Includes 60 LED illuminators, B&W camera, 70° field of view. Indoor use only. Can use 24VAC transformer model PS2440 on page 5, section 46.

32. IR Illuminator Camera in High-Impact Dome

MODEL	DESCRIPTION	PRICE
HDI836AH	B&W 420 lines, 3.6mm, 850nm (EIA)	$ 953.40
HDI936AH	B&W 420 lines, 3.6mm, 940nm (EIA)	953.40

Additional lens options: substitute "36" in model with: 06=6mm 08=8mm
Total darkness surveillance up to 25 feet. 12VDC/24VAC operation. Hammer-tough, weatherproof housing. Can use 24VAC transformer model PS2440 on page 5, section 46.

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COMBO SERIES

33. B&W Camera/Lens Combination - High Resolution
Camera: 580 lines, 0.06 lux, 12/24V (Rainbow model BL58D)

Combo with: Manual Iris Vari-Focal Lens		
BL58VM3	B/W 580 lines with 3-8mm manual iris	$ 290.72
BL58VM5	B/W 580 lines with 5-40mm manual iris	449.80
BL58VM65	B/W 580 lines with 6.5-39mm manual iris	423.44
BL58VM85	B/W 580 lines with 8.5-51mm manual iris	423.44
Combo with: DC Auto-Iris Vari-Focal Lens		
BL58VD3	B/W 580 lines with 3-8mm DC auto-iris	$ 299.12
BL58VD5	B/W 580 lines with 5-50mm DC auto-iris	373.04
BL58VD65	B/W 580 lines with 6.5-39mm DC auto-iris	454.94
BL58VD85	B/W 580 lines with 8.5-51mm DC auto-iris	454.94

34. Color DSP Camera/Lens Combination
Camera: 330 lines, 0.2 lux, 12/24V (Rainbow model CLD33D)

Combo with: Manual Iris Vari-Focal Lens		
CL33VM3	Color 330 lines with 3-8mm manual iris	$ 341.80
CL33VM5	Color 330 lines with 5-40mm manual iris	500.88
CL33VM65	Color 330 lines with 6.5-39mm manual iris	474.52
CL33VM85	Color 330 lines with 8.5-51mm manual iris	474.52
Combo with: DC Auto-Iris Vari-Focal Lens		
CL33VD3	Color 330 lines with 3-8mm DC auto-iris	$ 350.20
CL33VD5	Color 330 lines with 5-50mm DC auto-iris	424.12
CL33VD65	Color 330 lines with 6.5-39mm DC auto-iris	506.02
CL33VD85	Color 330 lines with 8.5-51mm DC auto-iris	506.02

35. Color DSP Camera/Lens Combination - High Resolution
Camera: 460 lines, 0.3 lux, 12/24V (Rainbow model CLD46D)

Combo with: Manual Iris Vari-Focal Lens		
CL46VM3	Color 460 lines with 3-8mm manual iris	$ 409.88
CL46VM5	Color 460 lines with 5-40mm manual iris	568.96
CL46VM65	Color 460 lines with 6.5-39mm manual iris	542.60
CL46VM85	Color 460 lines with 8.5-51mm manual iris	542.60
Combo with: DC Auto-Iris Vari-Focal Lens		
CL46VD3	Color 460 lines with 3-8mm DC auto-iris	$ 418.28
CL46VD5	Color 460 lines with 5-50mm DC auto-iris	492.20
CL46VD65	Color 460 lines with 6.5-39mm DC auto-iris	574.10
CL46VD85	Color 460 lines with 8.5-51mm DC auto-iris	574.10

Combos can use 24VAC transformer model PS2440 or PS2420 on page 5, section 46.
We can install any of our lenses onto our cameras at no extra charge.
Combos are bench tested and ready to install.

QUAD PROCESSORS

36. Quad Processors, Real Time, High Resolution

MODEL	DESCRIPTION	PRICE
QPBF	B&W, 12VDC power supply included	$ 208.43
QPCF	Color, 12VDC power supply included	352.28

Connect up to 4 cameras and 1 VCR. Quad and switching outputs. On Screen Display. Alarm inputs/output. System auto-detection (NTSC/PAL or EIA/CCIR).

INFRARED ILLUMINATORS

37. UF500 Series - High Performance

MODEL	DESCRIPTION	PRICE
UF500173	10 degree narrow beam, 730nm	$1332.77
UF500183	10 degree narrow beam, 830nm	1332.77
UF500195 *	10 degree narrow beam, 950nm (covert)	1403.85
UF500373	30 degree medium beam, 730nm	1332.77
UF500383	30 degree medium beam, 830nm	1332.77
UF500395 *	30 degree medium beam, 950nm (covert)	1403.85
UF500673	60 degree wide beam, 730nm	1332.77
UF500683	60 degree wide beam, 830nm	1332.77
UF500695 *	60 degree wide beam, 950nm (covert)	1403.85
UF500PSS	Power supply for 1 UF500 - 120V-28V	316.89
UF500PSD	Power supply for 2 UF500 - 120V-28V	419.65
UF500BULB	UF500 replacement bulb	163.80
UF500MBD	T-bar adapter to mount 2 UF500's to pan/tilt	126.00

High output, balanced illumination up to 460 feet. Weatherproof housing. UF500 power supply listed above is REQUIRED. 3,000 hour average bulb life.

38. UF100 Series - Compact "Mini Flood"

MODEL	DESCRIPTION	PRICE
UF100173	10 degree narrow beam, 730nm	$ 755.16
UF100183	10 degree narrow beam, 830nm	755.16
UF100195 *	10 degree narrow beam, 950nm (covert)	755.16
UF100373	30 degree medium beam, 730nm	755.16
UF100383	30 degree medium beam, 830nm	755.16
UF100395 *	30 degree medium beam, 950nm (covert)	755.16
UF100673	60 degree wide beam, 730nm	755.16
UF100683	60 degree wide beam, 830nm	755.16
UF100695 *	60 degree wide beam, 950nm (covert)	755.16
UF100PSS	Power supply for 1 UF100 - 120V-12V	287.28
UF100PSD	Power supply for 2 UF100 - 120V-12V	385.04
UF100PS24	Power supply for 1 UF100 - 24V-12V	287.28
UF100BULB	UF100 replacement bulb	136.50

High output up to 150+ feet. Compact, weatherproof aluminum housing. Use UF100 power supply listed above. 8,000 hour average bulb life.

39. UFL Series - LED

MODEL	DESCRIPTION	PRICE
UFL385	30 degree, 850nm, 12VDC/24VAC	$ 799.60
UFL394 *	30 degree, 940nm (covert), 12VDC/24VAC	799.60
UFL685	60 degree, 850nm, 12VDC/24VAC	799.60
UFL694 *	60 degree, 940nm (covert), 12VDC/24VAC	799.60

Illumination up to 75 feet. Weatherproof. 60 high performance LED's. Photocell controlled for auto operation. Can use 24VAC transformer model PS2440 on page 5, section 46.

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INFRARED ILLUMINATORS (continued)

40. IRLC Series - Compact "Cube" LED

MODEL	DESCRIPTION	PRICE
IRLC385	30 degree, 850nm, 12VDC/24VAC	$ 462.00
IRLC394 *	30 degree, 940nm (covert), 12VDC/24VAC	462.00
IRLC685	60 degree, 850nm, 12VDC/24VAC	462.00
IRLC694 *	60 degree, 940nm (covert), 12VDC/24VAC	462.00

Illumination up to 50 feet. Weatherproof CNC machined aluminum housing. Compact size of under 3". 42 high performance LED's. Photocell controlled for auto operation. Can use 24VAC transformer model PS2440 on page 5, section 46.

41. IRL Series - High-Impact Dome LED

MODEL	DESCRIPTION	PRICE
IRL285A	20 degree, 850nm, 12VDC/24VAC	$ 693.00
IRL294A *	20 degree, 940nm (covert), 12VDC/24VAC	693.00
IRL585A	50 degree, 850nm, 12VDC/24VAC	693.00
IRL594A *	50 degree, 940nm (covert), 12VDC/24VAC	693.00

Illumination up to 50 feet. Vandal resistant weatherproof CNC machined aluminum base and clear polycarbonate dome. Compact 4.6" diameter. 42 high performance LED's. Can use 24VAC transformer model PS2440 on page 5, section 46.

** Covert models can lose up to 60% of the rated distance using standard cameras. Rainbow's day/night cameras are recommended , see page 3, section 23 .*

MONITORS

42. Black & White

MODEL	DESCRIPTION	PRICE
RMB92	9" 1000 lines (EIA/CCIR)	$ 178.50
RMB122	12" 1000 lines (EIA/CCIR)	199.50
RMB15	15" 1000 lines (EIA)	315.00

43. Color

MODEL	DESCRIPTION	PRICE
RMC10	10" 350 lines (NTSC/PAL)	$ 438.90
RMC14	14" 350 lines S-Video (NTSC/PAL)	438.90

UL, CE approved, built-in carrying handles, metal housing. All monitor models are dual system (EIA/CCIR or NTSC/PAL) 90~240VAC 50/60Hz and can be used worldwide.

ACCESSORIES

44. Lens Accessories

MODEL	DESCRIPTION	PRICE
CS/C	CS-mount to C-mount adaptor	$ 10.25
2XHE	2X extender (C-mount lenses only)	88.25
2.5XE	2.5X extender (S16X9.5 zoom only)	292.00
0.7XWC	0.7X wide converter for our 6X zooms	159.00
EX TUBE	Tube extension kit for close-up viewing	46.25
4652SUR	46mm to 52mm Step Up Ring	25.20
DLA	DC lens to Video camera adapter	21.00

45. Lens Controller

MODEL	DESCRIPTION	PRICE
LCA4	Desktop controller for single zoom lens	$ 250.83

46. Transformers and AC Adapters

MODEL	DESCRIPTION	PRICE
PS2420	24VAC 20VA Transformer	$ 9.45
PS2440	24VAC 40VA Transformer	11.97
PS121A	12VDC 1A, with 2.1mm plug	23.10

MOUNTS

47. 6" Universal - 12-in-1

MODEL	DESCRIPTION	PRICE
UM6I	6" universal mount, Ivory	$ 18.94
UM6B	6" universal mount, Black	18.94

Ideal for mounting all types of equipment including our standard, cube, and bullet cameras. Wall mount plate and drop-ceiling clip are supplied. Up to 12 combinations are possible.

All prices in U.S. Dollars - F.O.B. Irvine, California

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LENS APPLICATION GUIDE

APPROXIMATE FIELD OF VIEW FOR THE MOST COMMONLY USED LENSES

1/3" Format Camera

LENS MODEL	FOCAL LENGTH	5 FEET W × H IN FEET	10 FEET W × H IN FEET	20 FEET W × H IN FEET	40 FEET W × H IN FEET	50 FEET W × H IN FEET	100 FEET W × H IN FEET
L28CSWI	2.8mm	8.6 × 6.4	17.1 × 12.9	34.3 × 25.7	68.6 × 51.4	85.7 × 64.3	171.4 × 128.6
H35CSWI	3.5mm	6.9 × 5.1	13.7 × 10.3	27.4 × 20.6	54.9 × 41.1	68.6 × 51.4	137.1 × 102.9
L4CSWI	4mm	6.0 × 4.5	12.0 × 9.0	24.0 × 18.0	48.0 × 36.0	60.0 × 45.0	120.0 × 90.0
H6CSWI	6mm	4.0 × 3.0	8.0 × 6.0	16.0 × 12.0	32.0 × 24.0	40.0 × 30.0	80.0 × 60.0
L8CSWI	8mm	3.0 × 2.3	6.0 × 4.5	12.0 × 9.0	24.0 × 18.0	30.0 × 22.5	60.0 × 45.0
H12CSWI	12mm	2.0 × 1.5	4.0 × 3.0	8.0 × 6.0	16.0 × 12.0	20.0 × 15.0	40.0 × 30.0
S16WI	16mm	1.5 × 1.1	3.0 × 2.3	6.0 × 4.5	12.0 × 9.0	15.0 × 11.3	30.0 × 22.5
G25WI	25mm	1.0 × 0.7	1.9 × 1.4	3.8 × 2.9	7.7 × 5.8	9.6 × 7.2	19.2 × 14.4
S50WI	50mm	0.5 × 0.4	1.0 × 0.7	1.9 × 1.4	3.8 × 2.9	4.8 × 3.6	9.6 × 7.2
G75WI	75mm	0.3 × 0.2	0.6 × 0.5	1.3 × 1.0	2.6 × 1.9	3 .0 × 2.4	6.4 × 4.8
L540 Series	@ 5mm	4.8 × 3.6	9.6 × 7.2	19.2 × 14.4	38.4 × 28.8	48.0 × 36.0	96.0 × 72.0
	@ 40mm	0.6 × 0.5	1.2 × 0.9	2.4 × 1.8	4.8 × 3.6	6.0 × 4.5	12.0 × 9.0
L10X6 Series	@ 6mm	4.0 × 3.0	8.0 × 6.0	16.0 × 12.0	32 × 24	40.0 × 30.0	80.0 × 60.0
	@ 60mm	0.4 × 0.3	0.8 × 0.6	1.6 × 1.2	3.2 × 2.4	4.0 × 3.0	8.0 × 6.0

1/4" Format Camera

FOCAL LENGTH	5 FEET W × H IN FEET	10 FEET W × H IN FEET	20 FEET W × H IN FEET	40 FEET W × H IN FEET	50 FEET W × H IN FEET	100 FEET W × H IN FEET
2.5mm	7.2 × 5.4	14.4 × 10.8	28.8 × 21.6	57.6 × 43.2	72.0 × 54.0	144.0 × 108.0
3mm	6.0 × 4.5	12.0 × 9.0	24.0 × 18.0	48.0 × 36.0	60.0 × 45.0	120.0 × 90.0
6mm	3.0 × 2.6	6.0 × 4.5	12.0 × 9.0	24.0 × 18.0	30.0 × 22.5	60.0 × 45.0
8mm	2.3 × 1.7	4.5 × 3.4	9.0 × 6.8	18.0 × 13.5	22.5 × 16.9	45.0 × 33.8
16mm	1.1 × 0.8	2.3 × 1.7	4.5 × 3.4	9.0 × 6.8	11.3 × 8.4	22.5 × 16.8
50mm	0.4 × 0.3	0.7 × 0.5	1.5 × 1.1	2.9 × 2.2	3.6 × 2.7	7.2 × 5.4
@ 5mm	3.6 × 2.7	7.2 × 5.4	14.4 × 10.8	28.8 × 21.6	36.0 × 27.0	72.0 × 54.0
@ 40mm	0.5 × 0 .3	0.9 × 0.7	1.8 × 1.4	3.6 × 2.8	4.5 × 3.4	9.0 × 6.8
@ 6mm	3.0 × 2.6	6.0 × 4.5	12.0 × 9.0	24.0 × 18.0	30.0 × 22.5	60.0 × 45.0
@ 60mm	0.3 × 0.2	0.6 × 0.5	1.2 × 0.9	2.4 × 1.8	3.0 × 2.3	6.0 × 4.5

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2/3" Format Camera

LENS MODEL	FOCAL LENGTH	5 FEET W × H IN FEET	10 FEET W × H IN FEET	20 FEET W × H IN FEET	40 FEET W × H IN FEET	50 FEET W × H IN FEET	100 FEET W × H IN FEET
S48WI	4.8mm	9.2 × 6.9	18.3 × 13.8	36.7 × 27.5	73.3 × 55	91.7 × 68.8	183.3 × 137.5
S75WI	7.5mm	5.9 × 4.4	11.7 × 8.8	23.5 × 17.6	46.9 × 35.2	58.7 × 44	117.3 × 88
S16WI	16mm	2.8 × 2.1	5.5 × 4.1	11 × 8.3	22 × 16.5	27.5 × 20.6	55 × 41.3
G25WI	25mm	1.8 × 1.3	3.5 × 2.6	7 × 5.3	14.1 × 10.6	17.6 × 13.2	35.2 × 26.4
G50WI	50mm	.9 × .7	1.8 × 1.3	3.5 × 2.6	7 × 5.3	8.8 × 6.6	17.6 × 13.2
G75WI	75mm	.6 × .4	1.2 × .9	2.3 × 1.8	4.7 × 3.5	5.9 × 4.4	11.7 × 8.8
S6X11 Series	@11.5mm	3.8 × 2.9	7.7 × 5.7	15.3 × 11.5	30.6 × 23.0	38.3 × 28.7	76.5 × 57.4
	@69mm	.6 × .5	1.3 × 1	2.6 × 1.9	5.1 × 3.8	6.4 × 4.8	12.8 × 9.6
S10X10 Series	@10mm	4.2 × 3.1	8.4 × 6.3	10.8 × 8.1	32.5 × 24.5	41.5 × 31.3	85 × 62.5
	@100mm	.4 × .3	.8 × .6	1.1 × .8	3.3 × 2.5	4.2 × 3.1	8.5 × 6.3

1/2" Format Camera

LENS MODEL	FOCAL LENGTH	5 FEET W × H IN FEET	10 FEET W × H IN FEET	20 FEET W × H IN FEET	40 FEET W × H IN FEET	50 FEET W × H IN FEET	100 FEET W × H IN FEET
H35CSWI	3.5mm	9.1 × 6.9	18.3 × 13.7	36.6 × 27.4	73.1 × 54.9	91.4 × 68.6	182.9 × 137.1
H6CSWI	6mm	5.3 × 4	10.7 × 8	21.3 × 16	42.7 × 32	53.3 × 40	106.7 × 80
S75CSWI	7.5mm	4 × 3	8 × 6	16 × 12	32 × 24	40 × 30	80 × 60
H12CSWI	12mm	2.7 × 2	5.3 × 4	10.7 × 8	21.3 × 16	26.7 × 20	53.3 × 40
S16WI	16mm	2 × 1.5	4 × 3	8 × 6	16 × 12	20 × 15	40 × 30
G25WI	25mm	1.3 × 1	2.6 × 1.9	5.1 × 3.8	10.2 × 7.7	12.8 × 9.6	25.6 × 19.2
G50WI	50mm	.6 × .5	1.3 × .1	2.6 × 1.9	5.1 × 3.8	6.4 × 4.8	12.8 × 9.6
G75WI	75mm	.4 × .3	.9 × .6	1.7 × 1.3	3.4 × 2.6	4.3 × 3.2	8.5 × 6.4
H6X8 Series	@8mm	4 × 3	8 × 6	16 × 12	32 × 24	40 × 30	80 × 60
	@48mm	.7 × .5	1.3 × 1	2.7 × 2	5.3 × 4	6.7 × 5	13.3 × 10
H10X8 Series	@8mm	4 × 3	8 × 6	16 × 12	32 × 24	40 × 30	80 × 60
	@80mm	.4 × .3	.8 × .6	1.6 × 1.2	3.2 × 2.4	4 × 3	8 × 6

Guidelines For Trading Down Lenses:

1. 1" format lenses may be used with 1", 2/3", 1/2", 1/3", and 1/4" cameras
2. 2/3" format lenses may be used with 2/3", 1/2", 1/3", and 1/4" cameras
3. 1/2" format lenses may be used with 1/2", 1/3", and 1/4" cameras
4. 1/3" format lenses may be used with 1/3" and 1/4" cameras
5. 1/4" format lenses may be used only with 1/4" cameras

The Following Lens/Camera Combinations Will Have The Same Field Of View:

1. 25mm 1" format lens on a 1" camera
2. 16mm 2/3" format lens on a 2/3" camera
3. 12mm 1/2" format lens on a 1/2" camera
4. 8mm 1/3" format lens on a 1/3" camera
5. 6mm 1/4" format lens on a 1/4" camera

ALC CONTROL: Photometric control, measures light intensity. Sets the iris to react to bright objects in a picture that do not affect the overall video level. Turning the control towards Peak will increase sensitivity, towards Average will decrease sensitivity.

ANGLE OF VIEW: The angular range that can be focused within the image size. Small focal lengths give a wide angle of view, and large focal lengths give a narrow angle of view. Sometimes referred to as Field of View.

APERTURE: Relates to the F-number. The effective aperture of a lens is not its actual diameter but the diameter of the image of the iris seen from the front of the lens. Larger apertures equal smaller F-number.

AUTO-IRIS LENS: A lens with an electrically controlled iris. The circuit controlling the iris is set to maintain a constant video level in varying lighting conditions.

CCTV: Acronym for Closed Circuit Television.

CCVE: Acronym for Closed Circuit Video Equipment.

C-MOUNT: "C-mount" lenses have a flange back distance of 17.526mm vs. 12.5mm for "CS-mount" lenses. C-mount lenses can be used on CS-mount cameras by utilizing a 5mm adapter or adjusting the camera for C-mount lenses.

CS-MOUNT: "CS-mount" lenses have a flange back distance of 12.5mm vs. 17.526mm for "C-mount" lenses. Because of the shorter back focal distance, CS-mount lenses can only be used on CS-mount cameras. Your picture will be out of focus if you use a CS-mount lens on a C-mount camera.

DC TYPE LENS: An auto-iris lens without an internal circuit to control the iris. All iris control voltages come from a circuit located within the camera.

DEPTH OF FIELD (FOCUS): The zone in the front and back of the area focused upon that will remain in focus. Anything within this depth of field will appear sharp. Depth of field has the following features: **1.** Larger F-numbers give greater depth of field. The more the iris is stopped down the greater the depth of field. **2.** Shorter focal lengths give greater depth of field. **3.** Greater subject distance gives greater depth of field. **4.** Depth of field is greater behind the subject than in front.

EXTENSION TUBE: Kit consisting of various size spacers that are used between the lens and the camera to reduce the lens M.O.D. Generally used for very close-up applications. Not recommended for zoom lenses due to loss of tracking.

F-DROP: The drop of the F-number of a while zooming at full aperture. The entrance pupil of a zoom lens changes in diameter as the focal length is changed. As you zoom towards the telephoto end, the entrance pupil gradually enlarges. When the entrance pupil diameter is equal to the diameter of the focusing lens group, it cannot become any larger. This causes the F-drop.

F-NUMBER: Indicates the brightness of an image formed by the lens. A smaller F-number means a brighter image.

FIELD OF VIEW: See Angle of View.

FOCAL LENGTH: The basic parameter to determine the image position, magnification, and angle of view of a lens.

GAIN CONTROL: Reduces iris oscillation (iris opens and closes rapidly in bright light). If oscillation occurs, adjust CCW until iris stops oscillating.

IMAGE SIZE: Reference to the size of an image formed by the lens onto the camera pick-up device. The current standards are 1", 2/3", 1/2", 1/3", and 1/4" measured diagonally.

LEVEL CONTROL: Main iris control. Used to set the auto-iris circuit to a video level desired by the user. After set-up, the circuit will adjust the iris to maintain this video level in changing lighting conditions. Turning the control towards High will open the iris, towards Low will close the iris.

MANUAL IRIS LENS: A lens with a manual adjustment to set the iris opening (F stop) in a fixed position. Generally used for fixed lighting applications.

MECHANICAL BACK FOCAL DISTANCE (FLANGE BACK): The distance from the flange of the lens (beginning of the lens mount) to the focal plane. C-mount lenses have a flange back distance of 17.526mm vs. 12.5mm for CS-mount.

MINIMUM OBJECT DISTANCE (M.O.D.): The closest distance a given lens will be able to focus upon an object. This is measured from the vertex (front) of the lens to the object. Wide angle lenses generally have a smaller M.O.D. than large focal length lenses.

OPTICAL BACK FOCAL DISTANCE: The distance from the rear most portion of the lens glass to the image plane.

PINHOLE LENS: Lens used for applications where the camera/lens must be hidden. Front of lens has a small opening to allow the lens to view an entire room through a small hole in a wall.

PRE-POSITION LENSES (PZF): Zoom lenses which utilize a variable-resistor (potentiometer) to indicate zoom/focus position to the lens controller. After initial set-up, this allows the operator to view different pre-set areas quickly without having to readjust the zoom and focus each time.

SLIP CLUTCH: A part of the lens mounts which allows the lens position to be adjusted to a desired position after the lens is mounted. The lens will turn (slip) up to 350^{o} until reaching a physical limit.

SPOT FILTER: A supplement to the iris which allows the lens to have a larger F-number than is physically possible with the iris only. These usually range from F88 to F1600. This allows very sensitive cameras to view bright scenes easily. The iris of a lens without a spot filter would not be able to close down enough in bright light to achieve a usable picture.

T-NUMBER: An F-number expresses the speed of the lens on the assumption that the lens transmits 100% of the incident light. In reality, different lenses have different transmittance, so lenses with the same F-number may actually have different speeds. The T-number solves this by taking both the iris diameter and transmittance into account. Two lenses with the same T-number will always give the same image brightness.

TRACKING: A zoom lens' ability to remain in focus during the entire zoom range from wide angle to telephoto position.

VIDEO TYPE LENS: An auto-iris lens with internal circuit which receives voltage and a video signal from the camera to adjust the iris.

ZOOM LENS: A lens with a variable focal length to obtain a wide angle picture to a narrow angle picture to cover a variety of needs.

ZOOM RATIO: The ratio of the starting focal length (wide position) to the ending focal length (telephoto position) of a zoom lens. A lens with a 10X zoom ratio will magnify the image at the wide angle end by 10 times when at the telephoto position.

When installing a zoom lens on a camera, you may find that the lens cannot be focused at either end of the zoom range. If this problem occurs, you may need to adjust the camera back focus. By adjusting the back focus, you are changing the position of the pick-up device in relation to the rear of the lens. This procedure can also be performed for fixed focal length lenses (ignoring the references to zooming).

Procedure

1. Determine the lens and camera mount types are compatible. CS-mount to CS-mount, or C-mount to C-mount. C-mount lenses can be mounted on CS-mount cameras by using a 5mm adaptor normally supplied with the camera (some cameras have a lens mount adjustable between C and CS)

2. Set up subject or test pattern 25 feet or more away from the camera. If this is not possible, choose the farthest object from the camera.

3. ***Important***, set the iris at wide open. This can be achieved by adjusting the lens iris ring (manual iris), lens Level control (Video type lens), or camera Level control (DC type lens). If the scene is too bright reduce illumination or use a filter to reduce the amount of light coming into the lens or if the camera has an Automatic Electronic Shutter, temporarily turn this on. If the iris is not set all the way open, objects that are in focus during the day may fall out of focus during nighttime viewing.

4. Adjust the focus at extreme far.

5. Adjust the zoom to extreme wide angle.

6. Camera backfocus adjustment is achieved by adjusting one of the following: A rotating lens mount held by a set screw(s), an adjustable ring to move the pick-up device back and forth, or a backfocus screw on the camera.

7. Adjust the backfocus to obtain a clear picture.

8. Adjust the zoom to extreme telephoto.

9. Using the lens controller, adjust the lens for best focus. ***Do not adjust the camera****!*

10. Adjust lens back to extreme wide angle.

11. Readjust the camera for a clear picture if necessary.

12. Tighten the pick-up device or camera lens mount set screw to ensure it does not change position. If you turned the Automatic Electronic Shutter on, ***turn this off***. Adjust the Level control back for a good picture.

13. Focus should remain clear throughout the zoom range.

USING THE CALCULATOR

1. Determine the area of coverage required.
2. Determine camera format (2/3", 1/2", 1/3", or 1/4").
3. Align the wheel of the calculator to the object distance. If possible, calculate the actual viewing distance with the formula below. (This formula takes into consideration camera height as well).
4. Adjust the field of view cursor (plastic piece) to the horizontal and vertical dimensions required.
5. The line on the cursor that indicates your camera format will indicate the required focal length.
6. Use the Rainbow notebook to determine the closest appropriate focal length and its part number.
7. Start with lenses that match you camera format first.
8. If the focal length that you require is not listed, check the focal lengths of the lenses offered in the formats *larger* than the camera you are working with.
9. Do not concern yourself with the larger format. If the calculator indicates you need a 50mm lens on a 1/3" camera, use the 1" format 50mm. The calculator will automatically adjust for the different camera/lens formats.

FORMULAS

Calculating the Actual Viewing Distance:

$C = \sqrt{A^2 + B^2}$

A = Distance to subject
B = Height of camera
C = Actual viewing distance

Calculating the Focal Length:

Focal length = (object distance X horizontal image size) / width

Ex: Object is 12 ft. away
Using a 1/2" camera (6.4 horizontal image size)
20 ft horizontal picture required
F = 12 X 6.4 / 20

F = 3.84mm - closet focal length available is 3.5mm

Calculating Object Dimensions for Focal Length:

X = (object distance X horizontal image size) / focal length

Ex: Object is 400 ft. away
Using a 1/3" camera (4.8 horizontal image size)
160mm zoom lens
X = 400 X 4.8 / 160

X = 12 ft. horizontal picture

Before checking the lens adjustments, confirm the following:

1. Camera has power and is operating. Use a manual iris lens if possible to confirm there is a picture.
2. Monitor has power and is turned on.
3. Adjust the monitor contrast control.
4. Double check the BNC connections at the monitor and camera for proper connections.
5. If video is not looped through the monitor, verify that the 75W termination is ON.

If you are still having problems, check the following:

1. Camera and lens are using the same mounts. (CS-mount to CS-mount, C-mount to C-mount).
2. Adjust the LEVEL control. (See adjustment procedure below).
3. If the camera has an automatic shutter feature, turn this OFF.
4. Verify that a Video or DC type lens are compatible with the camera and that the correct cable assembly is being used. (If lens is E-II/GE-II type use cable assembly beginning with CA, G-II type use cable assembly beginning with DCCA).
5. Verify that the auto iris connector to the camera is wired correctly. If using a cable assembly, make sure the connector marked LENS is inserted into the lens.
6. Measure voltage from the camera to the lens for 8.5-15VDC.
7. Measure the video signal from the camera to the lens . Signal should be 500mv - 1.5V p.p. composite or non-composite signal. (Oscilloscope required).

Lens Adjustments

1. Place all potentiometers in the mid-range position if they have been adjusted before.
2. Adjust the LEVEL control (potentiometer) for the optimum picture. Place your hand over the front of the lens for a few seconds (allow the iris to open) and remove your hand. Verify that the picture returns to where you set it with the LEVEL control.
3. Adjust the ALC towards Pk if you want the lens to adjust to peak bright spots in the picture. Ad just towards Av if you want the lens to adjust to the average of the entire picture. For most applications, the ALC can be set to mid-range.
4. Adjust the GAIN (pot without markings on the cover) if the lens oscillates (open and closes rapidly in bright light).
5. Place a Neutral Density #3 filter (or darker if needed) over the front of the lens to simulate night time viewing. Adjust the lens focus for a sharp picture, this will compensate for the limited depth of focus that occurs when the iris is wide open at night.

Lenses and Cameras

Domestic charges for shipping lenses and cameras are calculated as follows. Please note that these charges only apply to single destination shipments in the continental United States via UPS. All shipments will go UPS ground unless otherwise requested by customer at time of order. Special arrangements should be discussed with your Customer Service Representative or Regional Sales Manager. For information regarding shipping monitors, power supplies and IR illuminators see below.

Order Amount	Ground	Orange (3rd Day)	Blue (2nd Day)	Red (Overnight)	Handling Charge
Less than $300	Customer pays freight	Customer pays freight	Customer pays freight	Customer pays freight	$2.50 charge
$300-$499	ISO pays freight	Customer pays difference between Orange & Ground	Customer pays difference between Blue & Ground	Customer pays difference between Red & Ground	No handling charge
$500 & up	ISO pays freight	ISO pays freight	ISO pays freight	Customer pays difference between Red & Blue	No handling charge

Monitors

On all monitor orders of $2,000 or more, ISO will offer free ground shipping. This applies only to orders shipped to a single destination in the Continental U.S. Customer must take immediately delivery of all goods; free shipping does not apply to incremental shipments unless caused by a backorder.

Power Supplies

Customers pay all shipping charges on these products, regardless of destination.

IR Illuminators

For orders under $300, shipping to single destinations in the Continental U.S., customers pay all shipping charges. For orders valued at $300 or more, customers receive free UPS ground. For Orange (3rd Day), Blue (2nd Day) or Red (Overnight) shipments, customers must pay the difference.

Shipments of lenses, cameras, monitors and IR illuminators to Alaska, Hawaii and Puerto Rico are calculated as follows, based on single destination deliveries via UPS. See also special instructions outlined below.

Order Amount	Ground	Orange (3rd Day)	Blue (2nd Day)	Red (Overnight)	Handling Charge
Less than $300	N/A	N/A	Customer pays freight	Customer pays freight	$2.50 charge
$300 & up	N/A	N/A	Customer pays freight	Customer pays freight	No handling charge

Special shipping circumstances are outlined below:

Domestic/Hawaii/Alaska/Puerto Rico

If we ship overnight with Saturday delivery, a $12.50 will be added to the shipping charges.
If we ship overnight with early morning delivery, a $28.50 will be added to the shipping charges.
If we ship COD, a $7.00 shipping charge will be added to the shipping charge.

International Orders

Customers pay all shipping charges including applicable surcharges. There is a $25.00 handling fee on each international order.

All Products

Items not listed are subject to shipping and handling charges.

DOMESTIC

PAYMENT TERMS: 2%-10/Net 30 days unless otherwise specified in written format. Any accounts delinquent over 60 days will automatically become C.O.D. accounts.
Any discounts taken after 10 days will be billed back.

OPEN ACCOUNT: All orders are subject to credit approval prior to delivery. Credit will not be issued without completion of an ISO credit application. Allow 30 days for clearance after receipt of application.

New accounts shall be required to submit a check with the order if credit clearance has not been completed. C.O.D. orders will be accepted only on approval by ISO.

SHIPPING: F.O.B. Irvine, California, USA. Merchandise will be shipped surface carrier unless otherwise specified.
All orders are subject to a $2.50 handling charge.

RETURNS: *A return authorization number* is required at all times. In the event the product does not adhere to the conditions required, there will be a 20% restocking and refurbishing charge applied.

The return authorization number must be marked on the packing slip and on the outside of the shipping carton.

INTERNATIONAL

PAYMENT TERMS: Wire Transfer or Cashiers Check paid in advance.
All funds remitted to International Space Optics must be paid in US Dollars.

SHIPPING: All international merchandise is shipped (collect) either F.O.B. Japan or F.O.B. Irvine, California, USA unless otherwise agreed upon by both parties.

Insurance is arranged and paid for by customer.

RETURNS: All returns for repair or credit **must** be pre-approved with an assigned *RETURN AUTHORIZATION (RA) or RETURN FOR CREDIT (RC) NUMBER* marked on all paperwork and on the outside of the shipping carton. Freight and insurance is arranged and paid for by the customer.

All repairs (RA) must be shipped freight **pre-paid** DOOR TO DOOR with a notation on all paperwork: *VALUE IS FOR INSURANCE PURPOSES ONLY, NO COMMERCIAL VALUE.*

All returns for credit (RC) must be shipped freight **pre-paid.** In the event the product does not adhere to the conditions required, there will be a 20% restocking and refurbishing charge applied.

SHIP TO: INTERNATIONAL SPACE OPTICS, S.A.
2495 Da Vinci
Irvine, California 92614 USA

Phone (949) 260-1599 Fax (949) 260-1594

International Space Optics, S.A. (here after referred to as 'ISO') warrants this closed-circuit video equipment when purchased new to be free from defects in material and workmanship. ISO will repair or replace, at ISO's option, any closed circuit video equipment which under the proper conditions of installation and use exhibits such defects. However, the product must be returned properly packed, transportation prepaid, along with proof of purchase to ISO. The warranty shall apply as indicated below from date of purchase by original user.

Type	Warranty Period
CCTV Lenses	***4 Years***
Standard CCD Cameras	***3 Years***
Bullet, Board, Vari-Cube, Mini Dome Cameras	***1 Year***
High Impact Dome Cameras	***2 Years***
Video Monitors	***1 Year***
Infrared Illuminators	***2 Years***
Power Supplies	***1 Year***

In no event shall ISO be liable for special, indirect, incidental or consequential damages, the original user's remedies being limited to repair or replacement.

ISO MAKES NO OTHER FURTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR WARRANTY OF MERCHANTABILITY.

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CAUTION: Be sure to pack the equipment carefully. Damage during shipment if not adequately packed, is the owner's responsibility. Please ship the defective unit prepaid. Unit will be returned prepaid unless out of warranty and not to be repaired.

Effective May 1, 2001