

DESCRIPTION

The iO LED Line 1.5™ luminaire from Cooper Lighting Solutions enables functional luminous intensities in wet location architectural accents such as niches, building facades and bridges. The luminaire is 1.5" in diameter and is rated for wet locations. Electrical feed "plug" connectors eliminate hardwire connections between fixtures, enabling ultimate flexibility for installation and replacement. Individual units may be placed end-to-end to create continuous rows without obvious shadows between fixtures. Line 1.5™ is a low voltage linear luminaire available in 12" and 18" lengths that can be daisy chained for continuous row mounted applications. Optional beam spreads along the perpendicular axis of the fixture include 10° and 50°.

SPECIFICATION FEATURES

Construction

Extruded anodized aluminum housing coupled with a patented acrylic optical assembly and molded composite end caps.

Electrical

8'-0" 18 AWG, 300 volt rated power cords are supplied with a plug connector. Injection molded end cap is designed to receive either multiple orientation plug electrical connectors or an interconnect for daisy chaining.

LED Optics

Line 1.5™ is available with three lumen outputs of white light in four CCT options. IES LM79 format files may be downloaded from www.cooperlighting.com. All products have a CRI greater than 80. White light variance between LEDs is equal to or better than 3-step Mac Adam binning. Projected average

rated life is 50,000 hours at 70% of lamp lumen output. Highly engineered beam spreads along the perpendicular axis of the fixture include 10° and 50° distribution options.

Mounting

Two mounting bracket options include: surface and vertical mount. Bracket material is composed of stainless steel for ease of installation and removal as required. Fixtures can be rotated 38° within the mounting brackets for field adjustable aiming before securing set screw. Remote drivers are supplied with NEMA enclosures for power connection. To ensure proper performance, architectural details should allow for ventilation and air flow around the fixture. For detailed information regarding daisy chain limitations, remote distance limitations, power supply

options, and dimming options, please see page 2. Ambient temperature surrounding the fixture shall not exceed 122°F (50°C).

Finish

Anodized aluminum finish is standard. Custom finishes may be available upon request.

Compliance

Outdoor fixtures are UL listed for wet locations. Indoor fixtures are UL listed for damp locations. All fixtures are RoHS compliant, and tested per IESNA LM79. LEDs comply with LM80 standards.

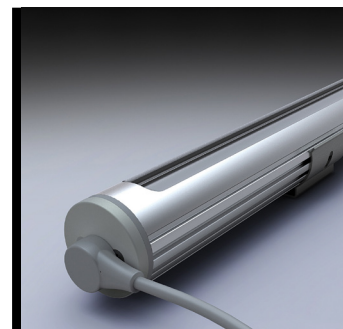
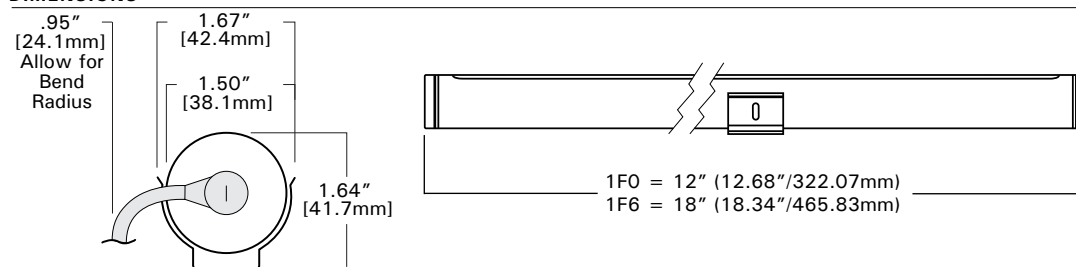
Environment

Line 1.5™ is UL rated for wet locations when an OD environment is specified. It is not rated for submersible applications.

Warranty

Standard 5 year limited warranty on all parts.

DIMENSIONS



LINE 1.5

LED

INTERIOR / EXTERIOR
LINEAR ACCENT LUMINAIRE
Symmetric

cULus Damp / Wet- 1598
LM79/LM80 Compliant ROHS
Compliant



ORDERING INFORMATION

SAMPLE NUMBER 0.10-5W-830-50-ID-HCD-UNV-AN-SM-E-RI-EP-15F6

Series	Light Level ¹ (Power) (nominal for 12" section)	LED CRI & CCT	Optical Distribution	Environment	Driver ²
0.10 = iO Line 1.5	1W = Standard Output, 87 lumens/ft (1.02W/ft) 3W = High Output, 210 lumens/ft (3.81W/ft) 5W = Very High Output, 318 lumens/ft (5.08W/ft)	827 = 80+ CRI, 2700K CCT 830 = 80+ CRI, 3000K CCT 835 = 80+ CRI, 3500K CCT 840 = 80+ CRI, 4000K CCT	10 = 10 degree 50 = 50 degree	ID = Indoor fixture, NEMA 1 driver enclosure included OD = Outdoor fixture, NEMA 4x driver enclosure included	STD = 96 W, 0-10V (100% - 10% dimming) HCD = 96 W, 0-10V (100% - 0% dimming)

Voltage	Housing Color ³	Mounting ⁴	Driver Location ⁵	Interconnect Option ⁶	Power Feed Option ^{6,7}	Length ^{2,6,8} (Actual in./mm) (Specify Run or Individual fixture)
UNV = 120V-277V	AN = Standard anodized aluminum	SM = Surface mount VM = Vertical mount ³	E = End driver location (requires more drivers) C = Central driver location (minimizes drivers required)	RI = Rigid Interconnects J1 = 6" Jumper Interconnects (left side & right side) EI = 12" Jumper Interconnects (end / end feed)	EP = End feed RP = Right side feed LP = Left side feed BP = (1) Left and (1) right side feed PP = 18' power cable	F = specify nominal run length in feet and inches (only available in 6" increments) (e.g. 15F6 = 15' 6" run) Or select individual fixtures: 1F0 = 12" (12.68"/322.07mm) 1F6 = 18" (18.34"/465.43mm)

See page 4 for Technical Notes.

LIGHT OUTPUT TABLE

Input, W (Includes driver losses) for max run length	Delivered Lumens/ft. per Optical Distribution		
	CCT	10°	50°
1W = 1.02 W/ft	2700	77	65
	3000	82	70
	3500	85	73
	4000	87	74
3W = 3.81 W/ft	2700	185	157
	3000	198	168
	3500	206	175
	4000	210	178
5W = 5.08 W/ft	2700	281	237
	3000	300	254
	3500	312	264
	4000	318	269

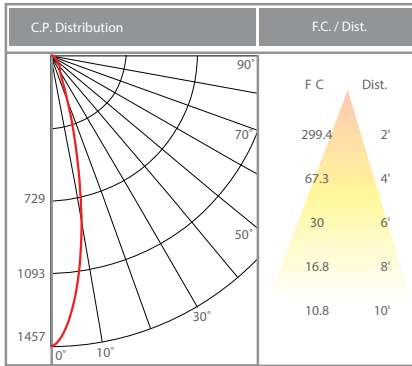


LIGHT OUTPUT CONVERSION TABLE

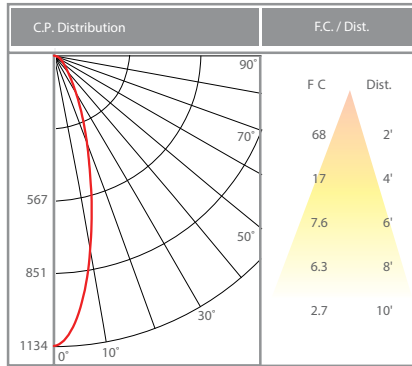
CCT	1W	3W	5W
2700K	0.24	0.58	0.88
3000K	0.25	0.62	0.94
3500K	0.26	0.64	0.98
4000K	0.27	0.66	1.00

LIGHT OUTPUT / DISTRIBUTION

4000K, 5W, 18" 10 Degree



4000K, 5W, 18" 50 Degree



INSTALLATION DETAILS

Max Run Length Depends on Driver Location (See diagram below)

96 W Driver	E = End of Driver Location	C = Central driver location
line 1.5 - 1W	45' (13.72 m)	90' (27.43 m)
line 1.5 - 3W	16' (4.88 m)	32' (9.75 m)
line 1.5 - 5W	10' (3.05 m)	20' (6.10 m)

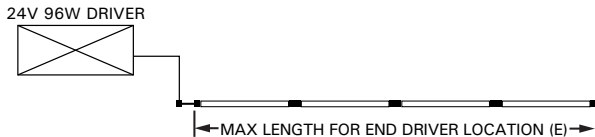
Max Allowable Remote Driver Distance Wire Diameter

Wire Diameter	Max Allowable Remote Driver Distance
12 AWG	71'-0" (21.6m)
14 AWG	46'-0" (14.0m)
18 AWG	18'-0" (5.5m)

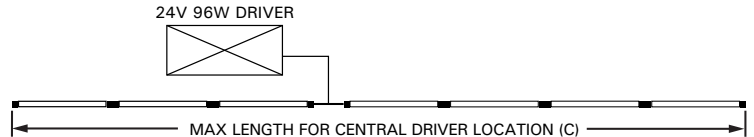
Temperature, Ambient temperature surrounding the fixture shall not exceed 122° F (50°C)

Driver Location Diagram

End Driver Location (E):

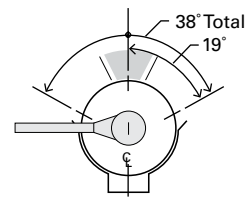
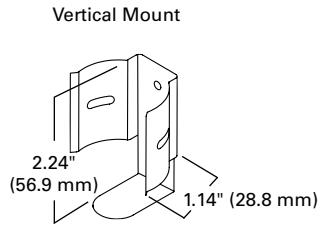
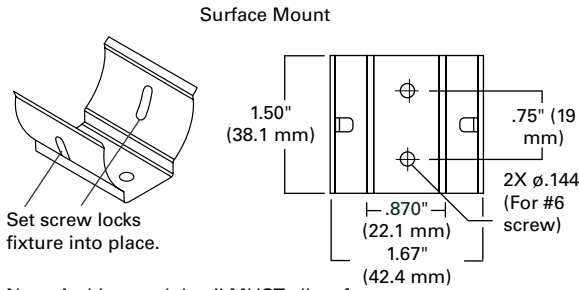


Central Driver Location (C):



MOUNTING OPTIONS AND BRACKETS

(Additional details on bracket options available in the Accessories Spec Sheet section of the io website)

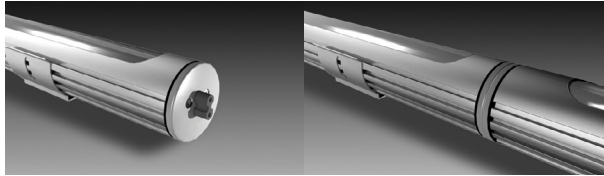


Line 1.5™ is not rated for submersible applications. Line 1.5 should not be mounted in conditions where the fixture could be exposed to standing water.

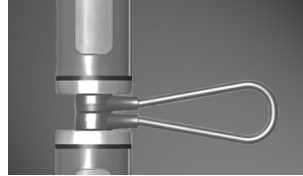
Note: Architectural detail MUST allow for access to set screws to ensure stable mounting condition.

ELECTRICAL FEED CONFIGURATIONS

Field Configurable Electrical Feed Interconnect Options

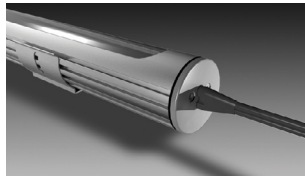


RI = Rigid Interconnector (for continuous row mounting)
NOTE requires a LEVEL mounting surface



JI = 6" Jumper Interconnect

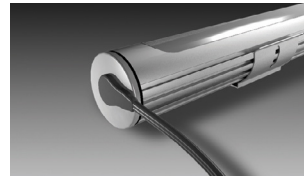
Power Feed Options



EP = End Power Feed



RP = Right Side Power



LP = Left Side Power Feed

DRIVER DETAILS

Driver Part Number	Description
STD	96W Driver (capable of either Non-Dimming or 0-10V dimming down to 10%) and either NEMA 1 Enclosure (for indoor spec) or NEMA 4x Enclosure (for outdoor spec).
HCD	96W Driver (capable of 0-10V dimming down to 0% with included OTDIM module) and either NEMA 1 Enclosure (for indoor spec) or NEMA 4x Enclosure (for outdoor spec).

Note: See page 2 for driver run length limits

STD DRIVER SPECIFICATIONS

Additional details available in the Accessories Spec Sheet section of the io website

Electrical Specifications	
Input	
Input Voltage (VAC)	120V - 277V (+/-10%)
Frequency Range (Hz)	50 - 60Hz (+/-10%)
Input Current (A)	0.91 @ 120V 0.39 @ 277V
Input Power (W)	111W
THD	< 20%
Power Factor	> 0.95
Inrush Current (Apk)	< 55A
Line Regulation	< 5%
Stand-by Power (W)	< 1.5W
Output	
Output Voltage (VDC)	24V (+/-5%)
Output Current (A)	0.1 - 4.0A
Output Ripple (V)	1V
Efficiency	>85% (Typical)
Load Regulation	<5%
Dimming	
Dimming Control	0 - 10V
Dimming Range	10 - 100%
Dimming Type	PWM
Frequency	250Hz
Dimming Input Isolation	2.5KV

Details on NEMA enclosure options available in the io LED Accessories Spec Sheet section of the Cooper Lighting Solutions website

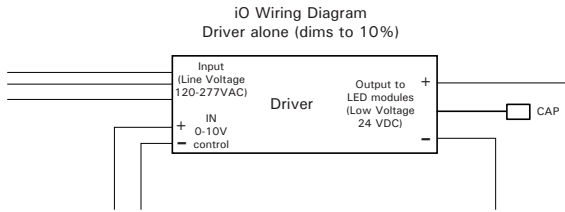
HCD DIMMING MODULE SPECIFICATIONS

Additional details available in the Accessories Spec Sheet section of the io website

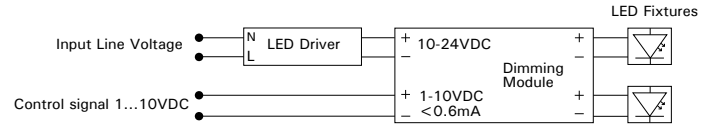
Key Dimming Features	
Utilizes pulse width modulation (PWM), to control LED performance	
Options available for analog or DMX protocols	
Dimming range: 0-100%	
Short circuit, overload and overheating protection	
Dimming Module Specifications	
Location:	Dry
Input Voltage:	24v DC
Max Input Current:	5.3A
Control Voltage:	0-10v DC
Frequency:	135 Hz
Ambient Temp:	-20°C to +50°C
Weight:	.165 lbs
Power Consumption:	Up to 3W

Details on NEMA enclosure options available in the io LED Accessories Spec Sheet section of the Cooper Lighting Solutions website

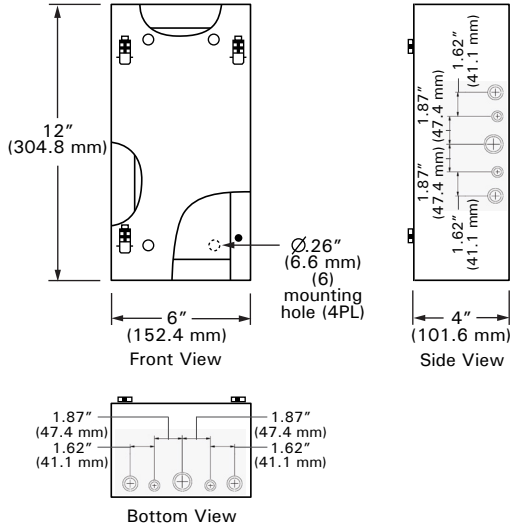
STD DRIVER WIRING



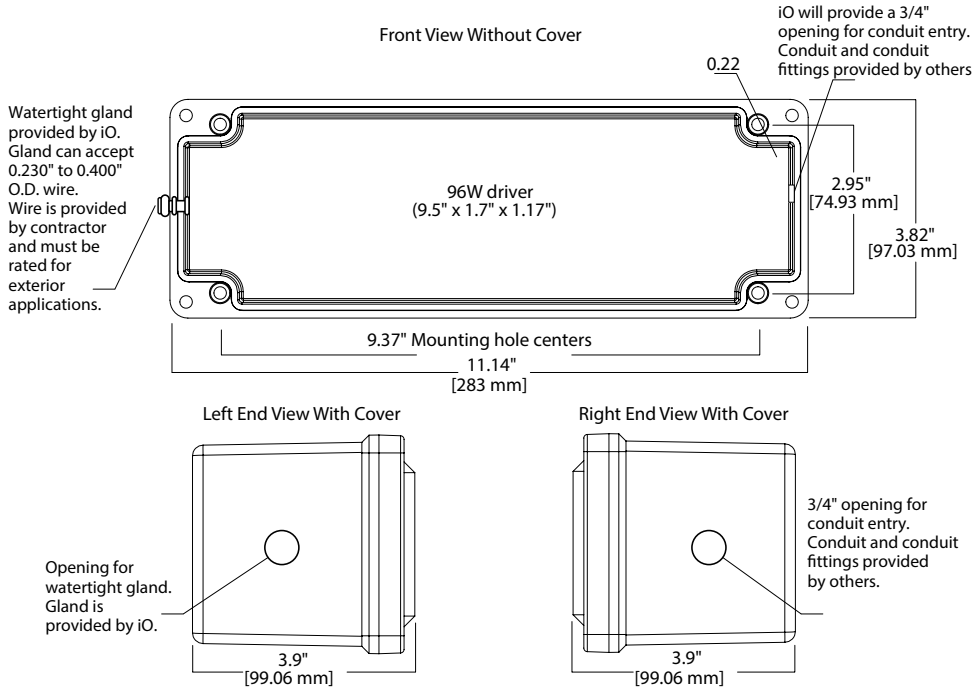
HCD DIMMING MODULE WIRING



NEMA 1 ENCLOSURE DIMENSIONS (for ID specifications)



NEMA 4x ENCLOSURE DIMENSIONS (for OD specifications)



TECHNICAL NOTES

1. Light Level delivered lumens provided for 4000K CCT, 10° optical distribution. Based in IES photometry testing. See table on page 2 for all CCTs. See Cooper Lighting Solution website for all IES test reports.
2. Drivers will be optimized if run length is specified; Discrete fixtures will include 1 driver per fixture. Contact Customer Service to order fixtures only.
3. Contact Cooper Lighting Solutions for custom color availability.
4. Vertical mount application will include 1 surface mount and 1 vertical mount per fixture.
5. Required when specifying by run length. See Driver Location Diagram on page 2.
6. Run specifications must reflect both power feed and interconnect options. When combining individual fixtures into a self-configured run, the responsibility is on the designer to determine necessary power feeds and interconnects. When combining individual fixtures, at least one power feed is required at the beginning of the run and interconnects are required between all fixtures.
7. BP available for C driver location only.
8. Specified run lengths will be optimized with 18" fixtures and completed with shorter fixtures to satisfy the run length without the total actual length (rather than total nominal length) going greater than the specified run length.