iO LED

DESCRIPTION

The iO LED Line 2.0™ luminaire from Cooper Lighting Solutions is a low voltage linear accent LED luminaire ideal for illuminating both interior and exterior vertical surfaces. The 5°, 10°, 30°, 60° and 90° (both symmetrical and asymmetrical options available) optical distributions can be utilized for accent or general illumination and are designed for tight beam control and to minimize stray light. Line 2.0™ is available in nominal 18", 36", 54" and 72" lengths. The variety of mounting options simplify installation and support a broad range of linear lighting applications.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction
Line 2.0 is constructed of anodized extruded aluminum body and die cast end caps for a durable housing with UV stabilized acrylic optics.

Electrical
4'-0" 14 AWG, 300 volt rated power cords supplied on one end of the fixture. For details on remote driver distance limitations and run length limits - see pg. 3.

LED Optics
The customized acrylic optics offer very high transmissivity, UV stability and excellent longevity with optical symmetrical distribution options of 5, 10, 30, 60 and 90 degrees. Asymmetrical optic is also available. Please note acrylic optics should not be cleaned with IPA or other harsh chemicals. Acrylic can be safely cleaned with soap and water. IES LM79 format files may be downloaded from www.cooperlighting.com. All products have an 80+ CRI. White light variance between LEDs is equal to or better than 3-step MacAdam binning.

Mounting
Three mounting bracket options include: surface, wall and offset adjustable with lockable aiming. The luminaires can quickly be locked onto the brackets for easy installation. Adjustable mounting allows fixtures to be rotated 45˚ with lockable aiming (see details on page 3). 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. Ambient temperature surrounding the fixture shall not exceed 122˚F (50˚C).

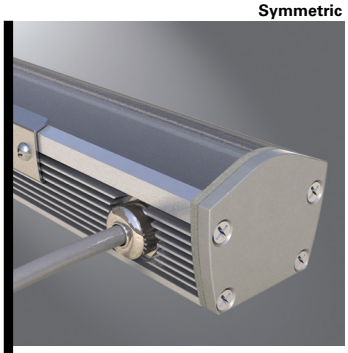
Finish
Anodized aluminum finish is standard. Custom anodized finishes available upon request.

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 2.0™ is UL rated for wet locations when an OD environment is specified. It is not rated for submersible applications. It should not be mounted in conditions where there is any standing water.

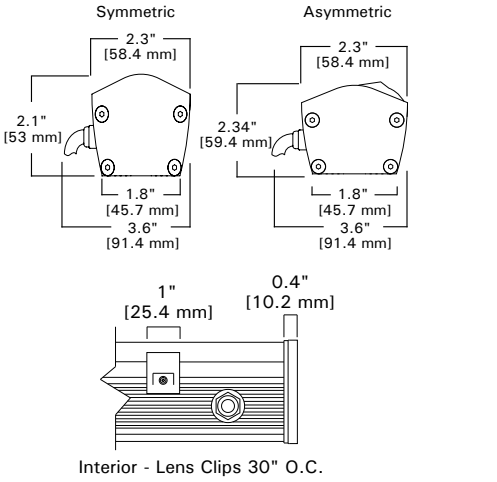
Warranty
Standard five-year limited warranty.

Symmetric



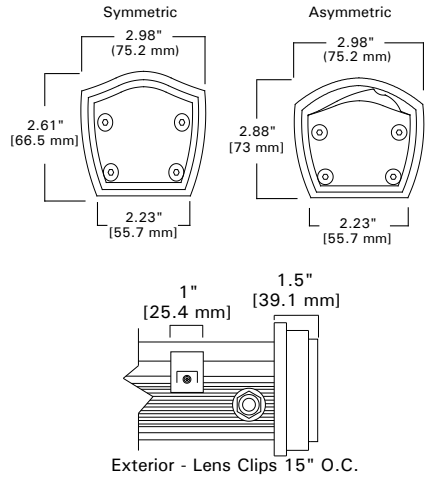
Asymmetric

DIMENSIONS INTERIOR / END CAP DETAILS



Interior - Lens Clips 30" O.C.

DIMENSIONS EXTERIOR / END CAP DETAILS



Exterior - Lens Clips 15" O.C.

LINE 2.0

LED

INTERIOR / EXTERIOR LINEAR ACCENT LUMINAIRE

Symmetric / Asymmetric

IP65
cULus Damp / Wet - 1598
LM79/LM80 Compliant
ROHS Compliant

ORDERING INFORMATION

SAMPLE NUMBER 0.05-06W-830-30-ID-HCD-UNV-AN-AM-1-E-7F6

Series	Light Level [1] / Power (nominal for 12" section)	LED CRI & CCT	Optical Distribution	Environment	Driver [2]
0.05 = iO Line 2.0	**03W** = 286 lumens/ft (3.9W/ft) **06W** = 478 lumens/ft (6.6W/ft) **09W** = 649 umens/ft (9.4W/ft) **12W** = 744 lumens/ft (12.1W/ft)	**827** = 80+ CRI, 2700K CCT **830** = 80+ CRI, 3000K CCT **835** = 80+ CRI, 3500K CCT **840** = 80+ CRI, 4000K CCT	**5** = 5 degree **10** = 10 degree **30** = 30 degree **60** = 60 degree **90SYM** = 90 degree - Symmetric **90ASYM** = 90 degree - Asymmetric	**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	Driver Location [4]	Length [2,5] (Actual in./mm) (Specify Run or Individual fixture)
UNV = 120V-277V	**AN** = Standard anodized aluminum	**SM** = Surface mount **WM** = Wall mount **AM** = Adjustable mount	**E** = End driver location	**__F_** = specify nominal run length in feet and inches (only available in 18" increments) (e.g. **7F6** = 7' 6" run) Or select individual fixtures: **1F6** = 18" (17.71"/449.83mm) **4F6** = 54" (51.71"/1313.43mm) **3F0** = 36" (34.71"/881.63mm) **6F0** = 72" (68.71"/1745.23mm)

See page 5 for Technical Notes.

Cooper Lighting Solutions
18001 East Colfax Avenue
Aurora, CO 80011
P: 303-393-1522
www.cooperlighting.com

LIGHT OUTPUT TABLE

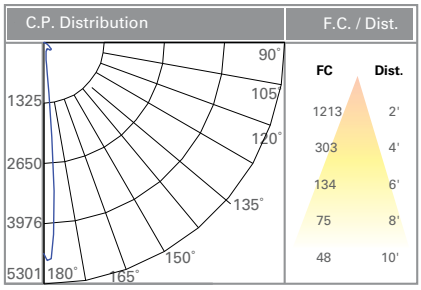
Input, W (Includes driver losses) for max run length	Delivered Lumens/ft. per Optical Distribution						
	CCT	5°	10°	30°	60°	90 SYM	90 ASYM
03W = 3.9 W/ft	2700	213	222.9	252.5	209.9	259	98
	3000	227.8	238.4	270.1	224.5	276	105
	3500	236.9	247.9	280.9	233.5	288	109
	4000	241.4	252.7	286.3	238	293	111
06W = 6.6 W/ft	2700	355.8	372.5	421.9	350.8	432	238
	3000	380.6	398.3	451.2	375.2	462	255
	3500	395.8	414.3	469.3	390.2	480	265
	4000	403.4	422.2	478.3	397.7	490	270
09W = 9.4 W/ft	2700	482.9	505.5	572.6	476	586	332
	3000	516.5	540.6	612.4	509.1	627	355
	3500	537.1	562.2	636.9	529.5	652	369
	4000	547.5	573	649.1	539.7	665	377
12W = 12.1 W/ft	2700	553.4	579.2	656.1	545.5	672	567
	3000	591.9	619.5	701.7	583.4	718	607
	3500	615.5	644.3	729.8	606.8	747	631
	4000	627.4	656.7	743.8	618.4	762	643

LIGHT OUTPUT CONVERSION TABLE

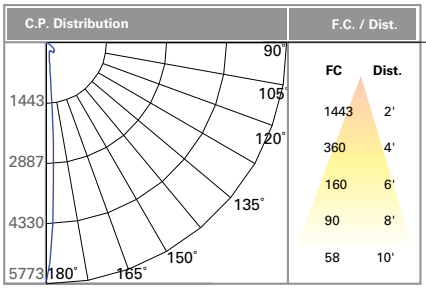
CCT	03W	06W	09W	12W
2700K	0.34	0.57	0.77	0.88
3000K	0.36	0.61	0.82	0.94
3500K	0.38	0.63	0.86	0.98
4000K	0.39	0.64	0.87	1.00

LIGHT OUTPUT / DISTRIBUTION SYMMETRIC

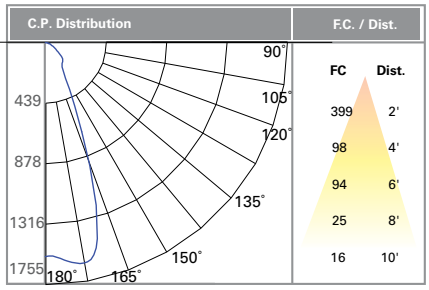
36" 4000K, 12W 5 Degree*



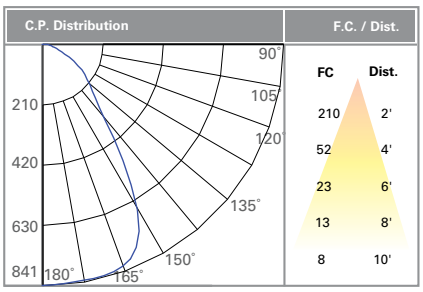
36" 4000K, 12W 10 Degree*



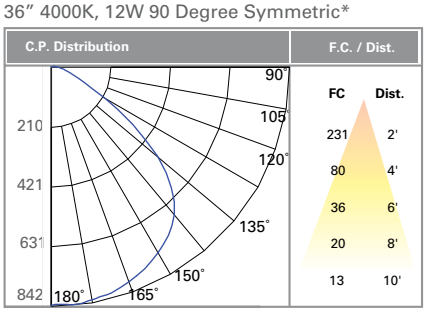
36" 4000K, 12W 30 Degree*



36" 4000K, 12W 60 Degree*

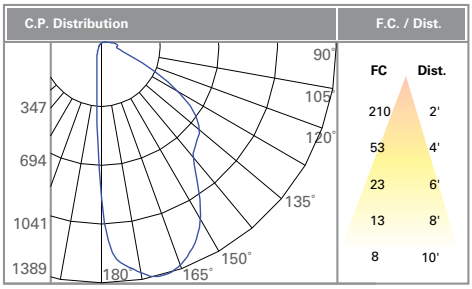


36" 4000K, 12W 90 Degree Symmetric*



LIGHT OUTPUT / DISTRIBUTION ASYMMETRIC

36" 4000K, 12W 90 Degree Asymmetric*



*Note: Light output / distributions based on IES file

INSTALLATION DETAILS

Max Run Length

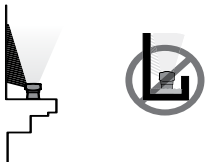
96 W Driver	E = End of Driver Location
line 2.0 - 03W	26' (7.92 m)
line 2.0 - 06W	17' (5.18 m)
line 2.0 - 09W	12' (3.66 m)
line 2.0 - 12W	8' (2.44 m)

Max Allowable Remote Driver Distance by 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)

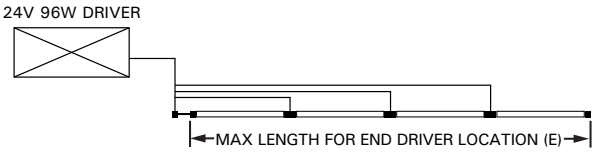
NOTE: Line 2.0™ from iO Lighting is UL listed for wet locations when OD is specified. It is not rated for submersible applications. Line 2.0 should not be mounted in conditions where the fixture could be exposed to standing water.

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



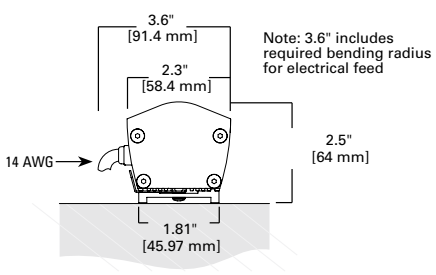
DRIVER LOCATION DIAGRAM

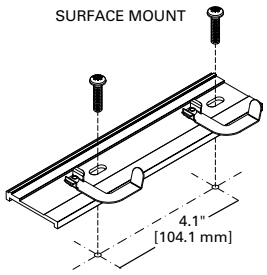
End Driver Location (E):

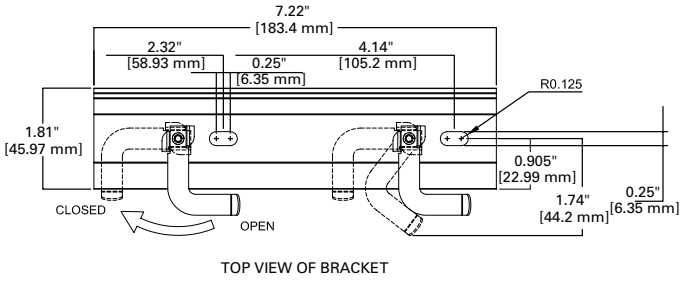


MOUNTING OPTIONS AND BRACKETS

Surface Mount (iO part #: LA.BK.SURFMT)

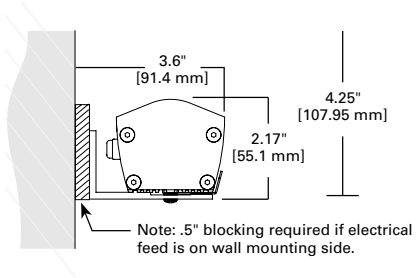


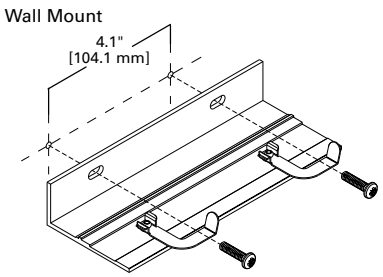


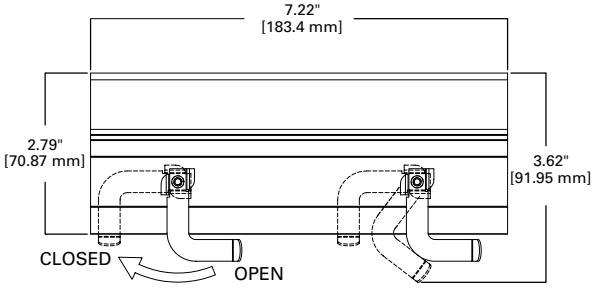


TOP VIEW OF BRACKET

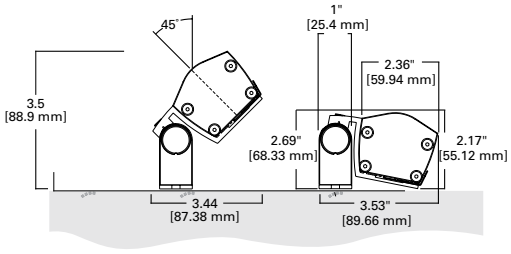
Wall Mount (iO part #: LA.BK.WALLMT)

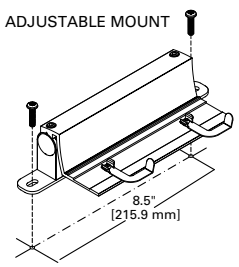


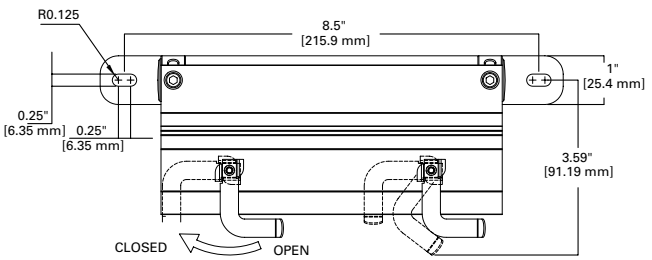




Field Adjustable Mount with Lockable Aiming (iO part #: LA.BK.ADJMT)







TOP VIEW OF BRACKET

ELECTRICAL FEED CONFIGURATION


Single Side End Feed
Symmetric


Single Side End Feed
Asymmetric

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

Note: See page 3 for driver run length limits

STD DRIVER SPECIFICATIONS

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

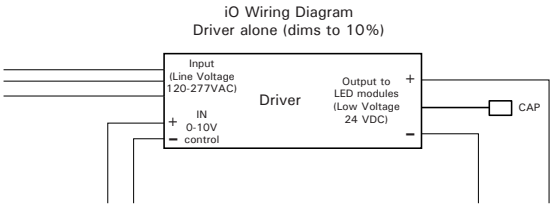
HCD DIMMING MODULE SPECIFICATIONS

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

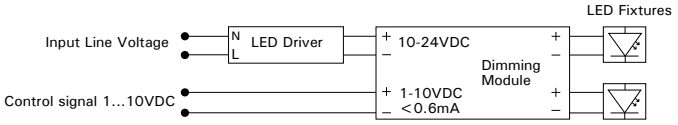
Dimming Module Specifications	
Location:	Dry
Input Voltage:	24v DC
Max Input Current:	5.3A
Control Voltage:	0-10v DC
Frequency:	135 Hz
Ambient Temp:	-20˚C to +50˚C
Weight:	.165 lbs
Power Consumption:	Up to 3W

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

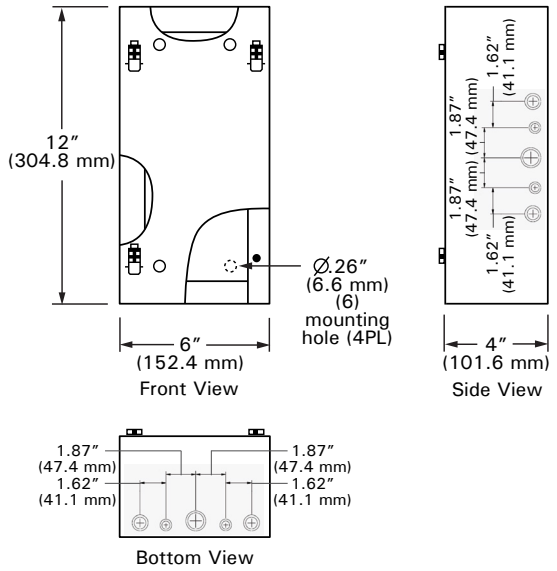
STD DRIVER WIRING



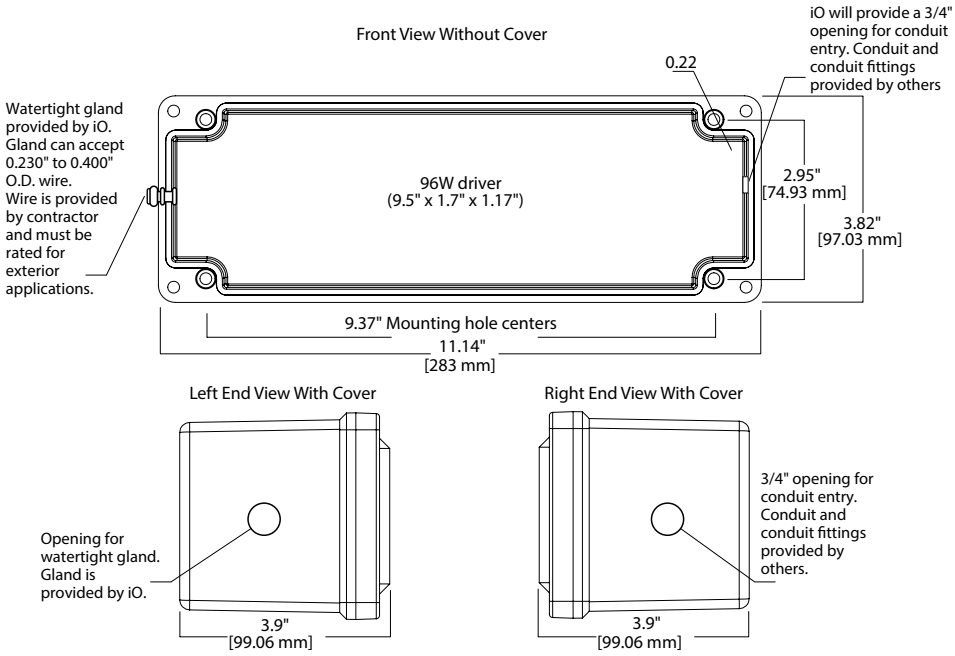
HCD DIMMING MODULE WIRING



NEMA 1 ENCLOSURE DIMENSIONS (for ID specifications)



NEMA 4x ENCLOSURE DIMENSIONS (for OD specifications)



TECHNICAL NOTES

1. Light Level provided in delivered lumens based on IES files for 4000K CCT with 30° optical distribution. See table on page 2 for delivered lumen output of all CCTs.
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. See Driver Location diagram on page 3.
5. Specified run lengths will be optimized with 6 ft. 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.