GREEN LED LIGHTING SOLUTIONS

LED Neon FLEX



Version 1.4

VIVID

Wave

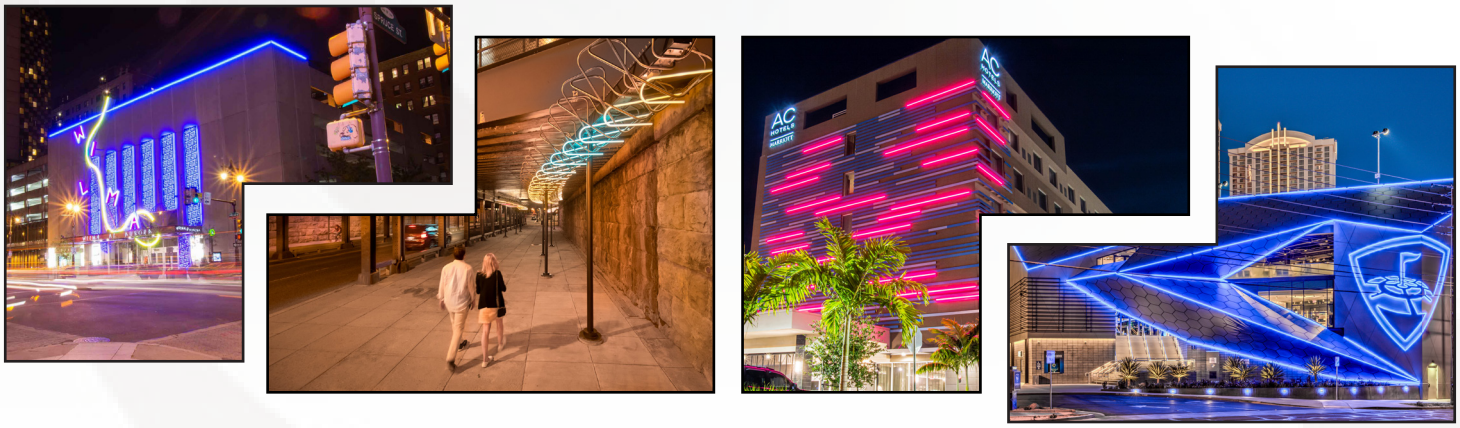
HIGH OUTPUT

PVC 24V

c UL us LISTED E347880 | CE | RoHS COMPLIANT | INDOOR USE | OUTDOOR USE | IP68 | DMX RDM | DALI | DIMMABLE

For More Information

Toll Free: 1 (888) 580-6366



GLLS GREEN LED LIGHTING SOLUTIONS

UNITED STATES

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CANADA

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E1C 4X7

GLLS, reserves the right to make any design changes for continuous improvement which will not affect the overall appearance or performance.

www.glls.com

www.ledneonflex.com

Light Dimension 0.63 x 0.67in (16x17mm)

Output	White	White
LED Light	SMD LED Chip	SMD LED Chip
Max Run Length*		
Single Feed	32.81ft (10m)	26.24ft (8m)
Double Feed	65.62ft (20m)	52.48ft (16m)
Light Surface	Square profile 160°	Square profile 160°
Lumen Maintenance	70,000 Hours L70 @ 25°C : 90,000 Hours L50 @ 25°C 50,000 Hours L70 @ 50°C : 70,000 Hours L50 @ 50°C	
Electrical		
Input Voltage	24V DC	24V DC
Power Consumption	3.66W/ft (12W/m)	4.57W/ft (15W/m)
Physical		
LED Count	33 LEDs / ft (108 LEDs/m)	33 LEDs / ft (108 LEDs/m)
LED Spacing	0.37in (9.26mm)	0.37in (9.26mm)
Cutting Unit Length	2.19in (55.6mm) (6 LEDs)	2.19in (55.6mm) (6 LEDs)
Thermal Management	Free air convection	
Fixture Connections	End, side & bottom lead wires	
Minimum Bend Diameter	11.81in (300mm) (Top Bending)	
Temperature Ranges		
Installation	32°F to 95°F (0°C to 35°C)	
Operating	-4°F to 95°F (-20°C to 35°C)	
Humidity	0-95% non condensing	
Dependability		
Warranty	5 Year Limited Warranty	
Safety		
Certification	Tested to UL & CSA by Underwriters Laboratory for use in USA and Canada, complies with California Title 24 Requirements, Lighting Facts. Exceeds ANSI C78.377A, CE & RoHS Compliant.	
IP Rating	IP68 with appropriately rated accessories	

*Max Run Length: Unless otherwise stated, snap and seamless run lengths are the same.

White 15W/m

Available Colors

Color	CCT Wavelength
2200K	2238 ± 102K
2700K	2725 ± 145K
3000K	3045 ± 175K
3500K (W)	3465 ± 245K
4000K	3985 ± 275K
5700K	5669 ± 355K

Lumen Count (15W)

Color	Per Foot	Per Meter	Power
2200K	>213.41lm	>700lm	4.57W/ft (15W/m)
2700K	>243.90lm	>800lm	4.57W/ft (15W/m)
3000K	>243.90lm	>800lm	4.57W/ft (15W/m)
3500K	>274.32lm	>900lm	4.57W/ft (15W/m)
4000K	>274.32lm	>900lm	4.57W/ft (15W/m)
5700K	>259.14lm	>850lm	4.57W/ft (15W/m)

White 12W/m

Available Colors

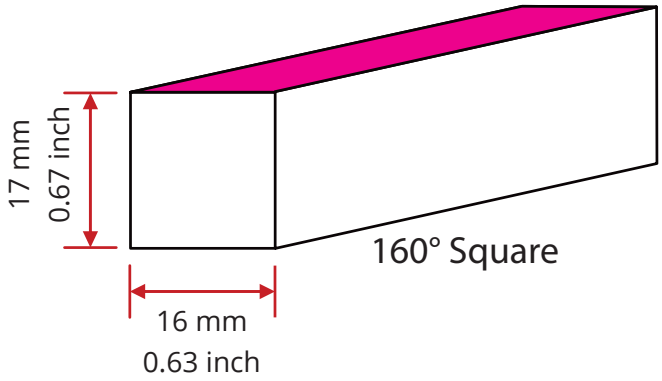
Color	CCT Wavelength
2200K	2238 ± 102K
2700K	2725 ± 145K
3000K	3045 ± 175K
3500K (W)	3465 ± 245K
4000K	3985 ± 275K
5700K	5669 ± 355K

Lumen Count (12W)

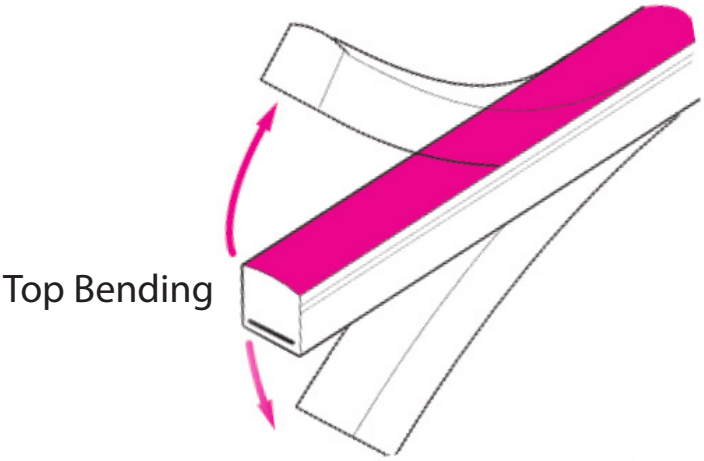
Color	Per Foot	Per Meter	Power
2200K	>167.68lm	>550lm	3.66W/ft (12W/m)
2700K	>198.17lm	>650lm	3.66W/ft (12W/m)
3000K	>198.17lm	>650lm	3.66W/ft (12W/m)
3500K	>228.66lm	>750lm	3.66W/ft (12W/m)
4000K	>228.66lm	>750lm	3.66W/ft (12W/m)
5700K	>213.41lm	>700lm	3.66W/ft (12W/m)



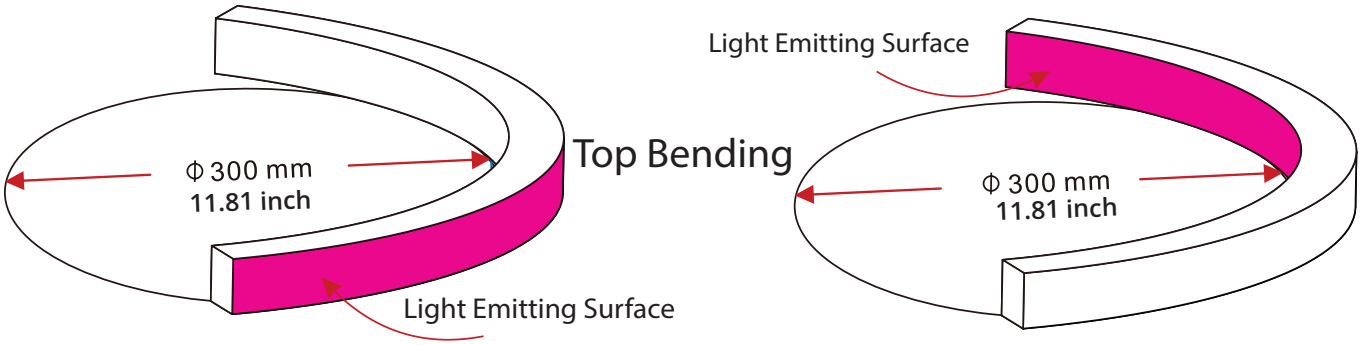
Light Profile



Bending Direction



Minimum Bending Diameter



Fixtures

NF-16E-0-01-2W-E-XXX-24DC

LED Color (3 digits)

LED Color (3 digits)	
22K - 2200K	35K - 3500K
27K - 2700K	40K - 4000K
30K - 3000K	57K - 5700K

Lead Connector

NA-16E-0-01-2W-XX-X-XX-XXX-P

Length (3 Digits)
Exit Type (2 Digits)
For Fixture End (1 Digit)
Connector Type (2 Digits)

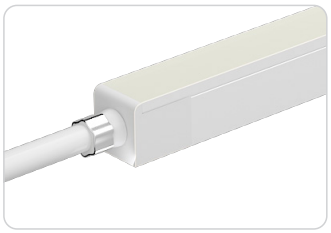
Connector Type (2 Digits)	For Fixture End (1 digit)	Exit Type (2 digits)	Length (3 digits)
SC - Snap Conenctor	1 - Input side	EN - End	0M3 - 0.98ft (30cm)
SE - Seamless	2 - Output side	BO - Bottom	01M - 3.28ft (1m)
SV - Swivel	0 - Jumpers/T-Feeds/ Seamless (or Submersible) Bottom/Seamless (or Submersible) End	SL - Side left	03M - 9.84ft (3m)
SU - Submersible		SR - Side right	05M - 16ft (5m)
		EJ - End jumper	10M - 32.81ft (10m)
		BJ - Bottom jumper	000 - For End Cap
		TF - Power T feed	
		EC - End Cap	

For full part number naming rules, please refer to the document on www.glls.com/support/documentation/

IP67: Rated for wet locations, not submersion. Factory Assembly only.

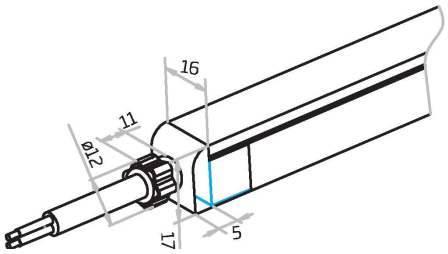


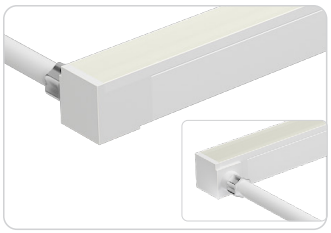
Seamless



Seamless End Exit

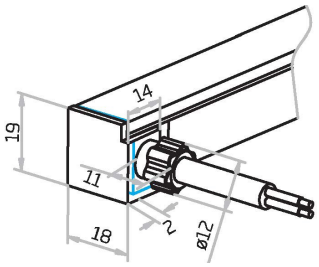
NA-16E-0-00-2W-SE-0-EN-XXX-P





Seamless Side Exit

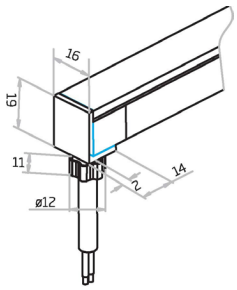
NA-16E-0-00-XW-SE-1-SL-XXX-P
NA-16E-0-00-XW-SE-2-SL-XXX-P
NA-16E-0-00-XW-SE-1-SR-XXX-P
NA-16E-0-00-XW-SE-2-SR-XXX-P

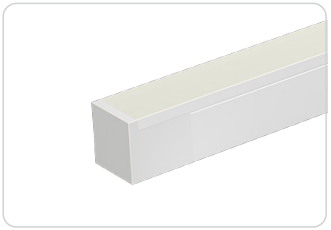




Seamless Bottom Exit

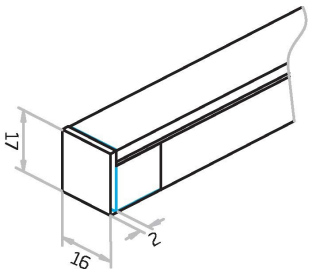
NA-16E-0-00-2W-SE-0-BO-XXX-P





Seamless End Cap

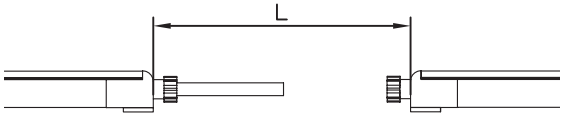
NA-16E-1-00-0W-SE-1-EC-000-P
NA-16E-1-00-0W-SE-2-EC-000-P





Seamless Jumper

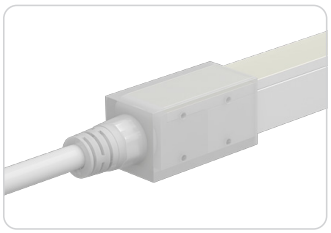
NA-16E-0-00-2W-SE-0-EJ-XXX-P



IP68: Submersible. Factory Assembly only.

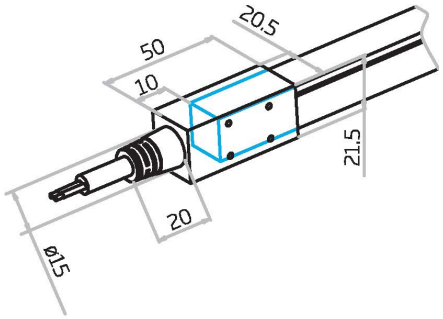


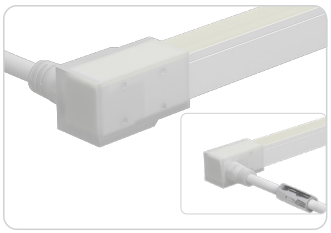
Submersible Seamless



Submersible End Exit

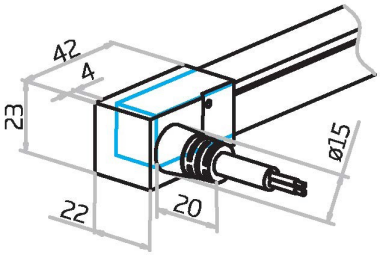
NA-16E-0-00-2W-SU-0-EN-XXX-P

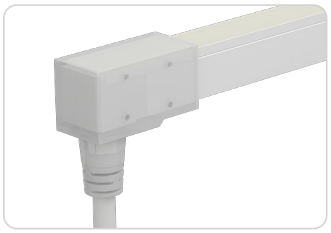




Submersible Side Exit

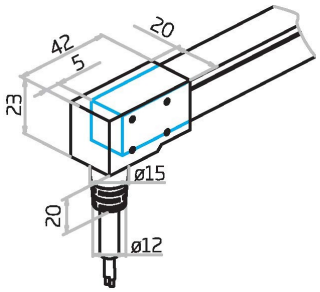
NA-16E-0-00-2W-SU-1-SL-XXX-P
NA-16E-0-00-2W-SU-2-SL-XXX-P
NA-16E-0-00-2W-SU-1-SR-XXX-P
NA-16E-0-00-2W-SU-2-SR-XXX-P

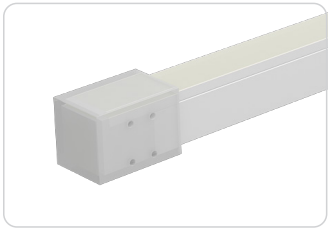




Submersible Bottom Exit

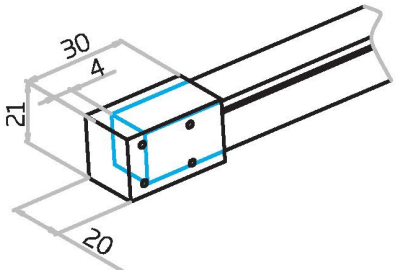
NA-16E-0-00-2W-SU-0-BO-XXX-P

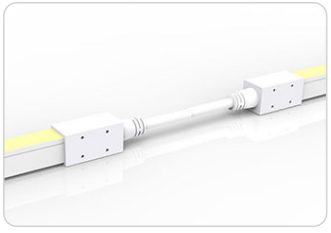




Submersible End Cap

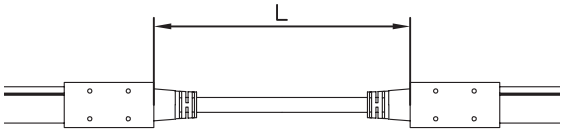
NA-16E-1- 00-0W-SU-1-EC-000-P
NA-16E-1- 00-0W-SU-2-EC-000-P





Submersible Jumper

NA-16E-0-00-2W-SU-0-EJ-XXX-P



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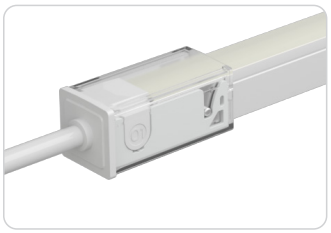
IP67: Rated for outdoor use. Factory Assembly or DIY.



Snap



Snap End Exit

NA-16E-0-00-2W-SC-1-EN-XXX-P
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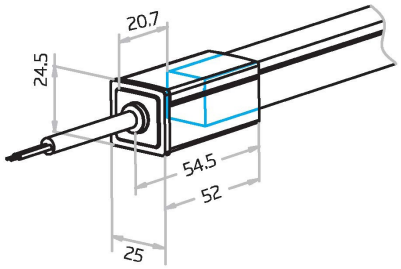

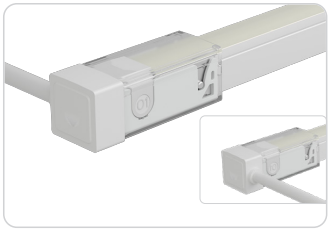

Snap Side Exit

NA-16E-0-00-XW-SC-1-SL-XXX-P
NA-16E-0-00-XW-SC-2-SL-XXX-P
NA-16E-0-00-XW-SC-1-SR-XXX-P
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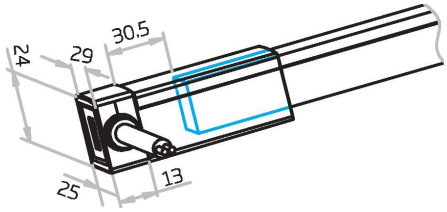
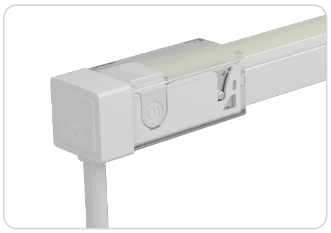
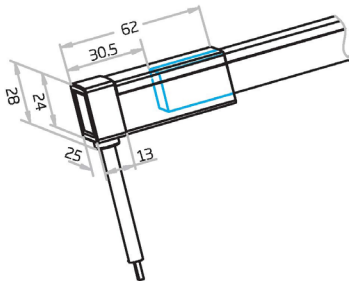
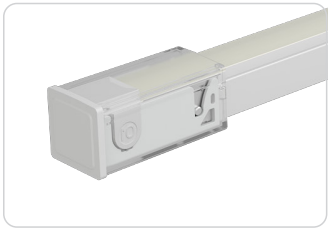




Snap Bottom Exit

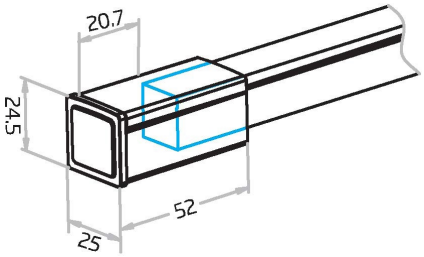
NA-16E-0-00-2W-SC-1-BO-XXX-P
NA-16E-0-00-2W-SC-2-BO-XXX-P





Snap End Cap

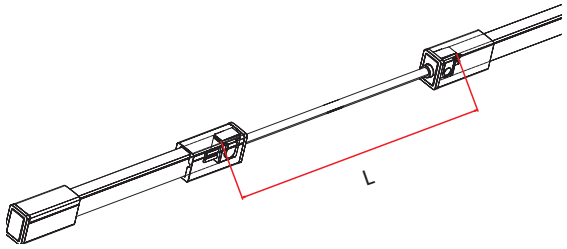
NA-16E-0-00-0W-SC-1-EC-000-P
NA-16E-0-00-0W-SC-2-EC-000-P





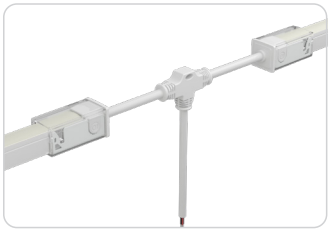
Snap Jumper

NA-16E-0-00-2W-SC-0-EJ-XXX-P



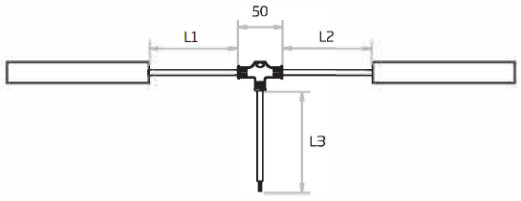
IP67: Rated for outdoor use.
Factory Assembly or DIY.

Snap



Snap Power T Feed

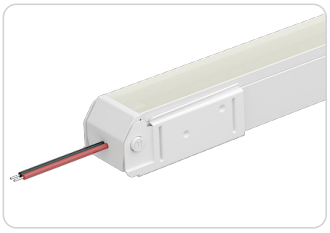
NA-16E-0-00-2W-SC-0-TF-XXX-P



Swivel

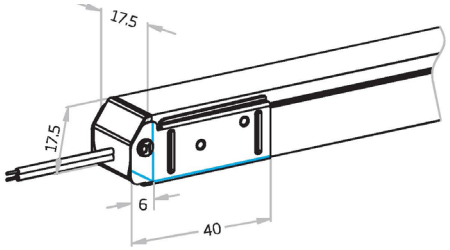
IP20: Rated for indoor use only.
Factory Assembly or DIY.

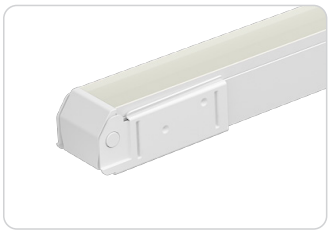
22AWG
22AWG



Swivel End Exit

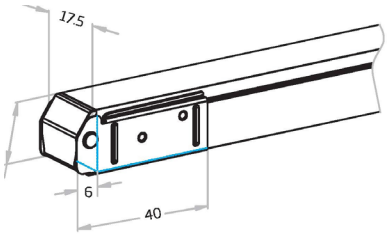
NA-16E-0-00-2W-SV-1-EN-XXX-P
NA-16E-0-00-2W-SV-2-EN-XXX-P





Swivel End Cap

NA-16E-1- 00-0W-SV-1-EC-000-P
NA-16E-1- 00-0W-SV-2-EC-000-P



Barrel

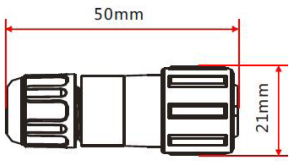


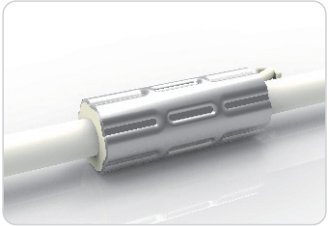
Barrel Connectors

NA-XX-BC-DC-CXX-F
NA-XX-BC-DC-CXX-M

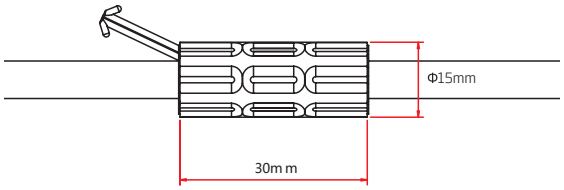
NA-XX-BN-XXA-CXX-F
NA-XX-BN-XXA-CXX-M

NA-XX-PL-XXA-CXX-F
NA-XX-PL-XXA-CXX-M



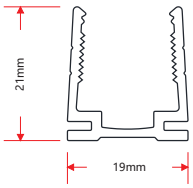


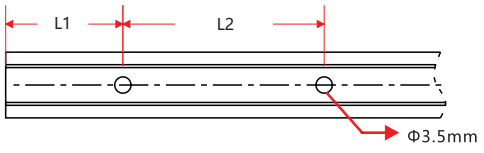
Anti-Wicking Ferrule



Plastic Channel

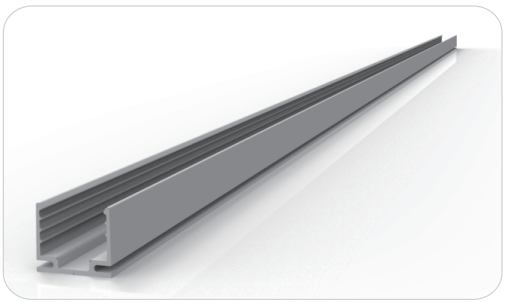


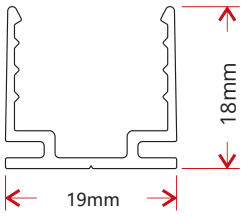


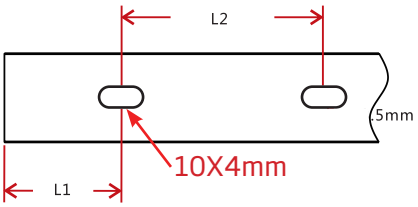


W x H	Standard Length	Part Number	L1	L2	Screw Hole Φ	Hole #
0.75 x 0.83in	19.69in (500mm)	CH-16-R-PL-0M5-SD	1.97in (50mm)	7.87in (200mm)	Φ0.14in (3.5mm)	3
(19x 21mm)	39.37in (1000mm)	CH-16-R-PL-01M-SD	3.94in (100mm)	7.87in (200mm)	Φ0.14in (3.5mm)	5
	78.74in (2000mm)	CH-16-R-PL-02M-SD	3.94in (100mm)	7.87in (200mm)	Φ0.14in (3.5mm)	10

Standard Anodized Aluminum Channel

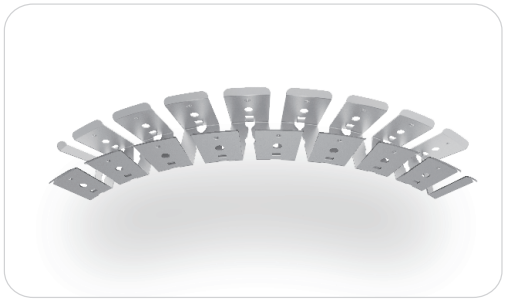




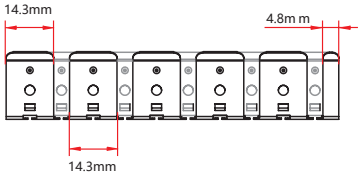


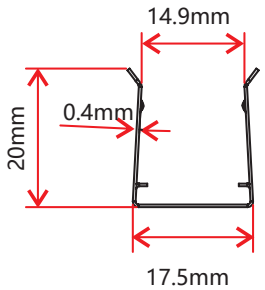
W x H	Standard Length	Part Number	L1	L2	Screw Hole Φ	Hole #
0.75 x 0.71in	1.38in (35mm)	CL-16-R-AL-3C5-SD	0.69in (17.5mm)	/	0.39in x 0.16in (10 x 4mm)	1
(19 x 18mm)	19.69in (500mm)	CH-16-R-AL-0M5-SD	1.97in (50mm)	7.87in (200mm)	0.39in x 0.16in (10 x 4mm)	3
	39.37in (1000mm)	CH-16-R-AL-01M-SD	3.94in (100mm)	7.87in (200mm)	0.39in x 0.16in (10 x 4mm)	5
	78.74in (2000mm)	CH-16-R-AL-02M-SD	3.94in (100mm)	7.87in (200mm)	0.39in x 0.16in (10 x 4mm)	10

Stainless Steel Flexible Channel



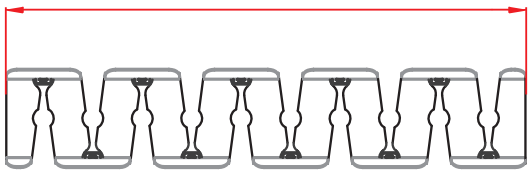






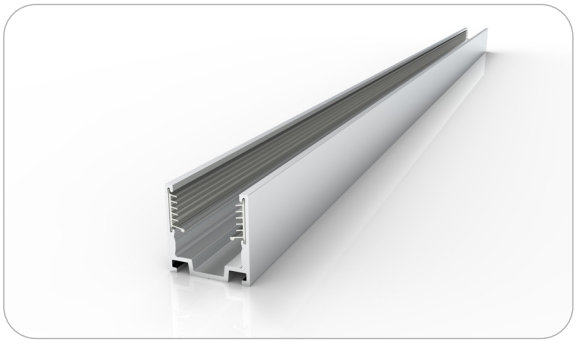
W x H	Standard Length	Part Number
0.69 x 0.79in	3.94in (100mm)	CH-16-F-SS-0M1-SD
(17.5 x 20mm)	11.81in (300mm)	CH-16-F-SS-0M3-SD
	19.69in (500mm)	CH-16-F-SS-0M5-SD
	35.43in (900mm)	CH-16-F-SS-0M9-SD

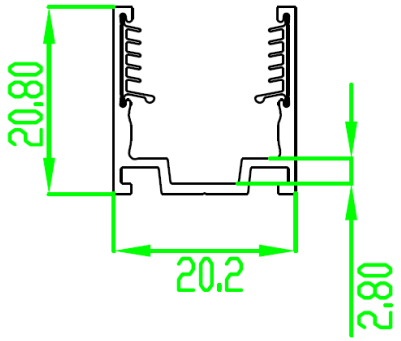
100/300/500/900m m

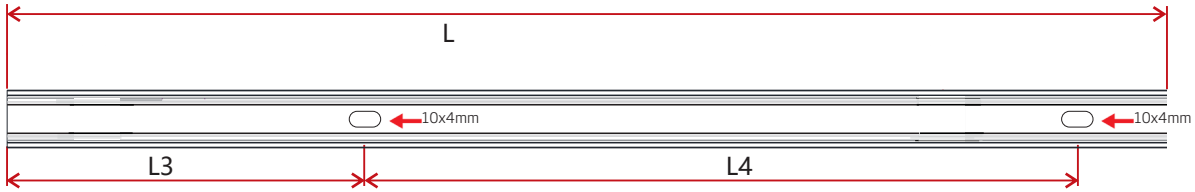


This profile can be mounted using screws in any gaps where the channel bends.

Standard Aluminum Channel with Silicone Grip

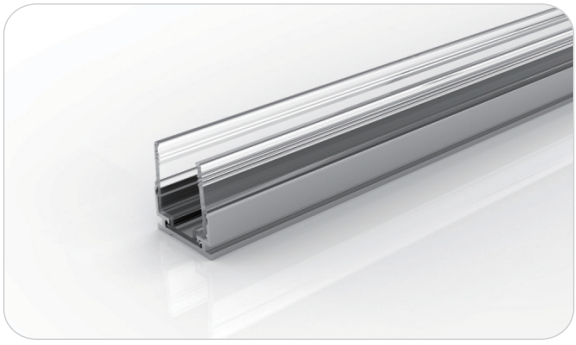


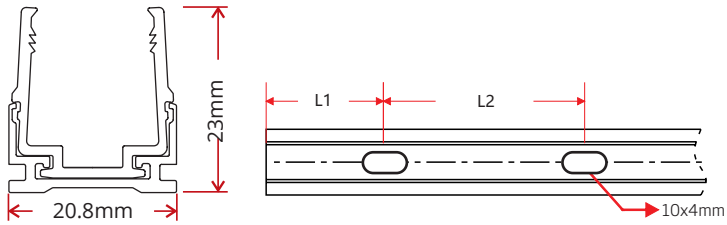




W x H	Standard Length	Part Number	L3	L4	Screw Hole Φ	Hole #
0.82 x 0.88in	0.79in (20mm)	CL-16-R-AL-02C-SE	0.2in (5mm)	0.98in (25mm)	0.39in x 0.16in (10 x 4mm)	1
(20.7 x 22.3mm)	19.69in (500mm)	CH-16-R-AL-0M5-SE	1.97in (50mm)	7.87in (200mm)	0.39in x 0.16in (10 x 4mm)	3
	39.37in (1000mm)	CH-16-R-AL-01M-SE	3.94in (100mm)	7.87in (200mm)	0.39in x 0.16in (10 x 4mm)	5
	78.74in (2000mm)	CH-16-R-AL-02M-SE	3.94in (100mm)	7.87in (200mm)	0.39in x 0.16in (10 x 4mm)	10

Plastic & Aluminum Channel





W x H	Standard Length	Part Number	L1	L2	Screw Hole Φ	Hole #
0.82 x 0.91in	1.38in (35mm)	CL-16-R-AP-3C5-SD	0.69in (17.5mm)	/	0.39in x 0.16in (10 x 4mm)	1
(20.8x 23mm)	19.69in (500mm)	CH-16-R-AP-0M5-SD	1.97in (50mm)	7.87in (200mm)	0.39in x 0.16in (10 x 4mm)	3
	39.37in (1000mm)	CH-16-R-AP-01M-SD	3.94in (100mm)	7.87in (200mm)	0.39in x 0.16in (10 x 4mm)	5
	78.74in (2000mm)	CH-16-R-AP-02M-SD	3.94in (100mm)	7.87in (200mm)	0.39in x 0.16in (10 x 4mm)	10

Certifications

	Testing Organization	Certificate Serial N°	Report Reference
UL 2108	UL	20160726-E360029	E360029-2013
CE-EMC	SGS	SZEM1702001259LMV	SZEM160600421302

Fixture Testing

Optical Testing

Spectrum Analysis	IES LM 79 (Lumen, CCT, CRI, XY, SDCM, wavelength)
Photometric Distribution	IES LM 73 (Lumen intensity distribution & Lux diagram)
Lumen Maintenance & Lifetime	IES LM 84 & IES TM28

Temperature Testing

Normal Temperature Test	UL1598 & UL2388 & IEC60598-1 & IEC60598-2-21
Abnormal Operation Test	UL1598 & UL2388 & IEC60598-1 & IEC60598-2-21

Durability Testing

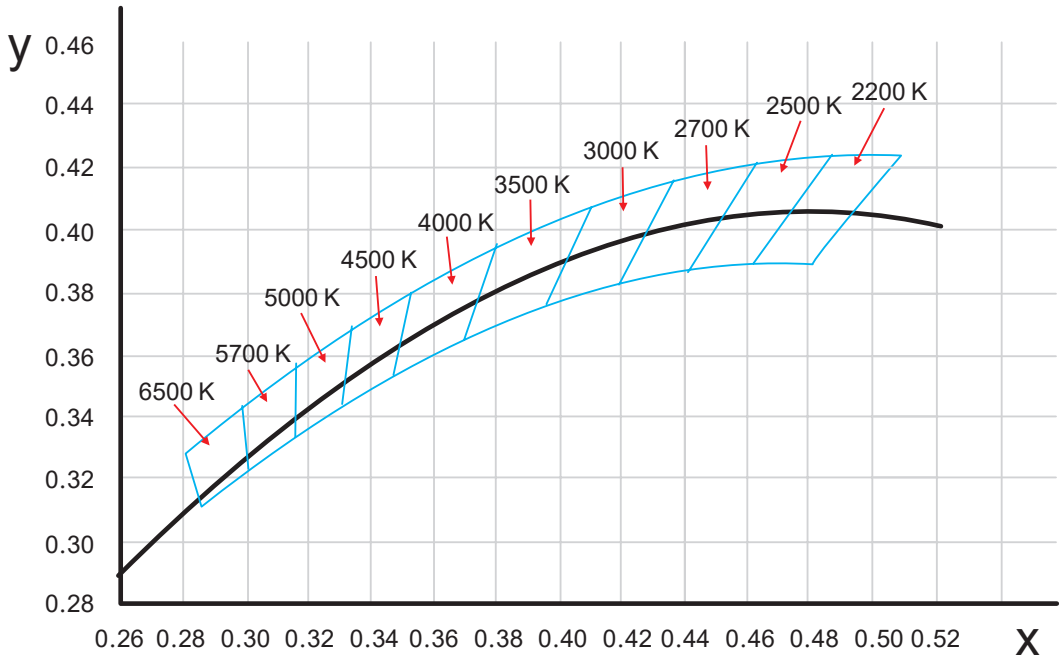
Bending Test	Manufacturer-defined, 500 cycles
Swing Test	UL2388, >750 cycles
Tensile Test	Manufacturer-defined, > the weight of light in max. connection length double feed
Twist Test	Max connection length double feed Manufacturer-defined, >200 cycles
Ball Impact	UL1598 & UL2388 & IEC60598-1 & IEC60598-2-21
IK07 IK08	IEC62262

Environmental Testing

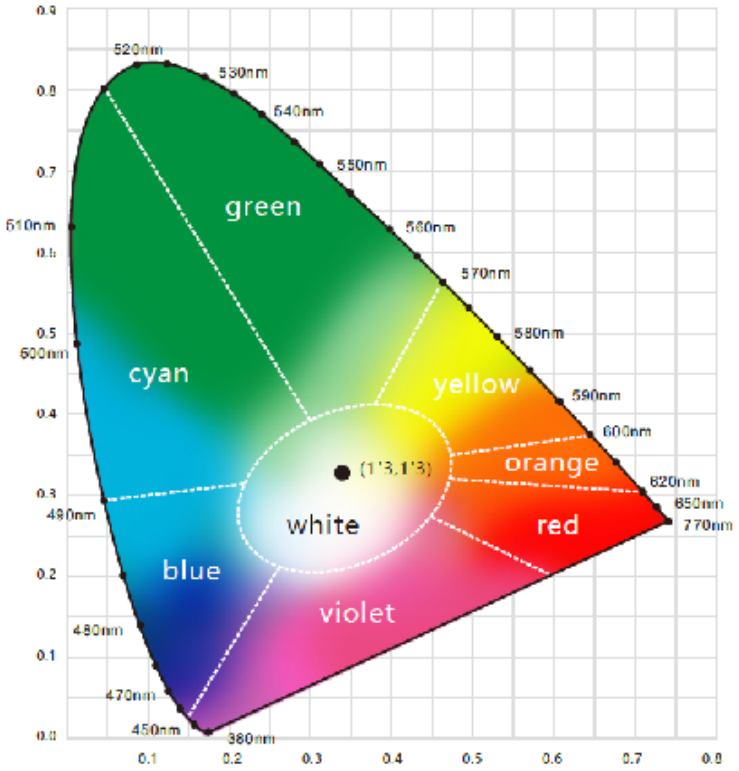
Chlorinated Water Immersion	BG9667, PH6.8-7.6, free chlorine 0.3-0.6mg/L
Salt Water Immersion	IEC60598-1, Sailinity 4%
Salt Spray Test	IEC68-2-11
Outdoor Exposure	Manufacturer-defined
Flame Resistance	UL94
UV Exposure	ASTMG 154, ISO 4892-3, UVA @ 340nm
IPX5, IPX6, IPX7, IPX8	IEC60529
Temperature Shock	Manufacturer-defined, -40°C - 60°C (typical temperature range)
Constant Temperature	Manufacturer-defined

Charts

(X,Y) Chromaticity Diagram



Wavelength of Color Light



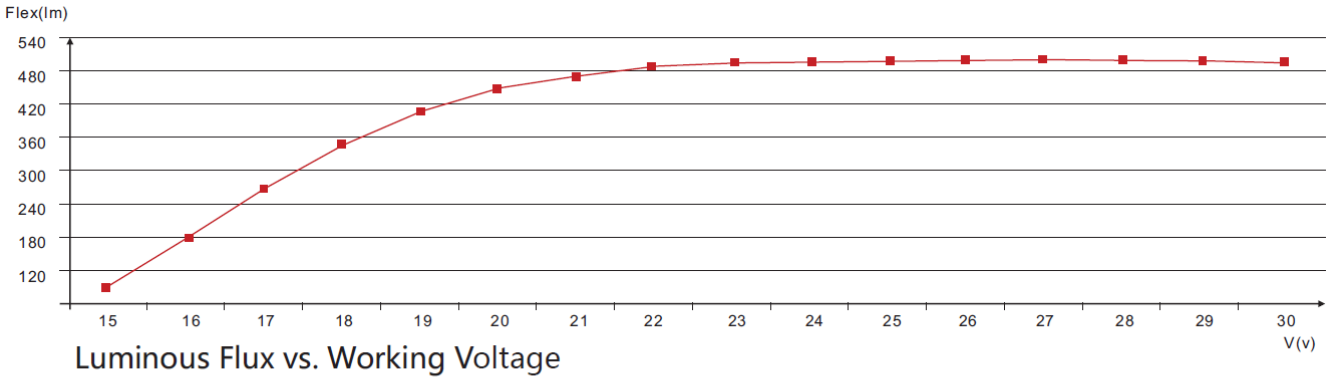
Light Color

Red
618-624nm

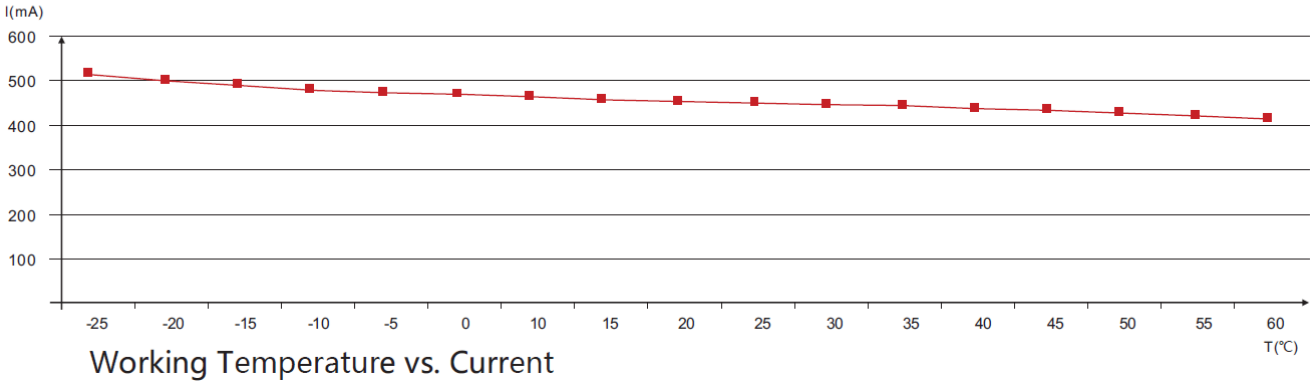
Green
522-528nm

Blue
468-474nm

Charts



Luminous Flux vs. Working Voltage



Working Temperature vs. Current

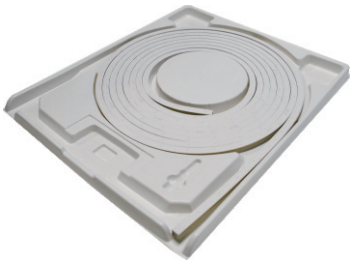
ANSI STANDARD

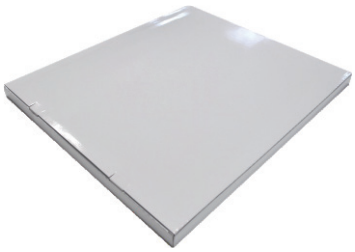
Nominal CCT Categories

Nominal CCT	Target CCT and tolerance(K)	Target D_{uv}	D_{uv} Tolerance Range
2200K	2238 ±102	0.0000	Tx:CCT of the source
2500K	2460±120	0.0000	For Tx<2870K
2700K	2725 ±145	0.0000	0.000±0.0060
3000K	3045±175	0.0001	For Tx≥2870K
3500K	3465±245	0.0005	Duv(Tx)±0.0060
4000K	3985±275	0.0010	where
4500K	4503±243	0.0015	Duv(Tx)=57700 x (1/Tx)2
5000K	5029±283	0.0020	-44.6 x (1/Tx)
5700K	5667±355	0.0025	+0.00854
6500K	6532±510	0.0031	
Flexible CCT (2200-6500K)	T_F [1] ±ΔT [2]	$D_{uv}T_F$ [3]	

Remark:

1) T_F is chosen to be at 100K steps (2300,2400,.....,6400K),excluding the ten nominal CCTs listed in Table 1.
2) $\Delta T=1.1900x10^{8}xT^{3}-1.5434x10^{4}xT^{2}+0.7168xT-902.55$
3) Same as in the D_{uv} Tolerance Range.





White Box





Packing Box

Fixture Length	White Box Dimensions	Packing Box Dimensions	# Of White Boxes	Package Weight
196.85in (5m)	15.35x2.05x19.67in (39x5.2x50cm)	20.47x15.34x11.02in (52x41x28cm)	5	30.86lbs (14kg)
393.7in (10m)	20.08x2.05x24.41in (51x5.2x62cm)	25.2x20.87x11.02in (64x53x28cm)	5	57.32lbs (26kg)
393.7in (10m)	20.08x2.05x24.41in (51x5.2x62cm)	25.2x20.87x6.9in (64x53x17.5cm)	3	35.27lbs (16kg)
787.4in (20m)	26.77x2.05x31.1in (68x5.2x79cm)	31.9x27.56x4.92in (81x70x12.5cm)	2	48.5lbs (22kg)