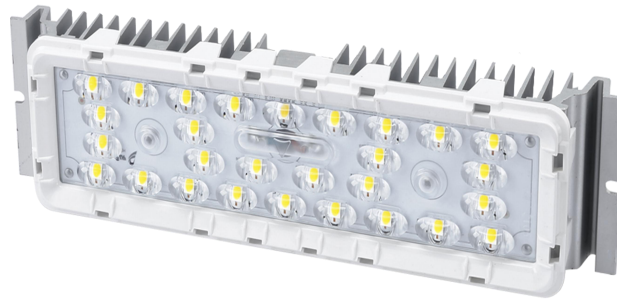


Specifications

LED Module M16H-H Series



Features

- Customized Lumileds LED;
- IP68 rated modules;
- 5VA rated for fire resistance;
- Lumen flux: up to 8900lm per module;
- Low maintenance cost with lifetime 68,763hrs (L70);
- Multiple lighting distribution options available;
- Optical lens transmittance up to 95%;
- Multiple modules can easily be connected in series via connector offering;
- 5 years warranty;
- Approvals:



Applications

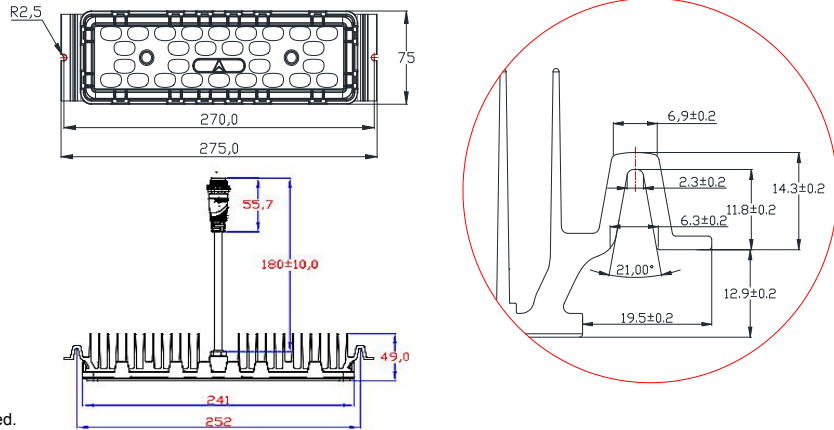
- Street Lighting
- Tunnel Lighting
- Flood Lighting
- High/Low Bay Lighting

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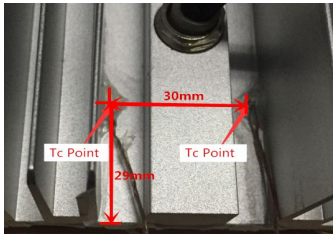
Mechanical Drawings

Dimensions
275x75x49mm
Net Weight
0.67±0.05kg



Tolerance: ±2.0mm, unless otherwise specified.

Performance

Series	Lighting Source	Drive Current	Nominal CCT	Minimum CRI [3]	Minimum Flux [1][2][3]	Typical Flux [1][2][3]	Typical Efficacy [1][2][3][4]	Color Consistency	T _c [4]	Location of T _c Point
M16H-H	28 x Lumileds Luxeon 5050 LEDs (customized)	800mA	3000K	70	5840lm	6150lm	171lm/W	In 7 SDCM (customized)	45.4°C	On the heat sink of the module, 29mm from the edge and 30mm apart (15mm on either side of the centerline of the module). 
			4000K		5930lm	6250lm	174lm/W			
			5000K		5930lm	6250lm	174lm/W			
			5700K		5930lm	6250lm	174lm/W			
		1200mA	3000K	70	8300lm	8750lm	162lm/W		55.6°C	
			4000K		8450lm	8900lm	165lm/W			
			5000K		8450lm	8900lm	165lm/W			
			5700K		8450lm	8900lm	165lm/W			

Notes: [1] Flux and efficacy values above are based on steady-state measurements done in 25°C ambient temperature where there is a tolerance of ±3°C on T_c.

[2] Flux and efficacy data above are based on lens transmittance 94%.

[3] Lumileds LED maintains a tolerance of ±7% on luminous flux and ±2 on CRI.

[4] Theoretically calculated T_c value based on maximum T_s 105°C as per warranty.

Item	Minimum	Typical	Maximum
Forward Voltage (@ 800mA, T _c =45.4°C) [5][6]	40V	45V	54V
Power Consumption (@ 800mA, T _c =45.4°C) [5]	32W	36W	43.2W

Notes: [5] Voltage, power and efficacy values are based on calculated LED values @100% driver efficiency.

Use for reference only since temperature and LED driver current have influence on forward voltage and on power consumption.

[6] Lumileds LED maintains a tolerance of ±1% on forward voltage measurements.

Current	L70 [7]	Test Hours
800mA	68,763 hrs	12,000hrs
1200mA	68,763 hrs	12,000hrs

Notes: [7] LM-80 test is still ongoing.

Current	@800mA	@Maximum 1200mA [8]	Maximum Power
Maximum T _c [4]	101.8°C	100.3°C	60W

Notes: [8] Maximum drive current being 1200mA to prevent the system power from getting higher than 60W (with tolerance of +3W).

IP Rating	Storage Temperature	Relative Humidity
IP68	-40~+50°C	10%~90%

Beam Type

For Street Light Applications

Lens Code	M16H-H-T1S (Type I Short)	M16H-H-T2S (Type II Short)
For Modules Parallel with Road	Lens Transmittance: 95%	Lens Transmittance: 95%

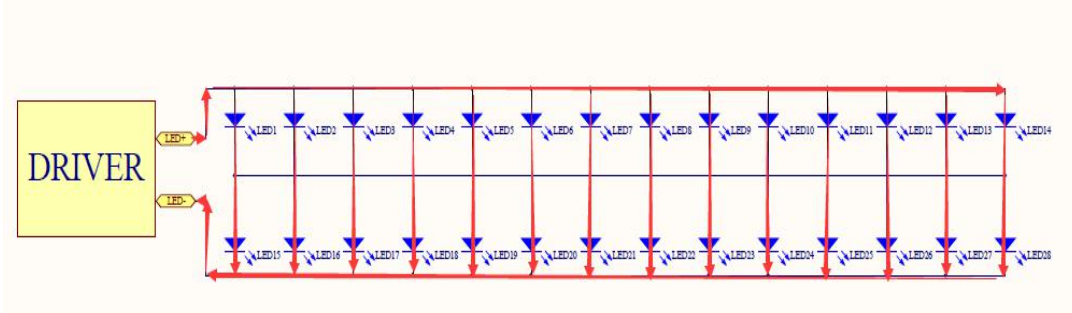
For Flood/ High/ Low Bay Light Applications

Lens Code	M16H-H-25D	M16H-H-40D	
Central Symmetry	Beam Angle (FWHM): 25°	Beam Angle (FWHM): 40°	
	Lens Transmittance: 94%	Lens Transmittance: 94%	
		M16H-H-60D	M16H-H-90D
	Beam Angle (FWHM): 60°	Beam Angle (FWHM): 90°	
	Lens Transmittance: 94%	Lens Transmittance: 94%	

Notes: — C0/180 — C90/270

Installation guide: the arrow on the lens (parallel with C90/270) should be perpendicular to road and directs to road center.

Circuit Diagram













Drivers Recommendation

Drive Current	Module Quantity	Approximate System Power	Driver Brand	
			Inventronics	Philips
700mA	For 1 module in series	35W	EUC-042S070DS ^{[4][5]}	-
800mA	For 2 modules in series	80W	EUG-096S105DT	XI100C110V143BSY1 ^[5]
	For 3 modules in series	120W	EUG-150S105DT	XI180C090V285BSF1 ^[5]
	For 4 modules in series	150W	EUG-200S105DT	XI180C090V285BSF1 ^[5]
	For 5 modules in series	200W	EUG-240S105DT	XI300C150V300BSR1 ^[5]
1200mA	For 1 module in series	60W	EUG-075S175DT	XI095C275V054BSS1 ^[5]
	For 2 modules in series	120W	EUG-150S210DT	XI180C125V200BSF1 ^[5]
	For 3 modules in series	180W	EUG-240S210DT	XI180C125V200BSF1 ^[5]
	For 4 modules in series	240W	EUD-240S150DT ^[5]	XI300C150V300BSR1 ^[5]
	For 5 modules in series	300W	EUD-320S150DT	XI300C150V300BSR1 ^[5]

Notes:

1. Alternative board + driver configurations can be evaluated upon request.
2. Please refer to the driver datasheet for detailed specifications.
3. All drivers feature 0-10V dimming.
4. Output current of all drivers above can be adjusted EXCEPT Inventronics EUC-042S070DS.
5. Inventronics EUC-042S070DS, EUD-240S150DT and all Philips drivers should work with a line-earth 10KV SPD for outdoor lighting application.

Waterproof Connectors Recommendation

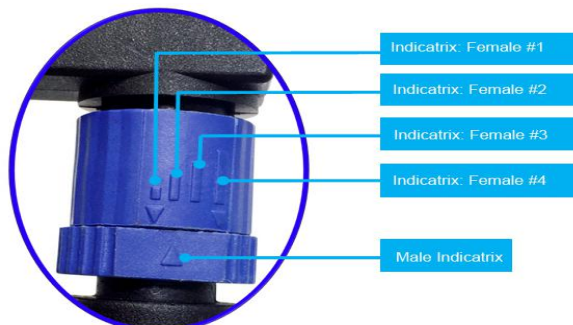
Picture	Model	Description	Length
	C2A-01F500	IP68 male connector	Single male terminal 55.7mm + flying leads 550±50mm
	C2A-01M500	IP68 female connector for 1 module	Single female terminal 54.4mm + flying leads 550±50mm
	C2A-S2M500	IP68 female connector for 2 modules in series	Dual female terminal 78mm + flying leads 550±50mm
	C2A-S3M500	IP68 female connector for 3 modules in series	Triple female terminal 113mm + flying leads 550±50mm
	C2A-S4M500	IP68 female connector for 4 modules in series	Quad female terminal 148mm + flying leads 550±50mm
	C2A-S5M620	IP68 female connector for 5 modules in series	Quad female terminal 183mm + flying leads 620±50mm
	C2A-1FS1M	IP68 male and female connector for extension	Single female terminal 54.4mm + cable 200±20mm + single male terminal 55.7mm
	C2A-S2M200F	IP68 male and female connector for 2 modules in series	Dual female terminal 78mm + cable 200±20mm + single male terminal 55.7mm
	C2A-S3M200F	IP68 male and female connector for 3 modules in series	Triple female terminal 113mm + cable 200±20mm + single male terminal 55.7mm
	C2A-S4M200F	IP68 male and female connector for 4 modules in series	Dual female terminal 148mm + cable 200±20mm + single male terminal 55.7mm

Notes: The connectors are allowed to be used in combination for 5-module connection and extending purpose.

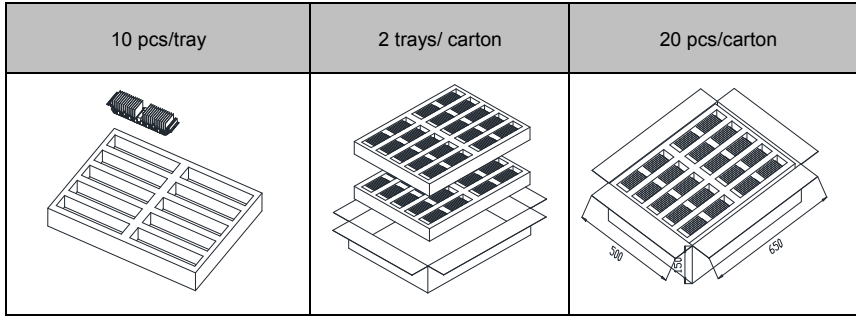
Cable Specifications	Withstanding DC Voltage	Withstanding Current	Certification	Working Temperature
2x18 AWG	420Vdc	10A	UL	-40~+80°C

Operation Guide: Spin the male terminal clockwise.

When the male indicatrix points between indicatrix female #2 and #3, and the gap between male and female terminals is extremely small, the connectors are well connected; otherwise, there will be risks in its waterproof performance. When the gap between male and female terminals is extremely small, if any looseness can be sensed, please spin the male terminal clockwise until tight.



Packaging



Notes:

1. Carton dimensions: 650x600x150mm
2. Gross weight: 17.5kg (Empty package: 2.8kg)

Module Part Number

Example:

M16H **H** **T1S** **L50** **730**
 1 2 3 4 5

1. Module Series	2. Voltage	3. Beam Type	4. LED Type	5. CRI/CCT
M16H - High Power LED's	H = 40-54V	T1S = Type I Short T2S = Type II Short 25D = 25DEG 40D = 40DEG 60D = 60DEG 90D = 90DEG	L50 = Customized Lumileds Luxeon 5050	730 = 70CRI/3000CCT 740 = 70CRI/4000CCT 750 = 70CRI/5000CCT 757 = 70CRI/5700CCT