

*ADVANCED ENERGY SOLUTIONS*

# **FACADE & INDUSTRIAL LIGHT SOLUTIONS**

**PRODUCTS  
PORTFOLIO**



# LIGHT IS LIFE

*Lighting says everything about the working environment.  
Lighting is at the heart of the way people think and build.*

*Modern lighting requires products and services of the highest standards, innovative solutions, technical excellence, design flexibility and consistent performance.*

*ADVANCED ENERGY SOLUTIONS COMPANY was established to meet the highly growing demands of energy management and energy efficiency.*

*Either you own small facility or large plant we are here to give you the best solution in the field.*

*With a talented highly qualified engineering team we are striving to meet the highest standards using state of the art technologies to meet all requirements of our customers.*

*Our team also provide scientifically certified lighting studies.*



**MADE IN KSA**

*Our collection are manufactured with high quality in accordance with national/international standards with specifications to meet the harsh climate of the Arab Gulf countries.*

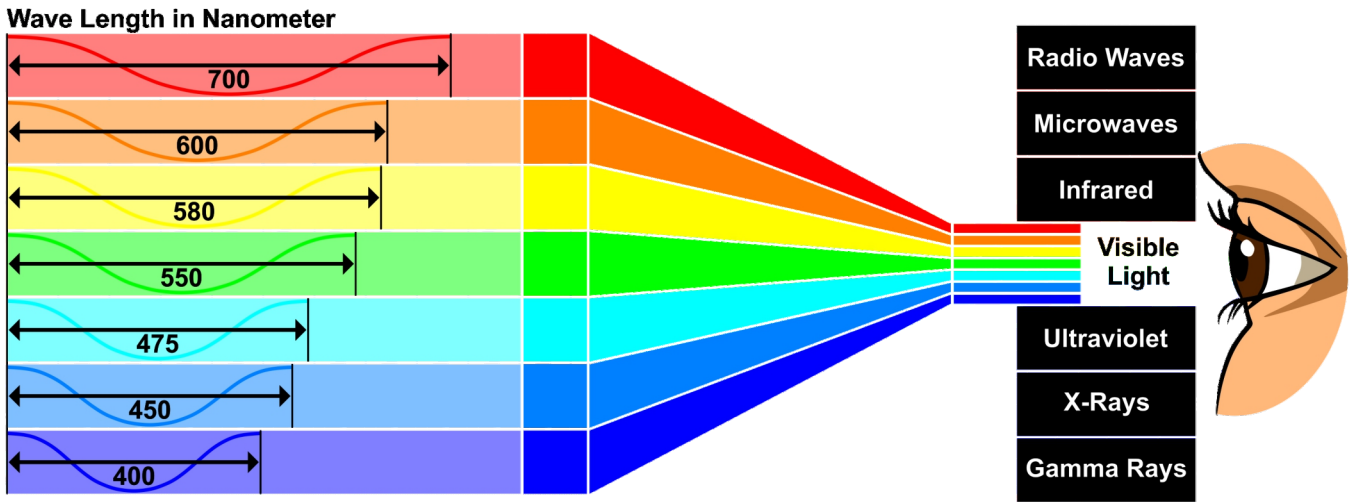
*We offer a five-years warranty on all of our fixtures, as we design and calculate the body of the fixture in accordance with the LED chip and the driver to ensure the efficiency and quality of the product.*

*Whether indoor or outdoor fixtures with 50K hours working life and up to 100K hours as an option.*



**50,000 working hours**

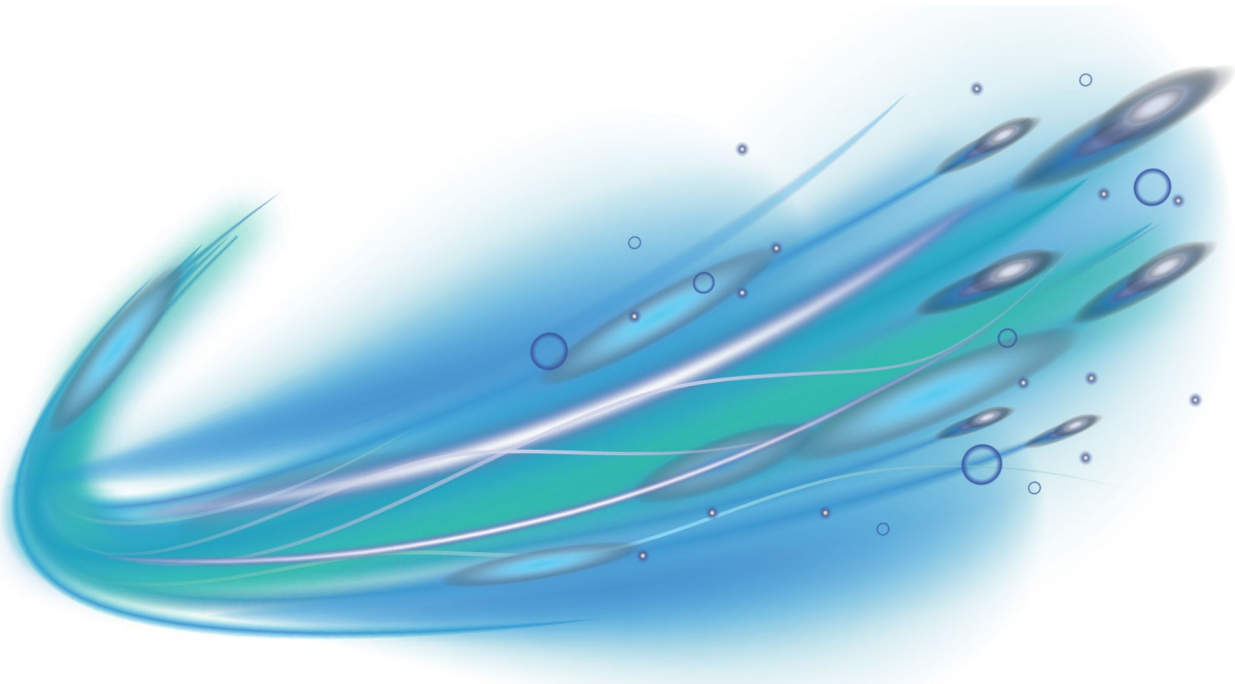
# INTRODUCTION TO LIGHT SCIENCE



Light or visible light is electromagnetic radiation within the portion of the electromagnetic spectrum that can be perceived by the human eye. Visible light is usually defined as having wavelengths in the range of 400–700 nm, between the infrared (with longer wavelengths) and the ultraviolet (with shorter wavelengths).

The main source of light on Earth is the Sun. Historically, another important source of light for humans has been fire, from ancient campfires to modern LED lamps, the development of solid state materials and electronic systems give the chance of artificial lighting to simulate sun light with maximum efficiency.

The primary properties of visible light are intensity, propagation direction, frequency or wavelength spectrum.





## CORRELATED COLOR TEMPERATURE (CCT)



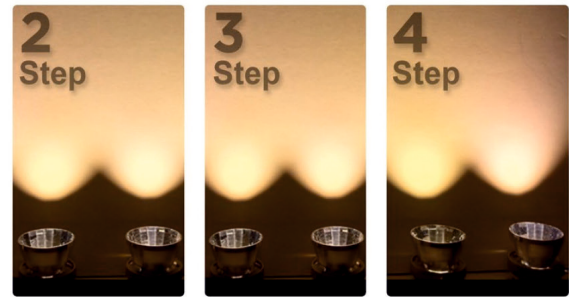
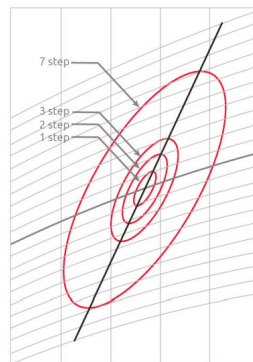
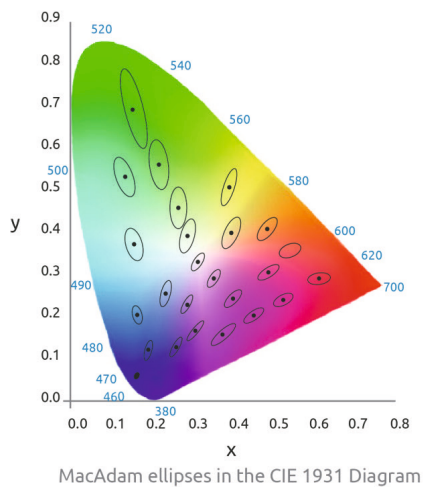
## COLOR RENDERING INDEX (CRI)



It is a quantitative measure of the ability of a light source to reveal the colors of various objects faithfully in comparison with an ideal or natural light source like sunlight, the CRI of the sunlight is 100, that means if the CRI is close to 100 the colors will be reflected truly and naturally, the illustration above shows how CRI can affect the appearance of colors.



## MACADAM ELLIPSE



n-steps MacAdam ellipses

MacAdam ellipse is a region on a chromaticity diagram (CIE 1931) which contains all colors which are indistinguishable to the average human eye, from the color at the center of the ellipse.

Slight color differences in the appearance of LED light are measured in steps, the higher the N-steps, the greater the visual difference between two white light sources.

## DIMMING OF LIGHT



Dimmers are devices connected to a light fixture and used to lower the brightness of light, you can use several different dimming options to dim LED Lighting, as phase cut (Triac), 0/1-10v dimming and DALI system, but beware that the driver must support type of dimming you use.

### A-Phase Cut (Triac) dimming:

This type of control is a traditional one, accomplished without any need for an additional control wires. It involves connecting a dimmer in series between one of the mains wire and the equipment.

### B-0/1-10v dimming:

The 0/1-10V system enables dimming of the brightness from around 10% to 100%. This is done by sending an analogue signal (0/1-10v) to the equipment over an additional two wires control system.

### C-DALI system:

Digital Addressable Lighting Interface, DALI is a digital and addressable communication interface for lighting systems. Digital signals are transmitted over a bus of two-wire control wire, used for control of large systems.

## BEAMS OF LIGHT

*Beam of light is a directional projection of light energy radiating from a light source. Different beam angles are better for certain cases;*

*For example :*

*A display of shop goods might need a spotlight with a very narrow beam, while for office lighting you will need a wide beam fixture.*

*There are also special cases where beams are not symmetrical, as in street light where special type of lenses are used to distribute light.*

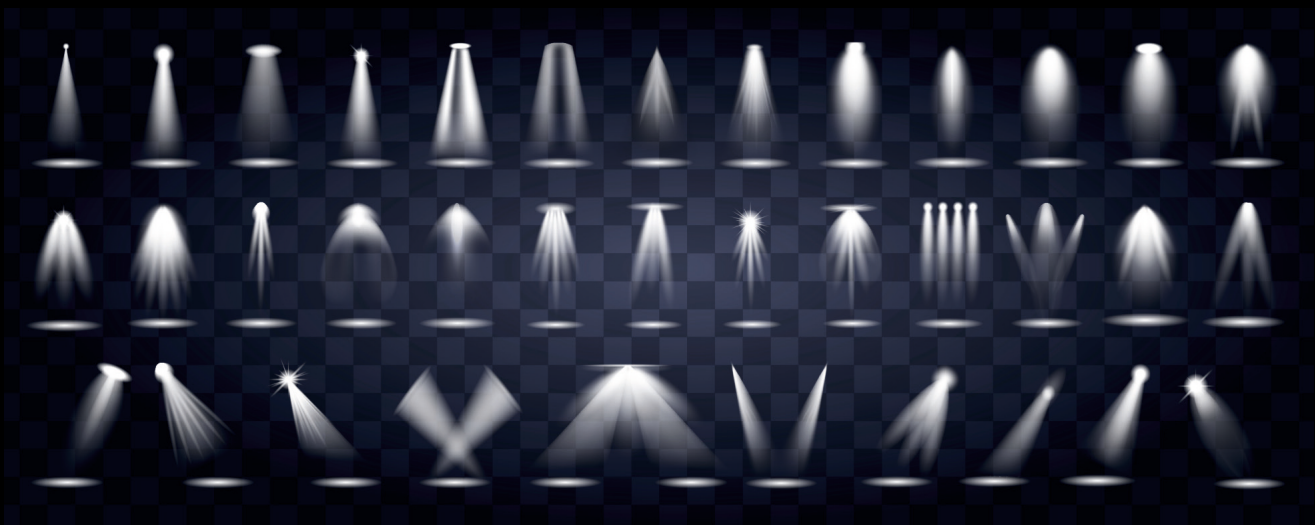
### • HOMOGENEOUS BEAMS

#### • Wide Beams

*Wide beam angle is usually used for general lighting, like office rooms and school rooms, wide beam fixtures are characterize by soft and anti-glare diffusing system with low UGR.*

#### • Narrow Beams

*Narrower beam angle is preferable when you need to illuminate surfaces and focus on smaller details.*



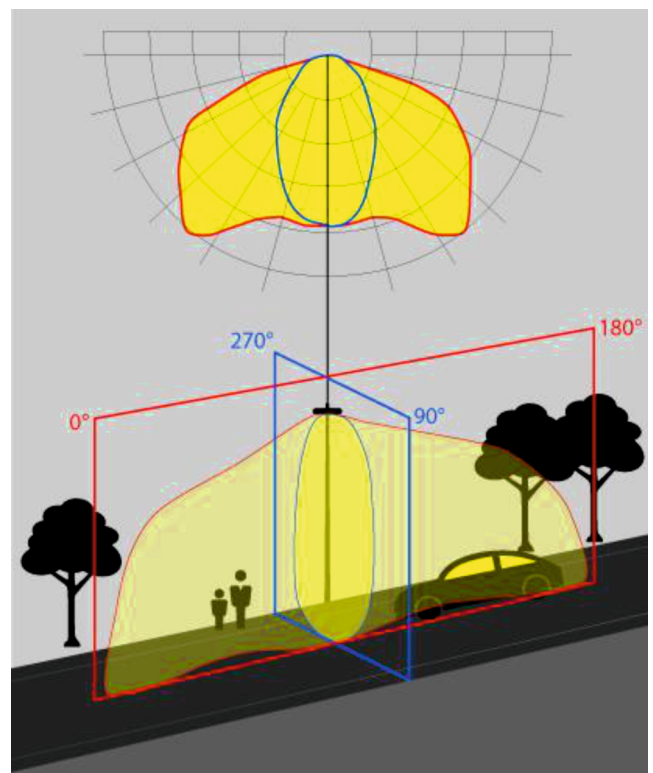
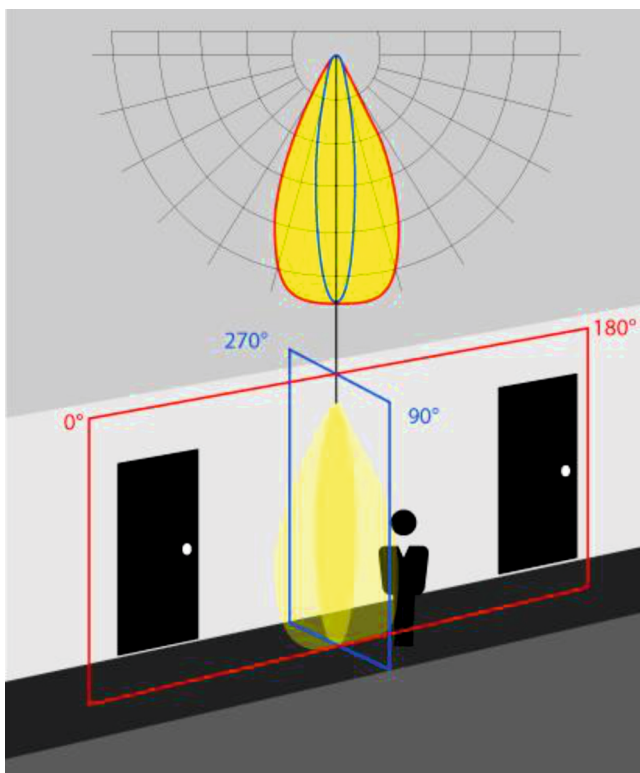
## • SPECIAL BEAMS

### • Street Light Beams

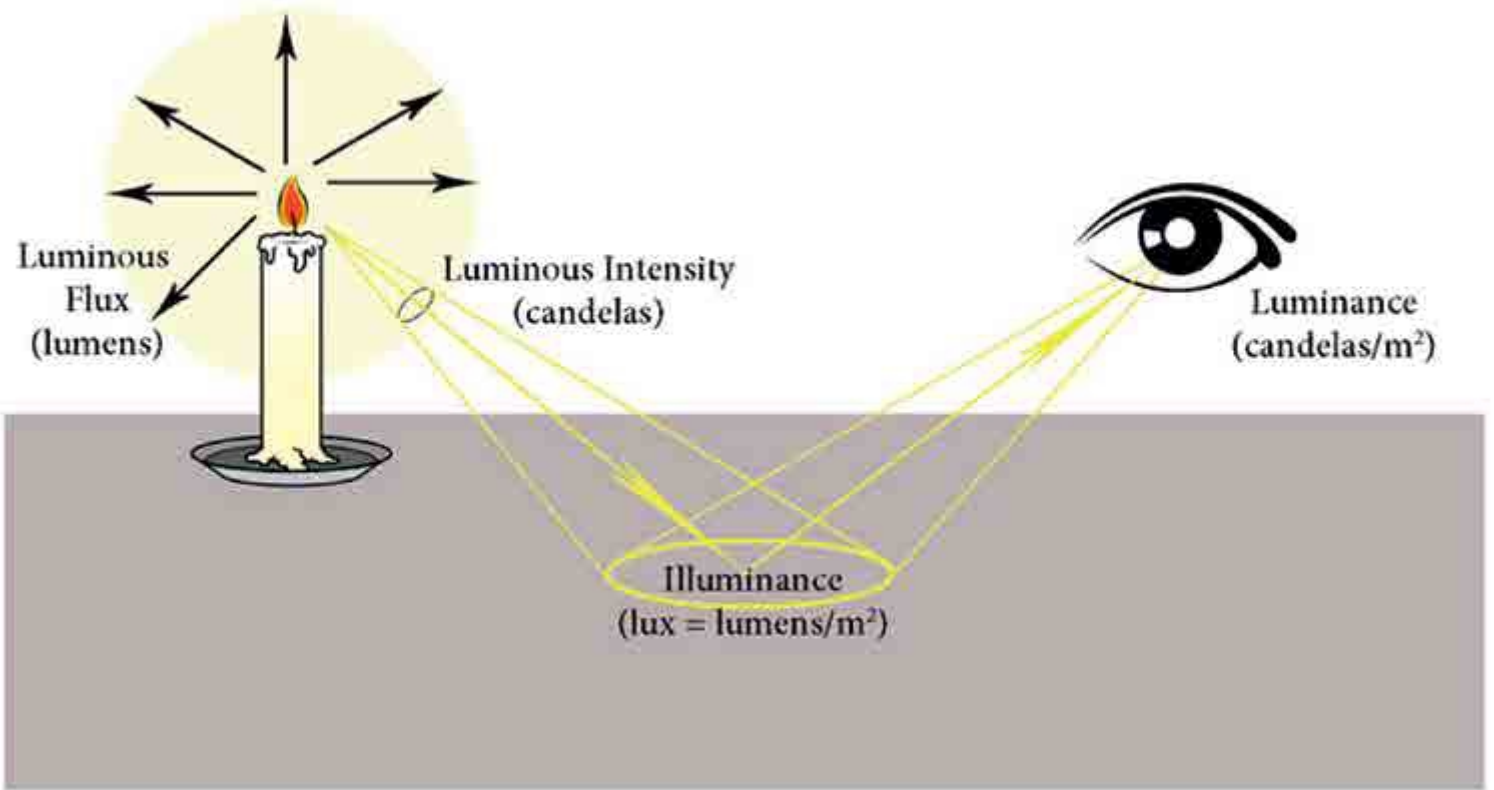
We use special lenses for street light, because beam angles of the street light need to be guided to specific direction to meet the requirement of the road, highways, multi-lane wide street, alleys.

## LIGHT DISTRIBUTION CURVE

Light distribution curve is a visual representation of the light diffused by a luminaire. This graph tries to transpose a three dimensional concept (the light diffusion of a lamp or fixture in a space) onto a two dimensional medium.



# MEASUREMENTS OF LIGHT



## LUMINOUS FLUX (LUMENS-LM)

The luminous flux describes the quantity of light emitted by a light source.

Radiant flux is the measure of the total power of electromagnetic radiation (including infrared, ultra violet, and visible light), luminous flux describe the quantity derived from radiant flux (radiant power) by evaluating the radiation in accordance with the spectral sensitivity of the human eye. Without further specification, it refers to the initial luminous flux.

## LUMINOUS EFFICACY (lm/w)

It is the ratio of the luminous flux to the electrical power consumed (lm/W). It is a measure of a light source's economic efficiency, and it indicates of how well a light source produces visible light.

## LUMINOUS INTENSITY (CANDELA OR cd) $I = \frac{\Phi}{\Omega}$

Means the total of the luminous flux leaving the source and propagated in the element of solid angle containing the given direction.

## ILLUMINANCE (LUX) $E = \frac{\Phi}{A}$

Illuminance means the quantity of light (luminous flux) hitting the surface A.

## LUMINANCE (CD/M<sup>2</sup>) $L = \frac{I}{A_L \cdot \cos\epsilon}$ $L = \frac{E \cdot \rho^*}{\pi}$

It describes on one hand a light source's impression of brightness, and on the other hand a surface specific-ations, and therefore depends to a large extent on the degree of reflection.

## FEATURE ICONS

**COLOR TEMPERATURE TUNING**



**ADJUSTABLE ANGLES**



**COLOR RENDERING INDEX 80**



**ALUMINUM BODY**



**RED, GREEN, BLUE & WHITE COLOR MODEL**



**INGRESS PROTECTION 20 OR 54**



**INGRESS PROTECTION 67**



**INDOOR INSTALLATION**



**INSULATION CONTACT**

Recessed Luminaires that have the IC rating Can have insulation up to the sides and covering them.



**INSULATION CONTACT - FIRE RESISTANT**

Recessed Luminaires that have the IC-Frating can have insulation abutted to and/or covering them. These down lights are also sealed so insulation cannot get into the fitting.



**CYANOSIS OBSERVATION INDEX**

Visual detection of cyanosis in a patient. For Hospital and medical tasks.



**EASY TO INSTALL**



**DIMMABLE**



**LUMINAIRE SUITABLE FOR DIRECT MOUNTING ON NORMALLY FLAMMABLE SURFACES**



**ONLY SUITABLE FOR MOUNTING ON NON COMBUSTIBLE SURFACES.**



**IMPACT PROTECTION**



## APPROVAL ICONS

**ILLUMINATING ENGINEERING SOCIETY CLASSIFICATION**



**THREE STEP MACADAM CHIPS**



**FIVE YEARS WARRANTY**



**GERMAN CONFORMITY**



**EUROPE CONFORMITY**



**RESTRICTION OF HAZARDOUS SUBSTANCES**



**QUALITY ASSURED FIRM ISO9001 CERTIFICATE**



**FEDERAL COMMUNICATIONS COMMISSION CERTIFICATE**



**REGULATORY COMPLIANCE MARK**



**CERTIFICATE BODY**



**SAUDI ARABIA CONFORMITY**



**APPLIANCE CLASS I**



**APPLIANCE CLASS II**



**APPLIANCE CLASS III**



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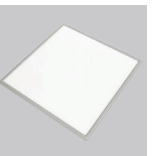


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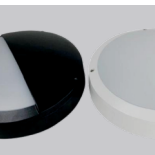
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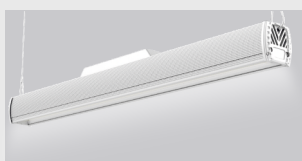
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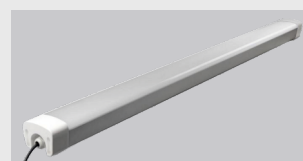
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# FACADE LIGHTING

With our collection of façade lighting you enhance your structures and heritage in an exciting and inspirational way. Watch your structure become more vibrant and attractive destination for business or pleasure.

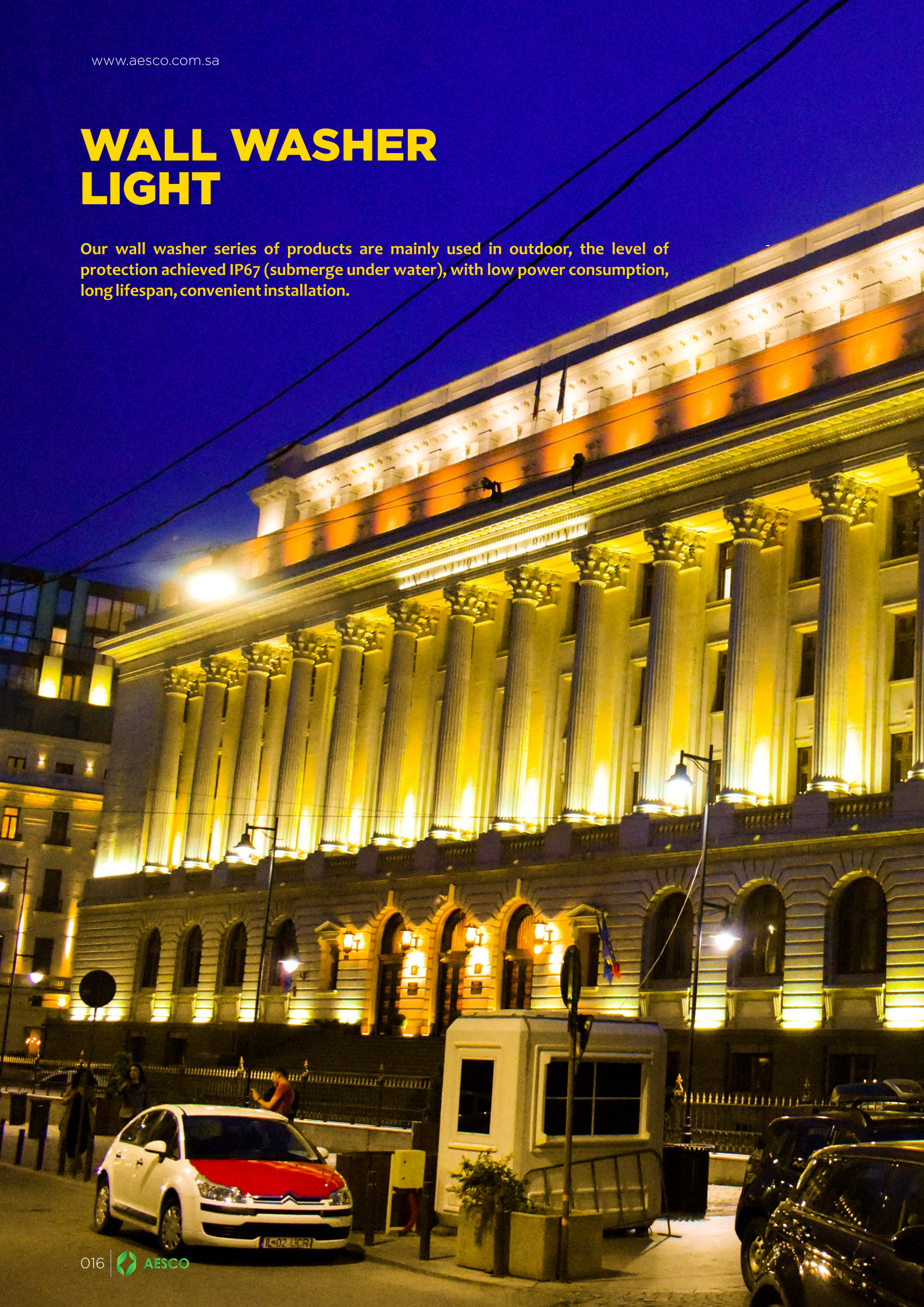






# WALL WASHER LIGHT

Our wall washer series of products are mainly used in outdoor, the level of protection achieved IP67 (submerge under water), with low power consumption, long lifespan, convenient installation.







## WALL WASHER



### APPLICATION

Wall washer series used in outdoor, come with two sizes 0.5m & 1m, the level of protection achieved IP67 (submerge under water). You can use it for: Building, advertisement, shopping mall, billboards, etc...

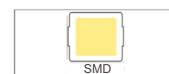
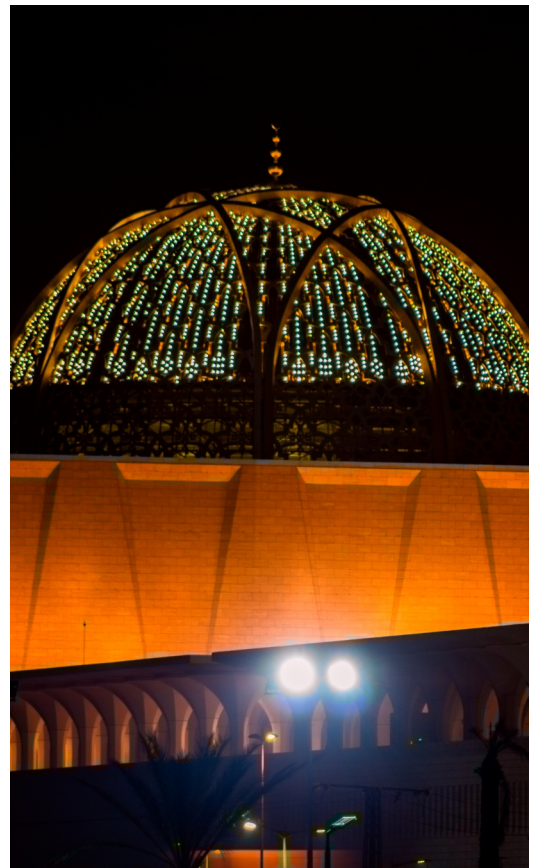
### APPROVALS & STANDARDS

IECEE certificate *	As per IEC60598-2-3:2002+A1:2011 IEC60598-1:2014+A1:2017
Power supply approval marks	UL/CSA/CE/ENEC/CCB/CCC
Degree of protection provided by enclosures, ingress protection(IP)	IEC 60529:2013

\*: Approvals and certificate are under process.

### TECHNICAL INFORMATION

FAMILY	CLASSIC WALL WASHER
Wattage/m	24W   36W
CRI	80   90
CCT	2700K   3000K   3500K   4000K   5000K   5700K   6500K
Beam	15°   30°   45°   60°
Lumen	2250.0lm   3240.0lm
Finish	Silver
Material	Die-casting aluminum body and heatsink, PMMA lenes
Driver	Tridonic   Philips   Lifud
Ambient (Ta) Temperature	-20°C to +50°C



**CREE**

**LUMILEDS**

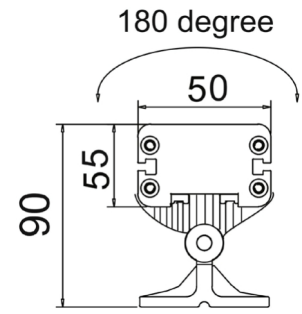
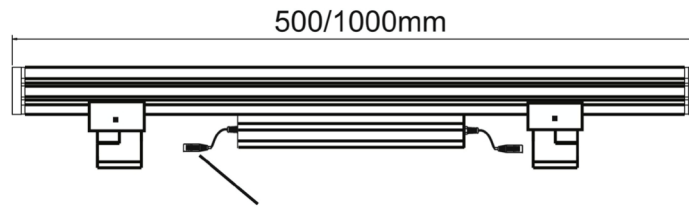
**NICHIA**

**OSRAM**



CUTOUT & DIMENSION

MODEL	POWER	DIMENSION
AESWW18A	18W	L500mm X W50mm*H90mm
AESWW24A	24W/36W	L1000mm X W50mm*H90mm



ORDERING INFORMATION

AESWW18A-24W-80-30-NR-15-PH-ND

Model	Wattage	CRI	CCT	Led Engine	Beam	DriverType	Dimming
AESWW18A	24W	80	30	NR	15°	Ph	ND
AESWW18A	24W	80	27 2700K	R RGB	15°	Tr Tridonic	ND Non Dim
AESWW24A	36W	90	30 3000K	NR Non RGB	30°	Ph Philips	VD 0/1-10VDim
			35 3500K		45°	Lf Lifud	DA DALI Dim
			40 4000K		60°		
			50 5000K				
			57 5700K				
			65 6500K				



## MINI WALL WASHER



### APPLICATION

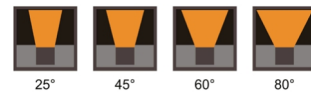
Mini Wall washer series used for outdoor applications, standard sizes are 0.5m & 1m which could be connected in parallel or series to achieve any required length.

With IP66 level of protection (submerge under water), the fixture could be mounted inside floors walls, or ceilings, Ideally suited for architectural, landscape, theaters, bridges, etc...



IECEE certificate *	As per IEC60598-2-3:2002+A1:2011 IEC60598-1:2014+A1:2017
Power supply approval marks	UL/CSA/CE/ENEC/CCB/CCC
Degree of protection provided by enclosures, ingress protection(IP)	IEC 60529:2013

\*: Approvals and certificate are under process.



### TECHNICAL INFORMATION

FAMILY	CLASSIC MINI W3
Wattage/m	11W   18W
CRI	80   90
CCT	2700K   3000K   3500K   4000K   5000K   5700K   6500K
Beam	25°   45°   60°   80°
Lumen	18W(724lm-928lm)   9W(362lm-464lm)
Finish	Silver
Material	Die-casting aluminum body and heatsink, PMMA lenes
Driver	Tridonic   Philips   Lifud
Ambient (Ta) Temperature	-20°C to +50°C



**CREE**

**LUMILEDS**

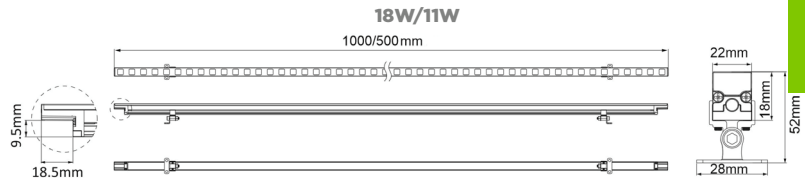
**NICHIA**

**OSRAM**



**CUTOUT & DIMENSION**

MODEL	POWER	DIMENSION
AESW324A	11W	L500mm * W28mm*H52mm
AESW348A	18W	L1000mm * W28mm*H52mm



**ORDERING INFORMATION**

AESW348A-18W-80-30-NR-25-PH-ND

Model	Wattage	CRI	CCT	Led Engine	Beam	DriverType	Dimming
AESW348A	18W	80	30	NR	25°	Ph	ND
AESW324A	11W	80	27 2700K	R RGB	25°	Tr Tridonic	ND Non Dim
AESW348A	18W	90	30 3000K	NR Non RGB	45°	Ph Philips	VD 0/1-10VDim
			40 4000K		60°	Lf Lifud	DA DALI Dim
			50 5000K		80°		
			57 5700K				
			65 6500K				

# INDUSTRIAL LIGHTING

The most needed places for good quality light is industrial areas. But industrial lighting is not just about lighting big halls, it is also about providing light for the people to do their work precisely with at most comfortability. Getting the right light lux levels on surfaces that need to be seen clearly, while at the same time reducing energy consumption is a necessity.

Furthermore smart lighting can be used to reduce energy where and when it is needed, good industrial lighting can make daily work easier, safer and more productive. Beside all of that the light fixture should work in hostile environment in terms of heat, moisture, dust and electrical disturbances.







BACKUP PUMP IN OPERATION IN CASE OF  
**E10**  
MOTOR  
MOTOR

WEST  
3.1

17

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BY: [Signature]



## UFO HIGH BAY STAR FAMILY



### APPLICATION

UFO series high bay LED light are designed to reach the limit of energy saving, with the usage of high efficacy LED we can go up to 140lm/w. Die-cast Aluminum housing, provides a better thermal conductivity. Meanwhile, the aerodynamic cooling fins set in a sparse pattern and the surrounding convection holes make it easier for air to efficiently flow through the heat sink; all contributes to the achievement of excellent heat management. Suitable for commercial and industrial, such as shopping mall, shopping center, office, airport, indoor gymnasium, warehouse, factory, etc...

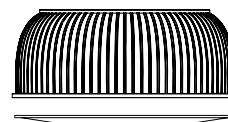
### APPROVALS & STANDARDS

Saudi Standard SASO 2902 *	Energy Efficiency, functionality & labeling requirements for lighting products -Part2-
IECEE certificate *	As per IEC60598-2-3:2002+A1:2011 IEC60598-1:2014+A1:2017
Power supply approval marks	UL/CSA/CE/ENEC/CCB/CCC
Degree of protection provided by enclosures, ingress protection(IP)	IEC 60529:2013

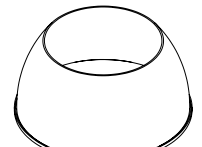
\*: Approvals and certificate are under process.

### TECHNICAL INFORMATION

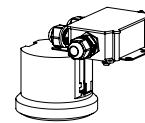
FAMILY	STAR
Wattage	80W   100W   120W   150W   200W
CRI	80
CCT	3000K   4000K   5000K   5700K   6000K   6500K
Beam	45°   90°   120°
Lumen	11200lm   14000lm   16800lm   21000lm   28000lm
Finish	Black
Efficacy	140 lm/w
Material	Die-casting aluminum body and heatsink, PMMA lenes
Driver	Tridonic   Philips   Lifud
Ambient (Ta) Temperature	-40°C to +45°C



PC reflector

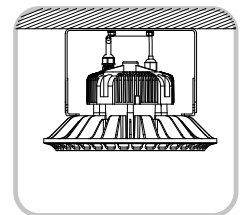
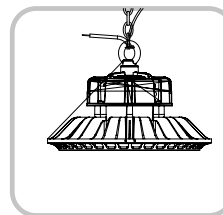


Aluminum reflector



Sensor bracket

### Mounting optional



OSRAM

CREE

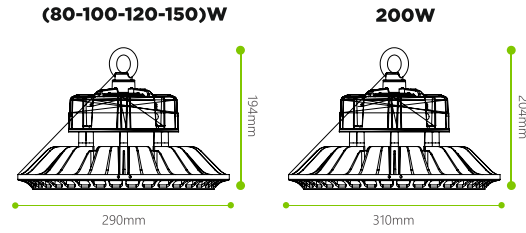
LUMILEDS

bridgelux

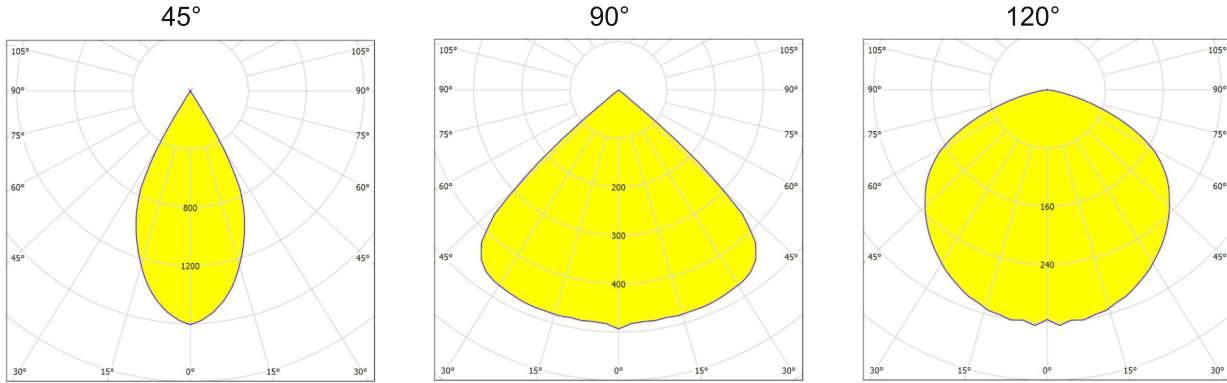


**DIMENSION**

MODEL	POWER	DIMENSION
AESUF1	80W	Ø290mm * H194mm
	100W	
	120W	
	150W	
	200W	



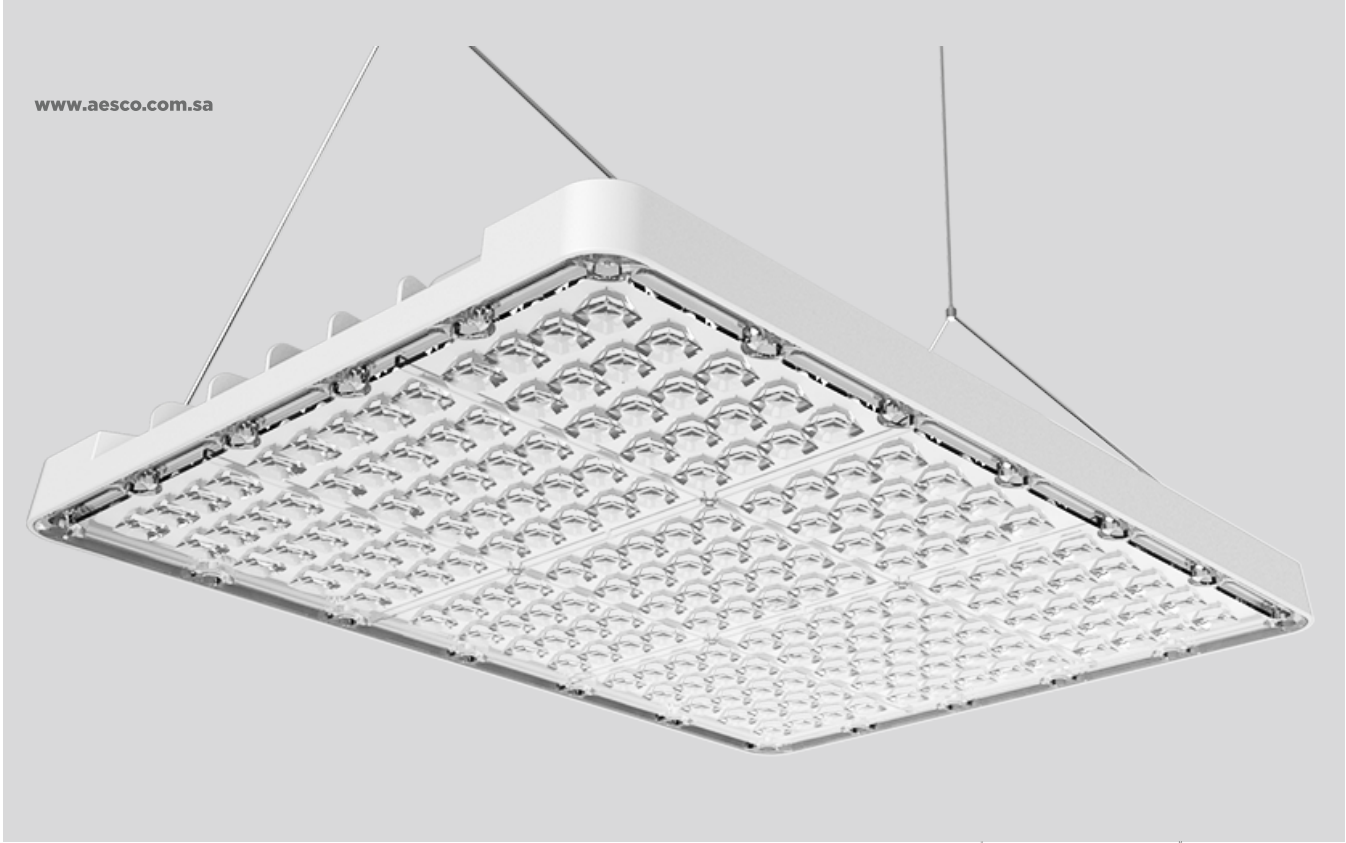
**LIGHT DISTRIBUTION DIAGRAM**



**ORDERING INFORMATION**

EXAMPLE : AESUF1-100W-30-90-Ph-ND

Model	Wattage	CCT	Beam	DriverType	Dimming
AESUF1	100W	30	90	Ph	ND
AESUF1	80W	27 2700K	40°	Tr Tridonic	ND Non Dim
	100W	30 3000K	90°	Ph Philips	VD 0/1-10VDim
	120W	40 4000K	120°	So Sosen	DA DALI Dim
	150W	50 5000K			
	200W	57 5700K			
		60 6000K			
		65 6500K			

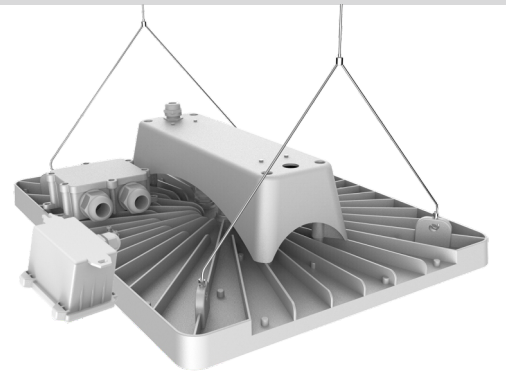


## DIAMOND HIGH BAY



### APPLICATION

Compact and flat design, large light-emitting area, with a driver cover, all these integrated into this distinctive rectangular shape high bay light. Made out of a single block of aluminum by die-casting, the heat sink with the unique structural design enables less installation time. Suitable for high temperature atmosphere and for commercial and industrial premises with high ceiling, such as shopping mall, shopping center, office, airport, indoor gymnasium, warehouse, factory, etc...



### APPROVALS & STANDARDS

Saudi Standard SASO 2902 *	Energy Efficiency, functionality & labeling requirements for lighting products -Part2-
IECEE certificate *	As per IEC60598-2-3:2002+A1:2011 IEC60598-1:2014+A1:2017
Power supply approval marks	UL/CSA/CE/ENEC/CCB/CCC
Degree of protection provided by enclosures, ingress protection(IP)	IEC 60529:2013

\*: Approvals and certificate are under process.



### TECHNICAL INFORMATION

FAMILY	DIAMOND
Wattage	100W   150W   200W
CRI	80
CCT	3000K   4000K   5000K   5700K   6000K   6500K
Beam	75°
Lumen	14000lm   21000lm   28000lm
Finish	Silver
Efficacy	140lm/w
Material	Die-casting aluminum body and heatsink, PMMA lenes
Driver	Tridonic   Philips   Lifud
Ambient (Ta) Temperature	-30°C to +50°C



OSRAM

CREE

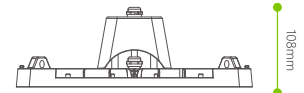
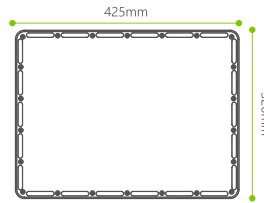
LUMILEDS

bridgelux



## DIMENSION

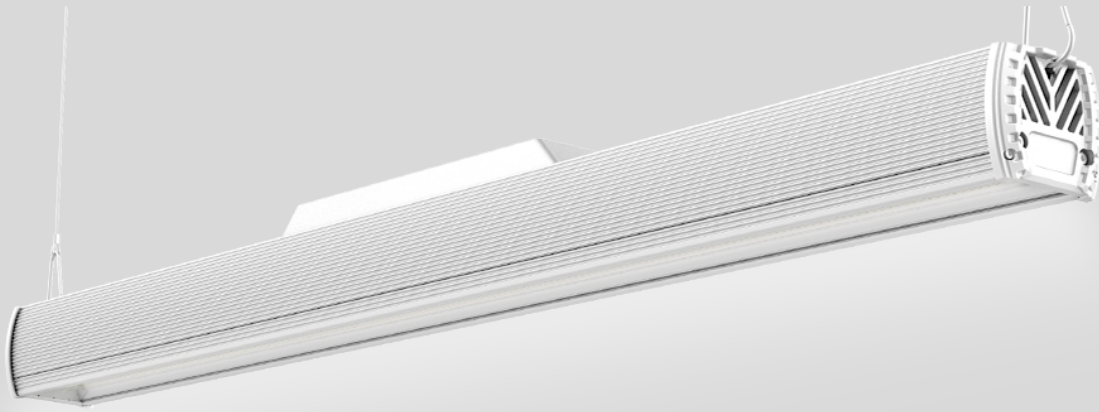
MODEL	POWER	DIMENSION
AESFE	100W	L425mm * W320mm*H108mm
	150W	
	200W	



## ORDERING INFORMATION

EXAMPLE : AESFE-100W-30-Ph-ND

Model	Wattage	CCT	DriverType	Dimming
AESFE	100W	30	Ph	ND
AESFE	100W	27	Tr Tridonic	ND Non Dim
		30		
		40		
		50		
		57		
		60		
		65		
AESFE	150W	27	Ph Philips	VD 0/1-10VDim
		30		
		40		
		50		
		57		
		60		
		65		
AESFE	200W	27	Lf Lifud	DA DALI Dim
		30		
		40		
		50		
		57		
		60		
		65		

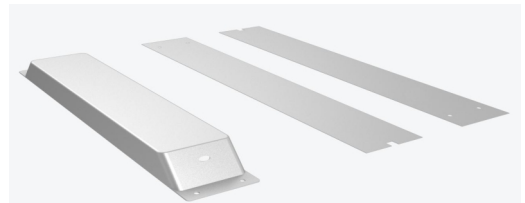


## EFI-LINEAR HIGH BAY



### APPLICATION

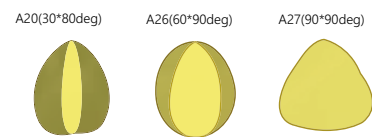
Linear high bay with high power, and high power efficacy up to 130 lm/w, the heat sink and end cap are powder coated for better performance and to resist corrosion and oxidation, applicable in various environment, the end cap of device is friendly hollow-out , which could discharge the ashes from the heat sink easily. Suitable for commercial and industrial premises, such as shopping mall, shopping center, office, airport, indoor gymnasium, warehouse, factory, etc...



### APPROVALS & STANDARDS

Saudi Standard SASO 2902 *	Energy Efficiency, functionality & labeling requirements for lighting products -Part2-
IECEE certificate *	As per IEC60598-2-3:2002+A1:2011 IEC60598-1:2014+A1:2017
Power supply approval marks	UL/CSA/CE/ENEC/CCB/CCC
Degree of protection provided by enclosures, ingress protection(IP)	IEC 60529:2013

\*: Approvals and certificate are under process.



### TECHNICAL INFORMATION

FAMILY	EFI-LINEAR
Wattage	100W   150W   200W
CRI	80
CCT	3000K   4000K   5000K   5700K   6000K   6500K
Beam	A20(30°x80deg)   A26(60°x90deg)   A27(90°x90deg)
Lumen	100W(13,000lm)   150W(19,500lm)   200W(26,000lm)
Finish	Silver
Efficacy	130 lm/w
Material	Die-casting aluminum body and heatsink, PMMA lenes
Driver	Tridonic   Philips   Lifud
Ambient (Ta) Temperature	-30°C to +45°C



**OSRAM**

**CREE**

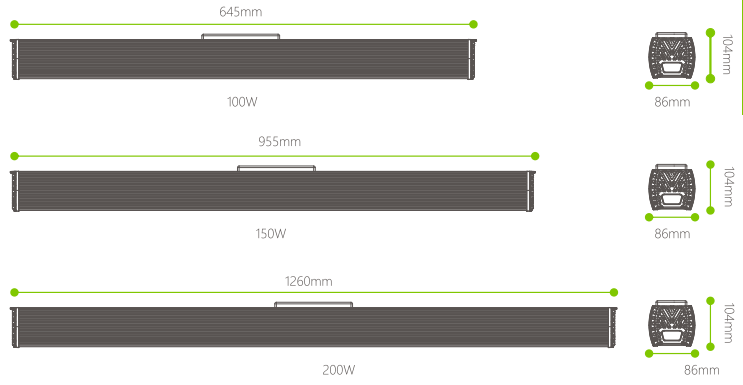
**LUMILEDS**

bridgelux



**DIMENSION**

MODEL	POWER	DIMENSION
AESFV2	100W	L645mm * W86mm*H104mm
	150W	L955mm * W86mm*H104mm
	200W	L1260mm * W86mm*H104mm



**ORDERING INFORMATION**

EXAMPLE : AESFV2-100W-30-A20-Ph-ND

Model	Wattage	CCT	Beam	DriverType	Dimming
AESFV2	100W	30	A20	Ph	ND
AESFV2	100W	27	2700K	Tr	Tridonic
		30	3000K	Ph	Philips
		40	4000K	Lf	Lifud
		50	5000K		
		57	5700K		
		60	6000K		
		65	6500K		
	150W	30	A26(60°90deg)		ND Non Dim
	200W	40	A27(90°90deg)		VD 0/1-10VDim
		50			DA DALI Dim



## ALU. TRI-PROOF



### APPLICATION

Manufactured to the highest standards, implementing high performance, economical and sustainable technologies, different diffusers available (clear, matt), with rigid aluminum profile for industrial and aggressive environment. You can install it in: parking garage, railway station, refrigerator warehouse, airport, exhibition center, etc....

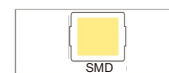
### APPROVALS & STANDARDS

Saudi Standard SASO 2902 *	Energy Efficiency, functionality & labeling requirements for lighting products -Part2- As per IEC60598-2-3:2002+A1:2011 IEC60598-1:2014+A1:2017
IECEE certificate *	As per IEC60598-2-3:2002+A1:2011 IEC60598-1:2014+A1:2017
Power supply approval marks	UL/CSA/CE/ENEC/CCB/CCC
Degree of protection provided by enclosures, ingress protection(IP)	IEC 60529:2013

\*: Approvals and certificate are under process.

### TECHNICAL INFORMATION

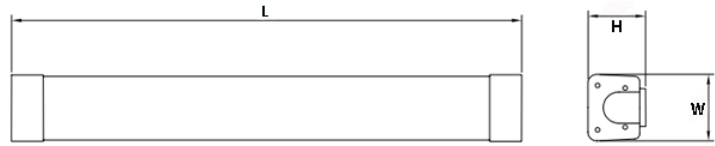
FAMILY	ECO TRI
Wattage	15W   30W   40W   60W   80W
CRI	80   90
CCT	3000K   4000K   5000K   5700K   6000K
Beam	120°
Lumen	1500lm   3000lm   4000lm   6000lm   8000lm
Finish	White
Diffuser type	PMMA opal matte, PMMA clear
Material	Die-casting aluminum body, PMMA diffuser
Driver	Tridonic   Philips   Lifud
Ambient (Ta) Temperature	-30°C to +50°C





### DIMENSION

MODEL	POWER	DIMENSION
AES-TP1-15W	15W	L300mm*W89.6mm*H73.5mm
AES-TP1-30W	30W	L600mm*W89.6mm*H73.5mm
AES-TP1-40W	40W	L900mm*W89.6mm*H73.5mm
AES-TP1-60W	60W	L1200mm*W89.6mm*H73.5mm
AES-TP1-80W	80W	L1500mm*W89.6mm*H73.5mm



### ORDERING INFORMATION

EXAMPLE : AES-TP1-30W-80-30-PMC-PH-ND

Model	Wattage	CRI	CCT	Diffuser	DriverType	Dimming
AES-TP1	30W	80	30	PMc	Ph	ND
AES-TP1	15W	80	30 3000K	PMom PMMA opal matte	Tr Tridonic	ND Non Dim
	30W	90	40 4000K	PMc PMMA clear	Ph Philips	VD 0/1-10VDim
	40W		50 5000K		Lf Lifud	DA DALI Dim
	60W		57 5700K			
	80W		60 6000K			



## PC TRI-PROOF



### APPLICATION

Manufactured to the highest standards, implementing high performance, economical and sustainable technologies, with high quality PC type enclosure and different diffusers, and can be adopted to meet standard T5 tube or LED module. You can install it in: parking garage, railway station, refrigerator warehouse, airport, exhibition center, etc....

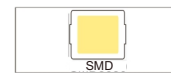
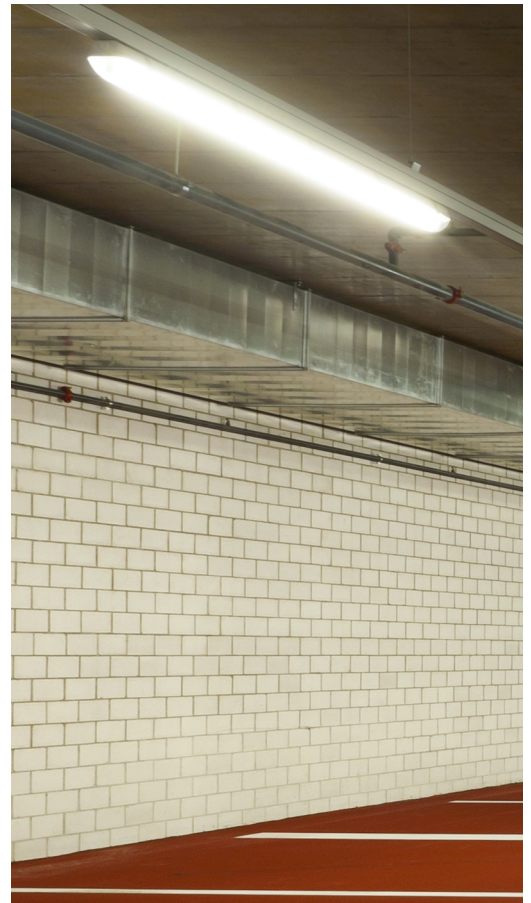
### APPROVALS & STANDARDS

Saudi Standard SASO 2902 *	Energy Efficiency, functionality & labeling requirements for lighting products -Part2-
IECEE certificate *	As per IEC60598-2-3:2002+A1:2011 IEC60598-1:2014+A1:2017
Power supply approval marks	UL/CSA/CE/ENEC/CCB/CCC
Degree of protection provided by enclosures, ingress protection(IP)	IEC 60529:2013

\*: Approvals and certificate are under process.

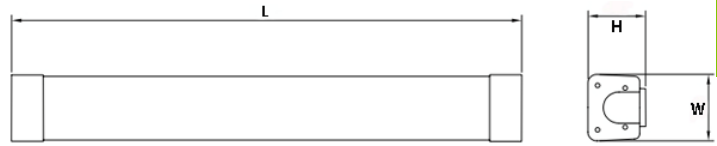
### TECHNICAL INFORMATION

FAMILY	ECO TRI
Wattage	20W   30W   42W
CRI	80   90
CCT	3000K   4000K   5000K   5700K   6000K
Beam	120°
Lumen	2500lm   4000lm   6000lm
Finish	White
Diffuser type	PMMA opal matte, PMMA clear
Material	PC body, PMMA diffuser
Driver	Tridonic   Philips   Lifud
Ambient (Ta) Temperature	-30°C to +50°C



**DIMENSION**

MODEL	POWER	DIMENSION
AES-TP2-20W	20W	L662mm*W118mm*H80mm
AES-TP2-30W	30W	L1272mm*W118mm*H80mm
AES-TP2-42W	42W	L1566mm*W118mm*H80mm



**ORDERING INFORMATION**

EXAMPLE : AES-TP2-20W-80-30-PMC-PH-ND

Model	Wattage	CRI	CCT	Diffuser	DriverType	Dimming
AES-TP2	20W	80	30	PMc	Ph	ND
AES-TP2	20W	80	30 3000K	PMom PMMA opal matte	Tr Tridonic	ND Non Dim
	30W	90	40 4000K	PMc PMMA clear	Ph Philips	VD 0/1-10VDim
	42W		50 5000K		Lf Lifud	DA DALI Dim
			57 5700K			
			60 6000K			



## PC TRI-PROOF



### APPLICATION

Manufactured to the highest standards, implementing high performance, economical and sustainable technologies, with high quality PC type enclosure and different diffusers, and can be adopted to meet standard T5 tube or LED module. You can install it in: parking garage, railway station, refrigerator warehouse, airport, exhibition center, etc....

### APPROVALS & STANDARDS

Saudi Standard SASO 2902 *	Energy Efficiency, functionality & labeling requirements for lighting products -Part2- As per IEC60598-2-3:2002+A1:2011 IEC60598-1:2014+A1:2017
IECEE certificate *	As per IEC60598-2-3:2002+A1:2011 IEC60598-1:2014+A1:2017
Power supply approval marks	UL/CSA/CE/ENEC/CCB/CCC
Degree of protection provided by enclosures, ingress protection(IP)	IEC 60529:2013

\*: Approvals and certificate are under process.

### TECHNICAL INFORMATION

FAMILY	ECO TRI
Wattage	20W   28W   36W   56W
CRI	80   90
CCT	3000K   4000K   5000K   5700K   6000K
Beam	120°
Lumen	2000lm   2800lm   3600lm   5600lm
Finish	White
Diffuser type	PMMA opal matte, PMMA clear
Material	Die-casting aluminum body, PMMA diffuser
Driver	Tridonic   Philips   Lifud
Ambient (Ta) Temperature	-30°C to +50°C



**DIMENSION**

MODEL	POWER	DIMENSION
AES-TP3	20W	L588mm*W100mm*H55mm
	28W	L893mm*W100mm*H55mm
	36W	L1198mm*W100mm*H55mm
	56W	L1498mm*W100mm*H55mm



**ORDERING INFORMATION**

















EXAMPLE : AES-TP3-20W-80-30-PMC-PH-ND

Model	Wattage	CRI	CCT	Diffuser	DriverType	Dimming
AES-TP3	20W	80	30	PMc	Ph	ND
AES-TP3	20W	80	30 3000K	PMom PMMA opal matte	Tr Tridonic	ND Non Dim
	28W	90	40 4000K	PMc PMMA clear	Ph Philips	VD 0/1-10VDim
	36W		50 5000K		Lf Lifud	DA DALI Dim
	56W		57 5700K			
			60 6000K			

## INGRESS PROTECTION

IP Ratings are an international numeric classification to indicate the degrees of protection provided by enclosures for electrical equipment against water and solid object accordance with IEC 60598-1:2003.

### IPXX

	<b>0</b> No protection against contact and ingress of objects.		<b>0</b> No protection against ingress of water.
	<b>1</b> Protected against solid objects Ø>50 mm and greater, such as the back of a hand.		<b>1</b> Protected against dripping water; vertically falling drops shall have no harmful effect on the device when mounted in a normal position.
	<b>2</b> Protected against solid objects Ø>12.5 mm and greater, such as fingers or similar objects.		<b>2</b> Protected against dripping water; vertically falling drops shall have no harmful effect on the device when the enclosure is tilted at an angle of 15° from its normal position.
	<b>3</b> Protected against solid objects Ø>2.5 and greater, such as tools, thick wires, etc.		<b>3</b> Protected against water falling as a spray at any angle up to 60° from the vertical line.
	<b>4</b> Protected against solid objects Ø>1 mm and greater, such as wires, large ants etc.		<b>4</b> Protected against splashing water; water splashed against the enclosure from any direction shall have no harmful effect.
	<b>5</b> Dust protected, ingress of dust is not entirely prevented, but it must not enter in sufficient quantity to interfere with the satisfactory operation of the equipment.		<b>5</b> Water projected by a nozzle (6.3 mm) under 30kPa pressure at distance of 3 meters from any direction shall have no harmful effects.
	<b>6</b> Dust-tight, no ingress of dust; complete protection against dust (dusttight).		<b>6</b> Water projected in powerful jets (12.5 mm) under 100kPa pressure at distance of 3 meters from any direction shall have no harmful effects.
			<b>7</b> protected against the effects of temporary immersion of water; no harmful effect is possible when the enclosure is immersed in water under defined conditions of pressure and time (up to 1 meter maximum of submersion).
			<b>8</b> The equipment is suitable for continuous immersion in water as per the conditions specified by the manufacturer.

## IMPACT PROTECTION

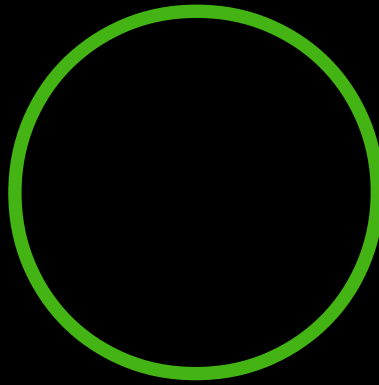
IK Ratings are an international numeric classification to indicate the degrees of protection provided by enclosures against external mechanical impacts in accordance with IEC 62262:2002.

### IKXX

<b>00</b>	No protection.	<b>06</b>	Protected against 0.25kg mass of impact dropped from 400mm above the impacted surface.
<b>01</b>	Protected against 0.25kg mass of impact dropped from 56mm above the impacted surface.	<b>07</b>	Protected against 0.5kg mass of impact dropped from 400mm above the impacted surface.
<b>02</b>	Protected against 0.25kg mass of impact dropped from 80mm above the impacted surface.	<b>08</b>	Protected against 1.7kg mass of impact dropped from 300mm above the impacted surface.
<b>03</b>	Protected against 0.2kg mass of impact dropped from 140mm above the impacted surface.	<b>09</b>	Protected against 5kg mass of impact dropped from 200mm above the impacted surface.
<b>04</b>	Protected against 0.25kg mass of impact dropped from 200mm above the impacted surface.	<b>10</b>	Protected against 5kg mass of impact dropped from 400mm above the impacted surface.
<b>05</b>	Protected against 0.25kg mass of impact dropped from 280mm above the impacted surface.		

## REFERENCE STANDARDS

• <b>SASO 2902</b>	Energy efficiency, functionality and labeling requirements for lighting products (part 2).
• <b>SASO 2927:2019</b>	Energy efficiency functionality and labeling requirements for lighting products-part 3: Street lighting.
• <b>IES 610000-3-2</b>	Electromagnetic compatibility (EMC) - Part 3-2: Limits for harmonic current emissions (equipment input current 16 A per phase).
• <b>IEC 62471</b>	Photo biological Safety of Lamps and Lamp Systems.
• <b>IEC TR 62778</b>	Application of 62471 to light sources and luminaires (blue light).
• <b>IEC 60598-1/2017</b>	Luminaires - Part 1: General requirements and tests.
• <b>IEC 61547:2009</b>	Equipment for general lighting purposes - EMC immunity requirements.
• <b>IEC 61643-11:2011</b>	Low-voltage surge protective devices - Part 11: Surge protective devices connected to low-voltage power systems Requirements and test methods.
• <b>IES LM-79-08</b>	Electrical and photometric measurements of Solid State lighting products.
• <b>IES LM-80-08</b>	Measuring lumen maintenance of LED Light sources.
• <b>IES LM-82-12</b>	Method for characterisation of LED light Engines and Integrated LED lamps for Electrical properties as a function of the temperature.
• <b>IES LM-84-14</b>	Measuring Luminous Flux and Color Maintenance of LED Lamps, Light Engines, and Luminaires.
• <b>ISTMT</b>	In-SITU Temperature Measurement Testing.
• <b>IES TM21-11</b>	Projecting long term lumen maintenance of LED light sources.
• <b>IES TM28-14</b>	Projecting long-term luminous flux maintenance of LED lamps and luminaires.
• <b>IEC 60529:2013</b>	Degrees of protection provided by enclosures (IP Code).
• <b>ISO 9227:2017</b>	Corrosion tests in artificial atmospheres Salt spray tests.
• <b>ISO 4628-2:2016</b>	Paints and varnishes - Evaluation of degradation of coatings Designation of quantity and size of defects, and of intensity.



CATALOGUE 1.4

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