Area Lighting

BAJAJ LUMINAIRES
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Making the difference

Area Lighting

Introduction

Area Lighting, an important aspect of outdoor lighting, is very effective for the following: Lighting wide open areas such as construction sites, railway marshalling yards, ship yards, docks, airport aprons, parking areas and filling stations. Security floodlighting to deter night-time pilfers in car parks, warehouses, industrial and commercial premises. Lighting of sports arenas, both indoor and outdoor, for games such as football, tennis, cricket and athletics. Environmental lighting such as lighting of parks, gardens, sea shores, monuments and historical sites.

Bajaj Range of Luminaires

Bajaj has an extensive range of floodlight luminaires to meet any of the above mentioned need and are suitable for use with Incandescent, Halogen, Mercury Vapour, Sodium Vapour and Metal Halide single or twin lamps.

Electrochemically brightened, polished and anodised aluminium or Bajaj special technology of GLASKOTE® a thin layer of glass coating improves the efficiency of reflectors and reduces the maintenance.

The luminaires have the facility of symmetrical / asymmetrical and narrow / medium / wide beam light distribution and can be supplied either as integral or with separate weatherproof heavy duty type control gear box.

Technical lighting data

(a) Light distribution diagram:

The luminous intensity distribution of a floodlight is presented in the form of a Cartesian diagram. The diagram gives curves for the luminous intensity in cd/1000 lm in one plane or in two mutually perpendicular planes.

The full information on the light distribution of the floodlight is given in the form of an isocandela or isolux diagram. In almost every light distribution, however, there is a clear difference between the horizontal and the vertical distribution of the beam. This makes it desirable to show separate light distribution curves for the vertical and horizontal planes through the beam axis.

For floodlights in which the axis of the lamp is perpendicular to the front of the floodlight, the curves are given for one plane through the axis of the lamp.

For floodlights in which the axis of the lamp is parallel to the front of the floodlight, the curves are given for two mutually perpendicular planes.

(b) Beam Efficiency:

The beam efficiency is the ratio of the beam flux to the lamp flux and there are three different beam efficiencies:

(i) The ratio of the flux emitted from the floodlight to that emitted from the lamp(s) is called the light output ratio of the floodlight

$$L.O.R = \frac{\text{Floodlight Flux, in lumens} \times 100\ \%}{\text{Declared Bare Lamp Flux, in lumens}}$$

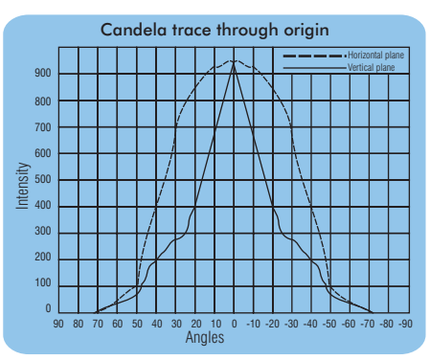
(ii) The same ratio, but only for the floodlight flux within a solid angle in which the luminous intensity is greater than or equal to 0.1 x the maximum luminous intensity (beam width for $I > 0.1 \times Imax$)

The difference between the total light output ratio of the floodlight and the ratio for the beam for which $I > 0.1 \times Imax$ can be generally regarded as spill light. For instance, in case of a floodlight luminaire where Total Light output ratio=74%, Light output ratio for $0.1 \times Imax = 51\%$, then spill Light = 23%.

(iii) The same ratio, but for a solid angle in which the luminous intensity is greater than or equal to 0.5 x the maximum luminous intensity (beam width for $I > 0.5 \times Imax$)

(c) Beam Spread:

In any plane through the beam axis, the angle between this beam axis and the direction in which the luminous intensity is equal to a stated percentage of the maximum luminous intensity of the beam. The percentage of the maximum luminous intensity for which these angles are given are 10% ($I = 0.1 \times Imax$) and 50% ($I = 0.5 \times Imax$).



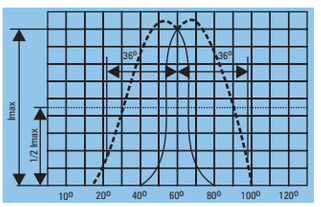
The beam spread at $I > 0.5 \times Imax$ and even more so at $I > 0.1 \times Imax$ is important for use in defining the light distribution on the classification of floodlights so far as beam width is concerned. Distinction is made (at 0.5 x Imax) between:

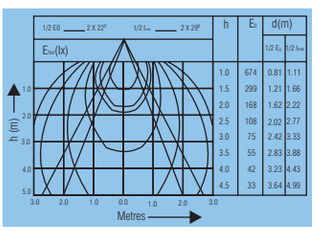
(i) Narrow-beam floodlights generally $< 2 \times 10^0$

(ii) Medium-beam floodlights generally from 2×10^0 to 2×20^0

(iii) Wide-beam floodlights generally $> 2 \times 20^0$

Other recommendations (e.g. NEMA or DIN5037/3) classify according to the type of light distribution (rotationally symmetrical, symmetrical with respect to one or two planes, etc.) together with





both the horizontal and the vertical beam spread for I = 0.1 x Imax.

Imax the maximum luminous intensity of a double asymmetrical beam luminaire in the main plane, given at the angle relative to the perpendicular to the front of the luminaire.

The widths of the beam in the two planes are given by the angles of the directions of the 1/2 Imax intensities; to perpendicular to the front of the floodlight and to the intersection line of the two mutually perpendicular planes. Angles on the right side of the Cartesian diagram are negative, angles on the left side are positive.

Imax in the main plane is such an important design criteria that the value is printed explicitly at the top of the diagram, together with the angle between the direction of Imax and the perpendicular to the front of the floodlight.

Isolux diagram

The isolux diagram shows the illuminated area for rotationally-symmetrical light distribution by means of isolux curves. The horizontal illuminance is indicated in relation to the distance (vertical and horizontal) to the luminaire. The shape of the isolux curves depends on the beam spread of the luminaire.

Shape of the isolux curves depends on the beam spread of the luminaire.

This is indicated in the graph by $^1/_2$Eo and $^1/_2$Im$_{ax}$.

Additionally, the connected table offers the user information on:

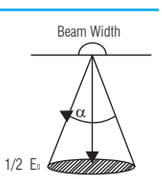
- The resulting illuminance at centre beam Eo.
- The diameter of the area in which the illuminance is better or equal to 50% of the illuminance Eo.
- The diameter of the area in which the luminous intensity is better or equal to 50% of Imax, the intensity in the centre of the beam.

The $^1/_2$ Eo angle reflects the angle at which the illuminance has dropped to 50% of the maximum value in the centre of the beam.

The beam spread angle $^1/_2$ Imax reflects the angle over which the luminous intensity drops to 50% of its peak value.

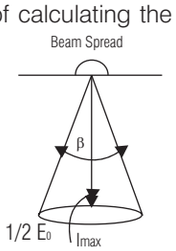
Methods of calculation

There are two possible ways of calculating the types and number of floodlights needed to achieve the desired illumination - The lumen method and the luminous intensity method. For illumination of large outdoor areas, the lumen method and for smaller outdoor areas like sub-station equipment, the luminous intensity method to be used.



Lumen Method

As the name suggests, this method consists of calculating the number of lumens to be directed on to the area in order to achieve a certain illumination level. The number of lumens can be calculated by means of the formula :



$$LF = \frac{A \times E}{UF}$$

Where :

LF = The total number of lamp lumens, i.e. the total luminous flux produced by all lamps.

A = Surface area to be illuminated in square metre.

E = Desired illumination level in lux on the area.

UF = Utilisation Factor which takes into account the efficiency of the luminaire and the light losses (luminous efficiency).

The lumens produced by the lamps are concentrated by reflectors, in which process some losses are involved by inter-reflection in the reflector and absorption by other parts of the luminaires. Finally, a percentage of the losses is accounted for by wasted light, that is light not incident on the area. In practice, an average utilization factor varying between 0.25 and 0.35 may be reckoned with.

Luminous Intensity Method (Point by Point Method)

In this method, the starting point is the luminous intensity, in candela, radiated by a light source in a particular direction. The luminous intensity may be derived from the luminous intensity diagram or from a table. The data can be usually found in the photometric data sheet for the particular luminaire. There are few other methods for outdoor illumination design calculation which are:

(a) Isolux Diagram Method and (b) Computer Aided Design.

(a) Isolux Diagram Method:

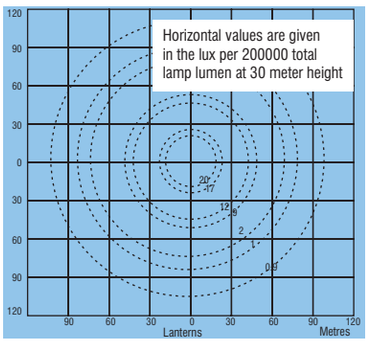
The number of floodlighting Towers / High masts required has to be determined first by the Isolux method using the Isolux diagram of luminaires to be used & follow the following steps:

(i) Convert the Isolux diagram also to the layout drg. scale and determine the diameter of circles which can be drawn covering the area so that the permissible spacing to height ratio is attained.

(ii) Trace the Isolux diagram of the luminaire on tracing paper and place the centre of Isolux diagram on the centre of each circle on the area to be illuminated.

(iii) Read the values of illumination levels at the centres of all

grids from the Isolux diagram and prepare a table. Determine the contribution of all lights to the illumination levels at the centre of each grid and enter the total values of the illumination levels in the table/grid diagram of the area.



This method is found to be less tedious and more accurate as compared to the lumen method or the point by point method.

(b) Computer Aided Design:

The above curves and diagrams no doubt help in finding out the illuminance, uniformity, etc., but at the same time it takes quite a substantial amount of time and when a number of alternate designs have to be made, it becomes still more time consuming. Therefore, the modern trend is to use the computer aided design software. For a particular installation, the design can be worked out with different variables along with the economics of each system, thereby achieving a most economic and optimum solution.

However, for computer aided design exhaustive photometric data of the luminaires are required and with the help of software the results are obtained. Luminaires Division of Bajaj Electricals Limited not only provide the photometric data of all the luminaires but also provide the most modern outdoor software for illumination design to the Architects, Consultants, Project Authorities and the users on request. The state-of- the-art software enables you to work out a number of alternative designs giving the horizontal and vertical illumination levels, uniformity ratios in a shortest possible time. In house design and developed outdoor software OLAS is a very useful lighting tool for quick estimation of basic design.

Wind Load

Flood lighting luminaires have to withstand winds upto gale force. Wind pressures on the luminaires also have an effect on the design of the towers / highmast / poles.

The following is the testing procedure for Wind Load Test as given in IS 10322 (Part 5/Sec 5) 1987.

For floodlights for use above ground level outdoors, a constant evenly distributed load is applied for 10 min on the floodlight using sand bags providing 2.4 kN m2 of floodlight projected area. The floodlight is then turned to 1800, in the vertical plane, about the point of attachment and the test is repeated.

During the test, there should be no failure or movement about the point of attachment, and after either part of this test, there should not be permanent set exceeding 10.

GLASKOTE® Reflectors

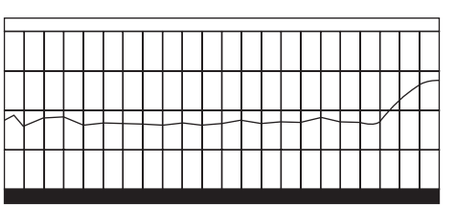
GLASKOTE® is a thin, clear, flexible coating of high quality (95% purity) silica glass which is bonded chemically to the surface of formed reflectors. Each reflector immersed in silica solution, provides pinhole free coating to all surfaces. The result is chemically inert finish with the reflectivity of aluminium & durability of glass. The highly transparent glass finish ensures a very small light loss and ensures very high reflectance. Due to glass coating the reflector is corrosion resistant. Except for hydrofluoric acid, the GLASKOTE® coating is corrosion resistant against any acid or alkali.

Extraordinarily smooth surface finish protects the reflector from deposition of dust and resultant smearing and the high reflectance is maintained for a longer period. It is just like any glass surface where you can mop up the dust easily with a warm wet cloth. Like glass-fibre, GLASKOTE® is flexible. The thin layer of glass coating on aluminium sheet, bears any heavy bending of the sheets. Furthermore, it is heat resistant and shock proof. In fact reflector is found to be better than prismatic glass reflector as it is light in weight, has high physical strengths and high efficiency.

Comparison of surface roughness

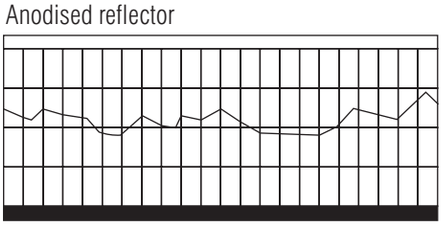
Environmental air is filled with the suspension of fine dust of a few micron (1/1000 mm) size. The dust gets deposited on the reflector and when hot, the area close to the lamps burns and sticks to the reflector surface (known as reflector baking) which in turn reduces its reflectance. The surface of GLASKOTE® is coated with two layers of silicate solutions, which gives a smooth and extremely fine surface finish. The measurement data of surface roughness (shown in the figure below) clearly indicates that GLASKOTE® is practically free from surface roughness and dust deposition which is present on an Anodised Reflector.

Measurement data of surface roughness of GLASKOTE® (Silicate Film)



Magnified surface view (x 35, 000 with electronic microscope)

Anodised reflector



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Area Lighting

BJQF 500/1000 IP54

BJEF 15/21/28 S

Asymmetrical beam, halogen floodlight luminaires

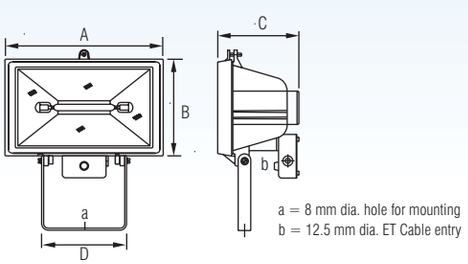
Luminaire Body
Black epoxy powder coated, single piece pressure, die-cast aluminium housing with heat dissipating fins with mounting bracket. Heat resistant, clear, toughened glass cover with silicon rubber gasket hinged aluminium frame.

Optics
Electrochemically brightened, polished & anodised aluminium asymmetrical beam reflector.

Lamp and Accessories
500/1000W halogen lamp, all accessories are wired upto the terminal block.

Lamp
Luminaire is suitable for 500/1000W halogen lamp.

Degree of Protection
IP 54



a = 8 mm dia. hole for mounting
b = 12.5 mm dia. ET Cable entry

Cat. Ref.	A	B	C	D
BJQF 500	182	145	115	140
BJQF 1000	260	190	122	160

Symmetrical medium / wide beam, HID lamp floodlight luminaires

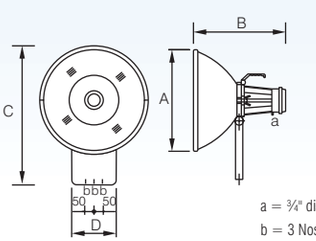
Luminaire Body
Grey hammertone stove enamelled finish, die-cast aluminium housing with heat dissipating fins, MS hot dipped galvanised mounting bracket with protractor scale for precision aiming.

Optics
Electrochemically brightened, polished & anodised aluminium symmetrical beam reflector lamp enclosure fixed to the housing, Heat resistant, clear, toughened glass cover with EPDM / Synthetic rubber gasket.

Lamp and Accessories
BJEF 15/21S suitable for HID lamp upto 600W and BJEF 28 S suitable for 1000W SV/MH lamp. GES lamp holder wired upto the terminal block.

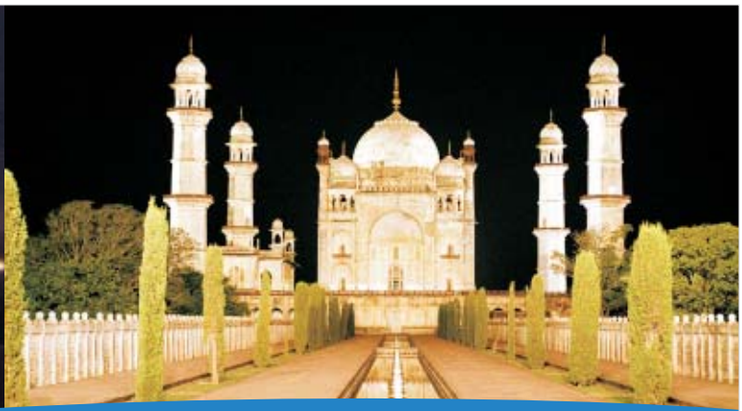
Degree of Protection
IP 55

Note: Use appropriate wattage control gear.
BJEF 15 S - suitable for medium beam can be used upto 400W HID lamp
BJEF 21 S - suitable for wide medium beam can be used upto 600W HID lamp
BJEF 28 S - suitable for wide medium beam can be used upto 1000W HID lamp



a = ¾" dia. BS conduit entry
b = 3 Nos. 13 mm dia. holes for mounting

Cat. Ref	A	B	C	D
BJEF 15 S	370	440	525	210
BJEF 21 S	545	430	710	210
BJEF 28 S	750	603	935	210



BGENF 14

BGENF 22

Asymmetrical beam, non-integral, HID tubular lamp floodlight luminaires with GLASKOTE® reflector

Luminaire Body

Grey epoxy powder coated die-cast aluminium housing with frame, heat resistant, clear toughened glass is fixed to the frame with silicon rubber gasket.

Grey epoxy powder coated MS mounting bracket with protractor scale for precision aiming.

Optics

Electrochemically brightened, polished faceted aluminium asymmetrical beam GLASKOTE® reflector.

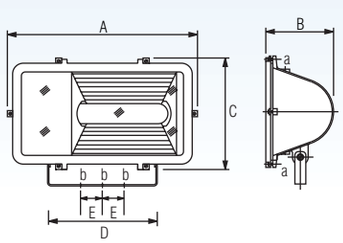
Lamp and Accessories

Suitable for upto 400W HID lamp. GES lamp holder wired upto the terminal block.

Degree of Protection

IP 55

Note: Use appropriate wattage control gear



a = 19 mm dia. ET Cable entry
b = 2 Nos. 9 mm dia. holes for mounting
c = 1 No. 13 mm dia. hole for mounting

Cat. Ref	A	B	C	D	E
BGENF 14	440	157	264	257	50

Asymmetrical beam, non-integral, twin HID tubular lamp floodlight luminaires with GLASKOTE® reflector

Luminaire Body

Grey epoxy powder coated die-cast aluminium housing, heat resistant clear toughened glass fixed with silicon rubber gasket.

Optics

Electrochemically brightened, polished faceted aluminium asymmetrical beam GLASKOTE® reflector.

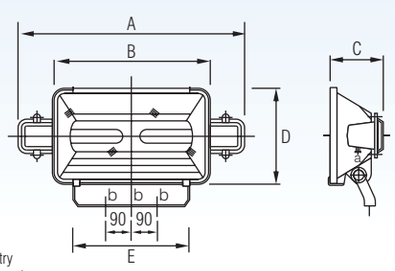
Lamp and Accessories

Suitable for 2 numbers of tubular HID lamps wattage max. upto 400W. GES lamp holder wired upto the terminal block.

Degree of Protection

IP 55

Note: Use appropriate wattage control gear



a = 2 Nos. 19 mm dia. ET Cable entry
b = 3 Nos. 14 mm dia. holes for mounting

Cat. Ref	A	B	C	D	E
BGENF 22	763	550	180	350	405

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Area Lighting

BJENF 14

BJENF 24

Asymmetrical beam, non-integral, HID tubular lamp floodlight luminaires with anodised reflector

Luminaire Body

Grey epoxy powder coated die-cast aluminium housing, heat resistant clear toughened glass is fixed with silicon rubber gasket.

Grey epoxy powder coated MS mounting bracket with protractor scale for precision aiming.

Optics

Electrochemically brightened, polished faceted aluminium asymmetrical beam anodised reflector.

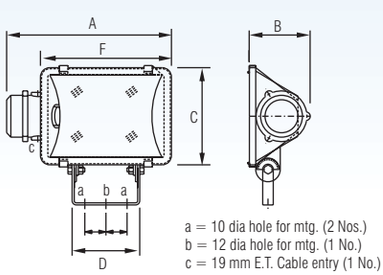
Lamp and Accessories

Suitable for upto 400W HID lamp. GES lamp holder wired upto the terminal block.

Degree of Protection

IP 65

Note: Use appropriate wattage control gear



a = 10 dia hole for mtg. (2 Nos.)
b = 12 dia hole for mtg. (1 No.)
c = 19 mm E.T. Cable entry (1 No.)

Cat. Ref.	A	B	C	D	E	F
BJENF 14	390	144	230	160	50	310

Asymmetrical beam, non-integral, twin HID tubular lamp floodlight luminaires with anodised reflector

Luminaire Body

Grey epoxy powder coated die-cast aluminium housing, heat resistant clear toughened glass fixed with silicon rubber gasket.

Optics

Electrochemically brightened, polished and anodised faceted aluminium asymmetrical beam reflector.

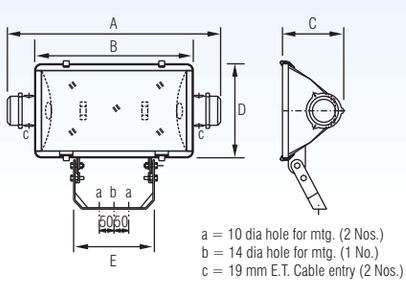
Lamp and Accessories

Suitable for 2 numbers of tubular HID lamp wattage max. upto 400W. GES lamp holder wired upto the terminal block.

Degree of Protection

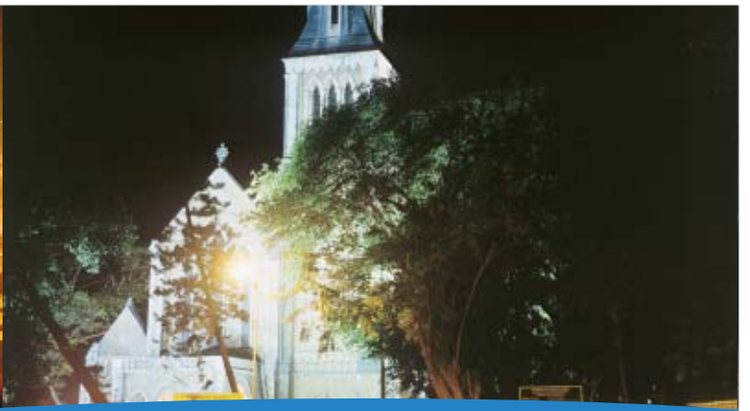
IP 55

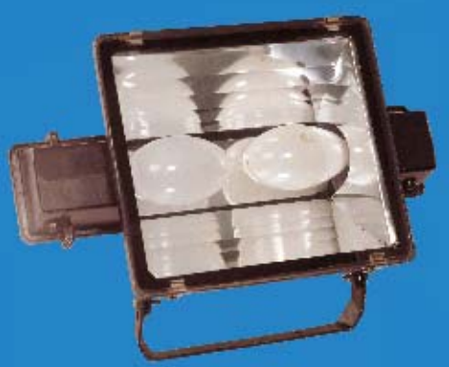
Note: Use appropriate wattage control gear.



a = 10 dia hole for mtg. (2 Nos.)
b = 14 dia hole for mtg. (1 No.)
c = 19 mm E.T. Cable entry (2 Nos.)

Cat. Ref.	A	B	C	D	E
BJENF 24	730	540	200	320	260





BJEF 22 CA (RO)

BJFLM 250 SV/MH

Asymmetrical beam, non-integral, twin HID tubular lamp floodlight luminaires with anodised reflector

Luminaire Body

Black epoxy powder coated die-cast aluminium housing with heat resistant, clear, toughened glass cover fixed to the housing with silicon rubber gasket and SS toggles MS hot dipped galvanised black powder coated mounting bracket with protractor scale for precision aiming.

Optics

Electrochemically brightened, polished anodised aluminium reflector.

Lamp and Accessories

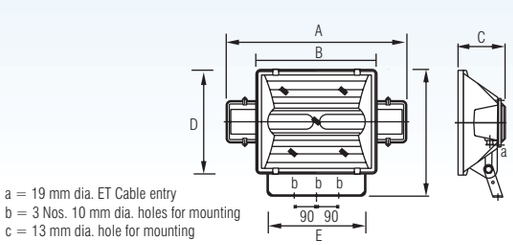
Suitable for 2 numbers of HID lamps wattage max. upto 400W.

GES lamp holder wired upto the terminal block.

Degree of Protection

IP 55

Note: Use appropriate wattage control gear



a = 19 mm dia. ET Cable entry
b = 3 Nos. 10 mm dia. holes for mounting
c = 13 mm dia. hole for mounting

Cat. Ref	A	B	C	D	E
BJEF 22 CA (RO)	750	495	210	435	400

Symmetrical narrow beam, HID lamp, non-integral floodlight

Luminaire Body

Blue epoxy powder coated die-cast aluminium housing, heat resistant, clear, toughened glass cover fixed in Ivory powder coated aluminium frame with silicon rubber and gasket.

Epoxy powder coated MS mounting bracket with protractor scale for precision aiming.

Optics

Electrochemically brightened, polished & anodised aluminium symmetrical beam reflector.

Lamp and Accessories

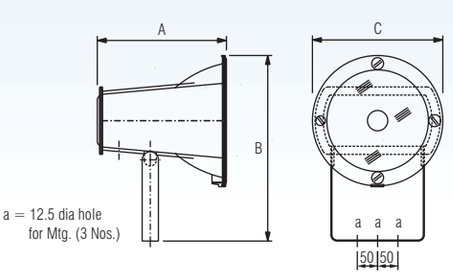
Suitable for one HPSV/MH-T lamp upto 250W rating.

GES lamp holder wired upto the terminal block.

Degree of Protection

IP 65

Note: Use appropriate wattage control gear for respective luminaire.



a = 12.5 dia hole
for Mtg. (3 Nos.)

Cat. Ref	A	B	C
BJFLM 250 SV/MH	325	495	330

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Area Lighting

BGEMF 70 SV/MH DE

BGEMF 150 SV/MH DE

Asymmetrical beam, integral, HID single/ double ended lamp floodlight luminaires with GLASKOTE® reflector

Luminaire Body

Grey epoxy powder coated die-cast aluminium housing with frame. Heat resistant clear toughened glass is fixed to the frame with silicon rubber gasket.

Grey epoxy powder coated MS mounting bracket with protractor scale for precision aiming.

Optics

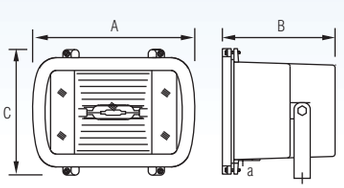
Electrochemically brightened, polished faceted aluminium asymmetrical beam GLASKOTE® reflector.

Lamp and Accessories

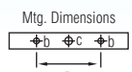
Suitable for 70W HPSV / MH DE lamp. E-27 / Pair of Rx 7s lamp holder, open construction ballast and accessories are wired upto the terminal block.

Degree of Protection

IP 55



a = 19 mm dia ET cable entry
b = 2 Nos. 10 mm dia. holes for mounting
c = 1 No. 13 mm dia. holes for mounting



Cat. Ref.	A	B	C	D
BGEMF 70 SV	240	169	187	100
BGEMF MH DE	240	169	187	100

Asymmetrical beam, integral, HID single/ double ended lamp floodlight luminaires with GLASKOTE® reflector

Luminaire Body

Grey epoxy powder coated die-cast aluminium housing with frame. Heat resistant clear toughened glass is fixed to the frame with silicon rubber gasket.

Grey epoxy powder coated MS mounting bracket with protractor scale for precision aiming.

Optics

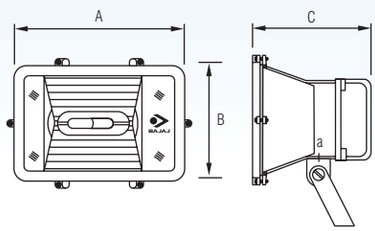
Electrochemically brightened, polished faceted aluminium asymmetrical beam GLASKOTE® reflector.

Lamp and Accessories

Suitable for upto 150W HPSV / MH DE lamp. GES / Pair of Rx 7s-24 lamp holder, open construction ballast and accessories are wired upto the terminal block.

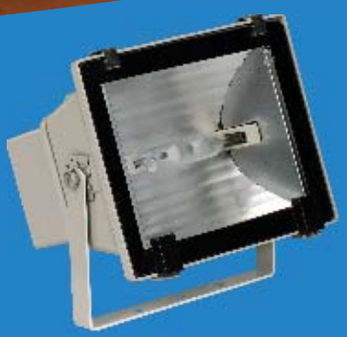
Degree of Protection

IP 55



a = 1 No. ¾" BS conduit Cable entry
b = 2 Nos. 10 mm dia. holes for mounting
c = 1 No. 13 mm dia. holes for mounting

Cat. Ref.	A	B	C
BGEMF 150 SV/MH DE	340	230	215



BGEMFS 150 MH DE
BGEMFS 150/250/400 SV/MH T

Asymmetrical beam, integral, HID double ended lamp floodlight luminaires with anodised reflector

Luminaire Body

Grey epoxy powder coated die-cast aluminium housing. Heat resistant clear toughened glass fixed with silicon rubber gasket.

Epoxy grey powder coated MS mounting bracket.

Optics

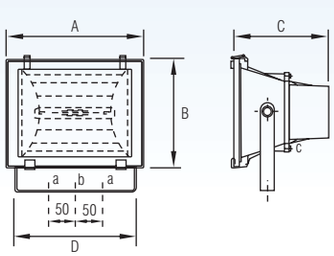
Electrochemically brightened, polished faceted aluminium asymmetrical beam anodised reflector.

Lamp and Accessories

Suitable for 150 MH DE / 150/250/400 HPSV/MH T lamp. Pair of Rx 7s-24 / GES lamp holder, copper ballast and accessories are wired upto the terminal block.

Degree of Protection

IP 55



a = 10 dia. Hole for mounting - 2 nos.
b = 14 dia. Hole for mounting - 1 nos.
c= Cable entry - 1 nos. 19 mm ET

Cat. Ref.	A	B	C	D
BGEMFS 150 SV/MH DE	250	200	170	230
BGEMFS 250 SV/MH	400	238	240	380
BGEMFS 400 SV/MH	400	238	240	380

BGEMF 250/400 SV/MH

Asymmetrical beam, compact integral, HID tubular lamp floodlight luminaires with GLASKOTE® reflector

Luminaire Body

Grey epoxy powder coated die-cast aluminium housing with frame. Heat resistant clear toughened glass is fixed to the frame with silicon rubber gasket.

Black epoxy powder coated MS mounting bracket with protractor scale for precision aiming.

Optics

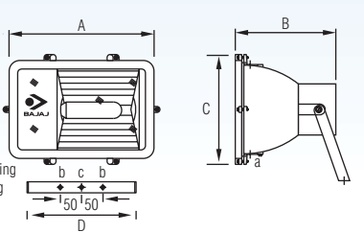
Electrochemically brightened, polished faceted aluminium asymmetrical beam GLASKOTE® reflector.

Lamp and Accessories

Suitable for Tubular 250/400W HPSV / MH lamps. GES lamp holder, copper ballast and accessories are wired upto the terminal block.

Degree of Protection

IP 55



a = ¾" BS conduit entry
b = 2 Nos. 10 mm dia. holes for mounting
c = 1 No. 13 mm dia. hole for mounting

Cat. Ref.	A	B	C	D
BGEMF 250 SV/MH	370	216	258	265
BGEMF 400 SV/MH	440	280	265	260

BAJAJ LUMINAIRES
Making the difference

Area Lighting

BJFL 02 70 MH DE

BJFL 70 SV S/AS
BJFL 70 MH SE S/AS
BJFL 70 MH DE S WSII
BJFL 150 MH DE S

Symmetrical / asymmetrical beam, integral, HID double ended lamp floodlight luminaires with anodised reflector

Luminaire Body

Black textured matt epoxy powder coated die-cast aluminium housing, integral luminaire. Heat resistant, clear, toughened glass cover fixed to the housing with EPDM rubber gasket and the glass is hinged to the housing and fastened with SS toggles.

Black epoxy powder coated MS mounting bracket.

Optics

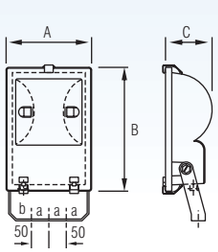
Electrochemically brightened, polished aluminium symmetrical/ asymmetrical beam anodised reflector.

Lamp and Accessories

Suitable for 70W MH DE lamp. Pair of Rx 7s lamp holder, open construction ballast and accessories are wired upto the terminal block.

Degree of Protection

IP 65



a = 9.5 mm dia holes for Mtg. 3 Nos.
b = 19 mm dia. ET cable entry

Cat. Ref.	A	B	C
BJFL 02 70 MH DE	205	340	108

Symmetrical / asymmetrical beam, integral, HID single/ double ended lamp floodlight luminaires with anodised reflector

Luminaire Body

Black textured matt epoxy powder coated die-cast aluminium housing, integral luminaire. Heat resistant, clear, toughened glass cover fixed to the housing with EPDM rubber gasket and the glass is hinged to the housing and fastened with SS toggles.

Black epoxy powder coated MS mounting bracket.

Optics

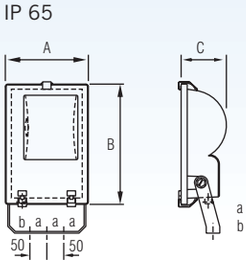
Electrochemically brightened, polished aluminium symmetrical/ asymmetrical beam anodised reflector.

Lamp and Accessories

Suitable for 70/150W MH DE / HPSV/ MH SE lamp. Pair of Rx 7s / Rx 7s-24 / E-27 lamp holder, open construction ballast and accessories wired upto the terminal block.

Degree of Protection

IP 65



a = 9.5 mm dia holes for Mtg. 3 Nos.
b = 19 mm dia. ET cable entry

Cat. Ref.	A	B	C
BJFL 70 SV S/AS	265	370	130
BJFL 70 MH SE S/AS	265	370	130
BJFL 70 MH DE S WSII	265	370	130
BJFL 150 MH DE S	265	370	130

BJFL 11 150 MH DE

Double assymetrical beam, integral hoarding lighting luminaires

Luminaire Body

Black textured matt epoxy powder coated die-cast aluminium housing, integral luminaire. Heat resistant, clear, toughened glass cover fixed to the housing with EPDM rubber gasket and the glass is hinged to the housing and fastened with SS toggles.

Epoxy black powder coated MS mounting bracket with aiming facility.

Reflector

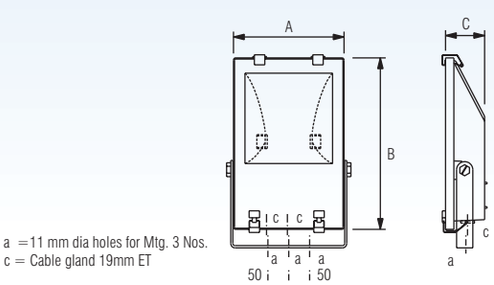
Electrochemically brightened, polished, faceted aluminium reflector.

Lamp and Accessories

Suitable for 150W MH DE lamp. Pair of Rx 7s-24 lamp holders, open construction ballast and accessories are wired upto the terminal block.

Degree of Protection

IP 65



Cat. Ref.	A	B	C
BJFL 11 150 MH DE	225	358	85

BJFL 150 SV T S/AS
BJFL 250/400 SV/MH/MMH T S/AS

Asymmetrical beam, integral, HID tubular lamp floodlight luminaires with anodised reflector

Luminaire Body

Black textured matt epoxy powder coated die-cast aluminium housing, integral luminaire. Heat resistant, clear, toughened glass cover fixed to the housing with EPDM rubber gasket and the glass is hinged to the housing and fastened with SS toggles.

Black epoxy powder coated MS mounting bracket.

Optics

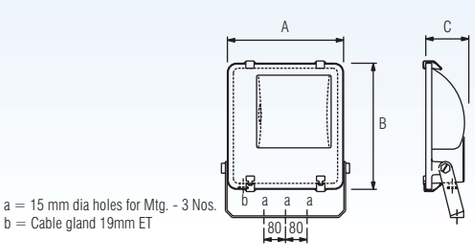
Electrochemically brightened, polished aluminium symmetrical / asymmetrical beam anodised reflector.

Lamp and Accessories

Suitable for 150W HPSV/MH DE / 250/400W HPSV/MH/MMH T lamp. GES / pair Rx 7s-24 lamp holder, copper ballast and accessories are wired upto the terminal block.

Degree of Protection

IP 65



Cat. Ref.	A	B	C
BJFL 150 SV T S/AS	335	380	130
BJFL 250 SV/MH/MMH T S/AS	380	455	155
BJFL 400 SV/MH/MMH T S/AS	380	455	155

BAJAJ LUMINAIRES
Making the difference

Area Lighting

BJAOL 1 With Neon Lamp

BJAOL 2 BC/ES

Aviation obstruction light with neon spiral

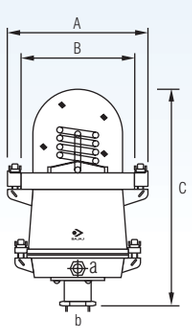
Luminaire Body
Aviation yellow coloured die-cast aluminium alloy housing, with built-in 75VA step up transformer.

Enclosure
Heat resistant, clear thick glass dome mounted on hinged die-cast aluminium ring secured to the body by two studs and wing nuts.

Mounting Arrangement
38 mm dia. threaded stem with lock nuts for mounting on pipe above structures.

Lamp and Accessories
Neon spiral lamp plugged into spring loaded high tension nylon socket and wired upto the terminal block.

Degree of Protection
IP 54



a = 19 mm dia. ET Cable entry
b = 38 mm dia. threaded stem with lock nuts for pipe entry

Cat. Ref.	A	B	C
BJOL 1 With Neon Lamp	235	188	375

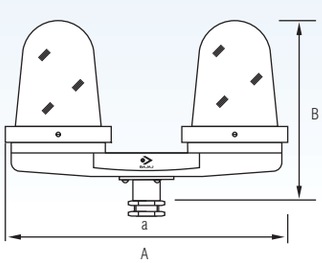
Aviation obstruction light with twin 100W GLS

Luminaire Body
Aviation yellow coloured die-cast aluminium alloy housing, for two nos. 100W GLS lamps.

Enclosure
Red coloured polycarbonate dome secured to housing by 3 nos. screws.

Mounting Arrangement
38 mm dia. threaded stem with lock nuts for mounting on pipe above structures.

Degree of Protection
IP 43



a = 38 mm threaded stem with lock nuts

Cat. Ref.	A	B
BJAOL 2 BC/ES	475	310

BJCG 80/125/70 SV/MH DE DD
BJCG 250/400 MV DD
BJCG 150/250/400 SV/MH DD

Deep Drawn, heavy duty, weatherproof control gear for HID lamp

Control Gear Body

Grey epoxy powder coated Deep drawn CRCA mild steel box and hinged cover with rubber gasket.

Electrical Accessories

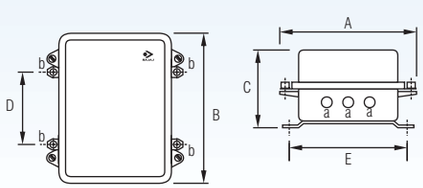
Copper ballast, Capacitor, Electronic Ignitor (If required) suitable for 80/125/250/400W HPMV & 70/150W/250/400 SV/MH lamps. Kit-Kat re-wireable fuse cutout and earthing terminal is pre-wired with PVC insulated copper wire upto the terminal block.

Cable Entry

3 nos. 20mm dia knock outs for cable entries.

Degree of Protection

IP 55



a = 3 Nos. 20 mm dia. Cable entry
b = 4 Nos. 8 mm dia. holes for mounting

Cat. Ref	A	B	C	D	E
BJCG 80/125 MV	196	220	110	90	175
BJCG 70 SV/MH DE DD	196	220	110	90	175
BJCG 250/400 MV DD	254	280	135	135	225
BJCG 150/250/400SV/MH DD	254	280	135	135	225

Cast aluminium, heavy duty, weatherproof control gear for HID lamp

Control Gear Body

Grey epoxy powder coated die-cast aluminium housing and dia-cast aluminium cover with rubber gasket.

Electrical Accessories

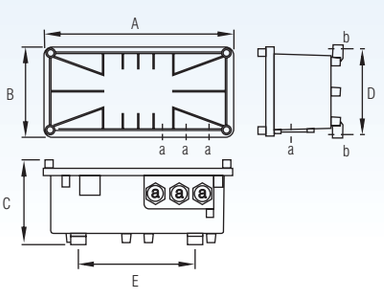
Copper ballast, Capacitor, Electronic Ignitor (If required) suitable for 80/125/250W HPMV and 70/150W HPSV/MH lamps. Backlite re-wireable fuse cutout and earthing terminal pre-wired with PVC insulated copper wire provided upto the terminal block.

Cable Entry

3 nos. 19 E.T cable entries.

Degree of Protection

IP 55



a = 3 Nos. ¾" BS conduit entry
b = 4 Nos. 7mm dia hole

Cat. Ref	A	B	C	D	E
BJCG 80/125/250 MV CA2	254	140	105	125	137
BJCG 70 SV/MH CA2	254	140	105	125	137
BJCG 150 SV/MH CA2	254	140	105	125	137

BAJAJ LUMINAIRES
Making the difference

Area Lighting

BJCGB 400 MV CA
BJCGB 250/400 SV/MH CA

Cast aluminium, heavy duty, weatherproof, control gear for HID lamp

Control Gear Body

Grey epoxy powder coated pressure die-cast aluminium box and hinged cover with rubber gasket.

Electrical Accessories

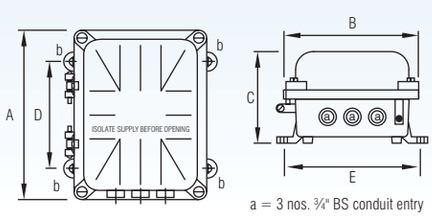
Copper ballast, Capacitor, Electronic Ignitor (If required) suitable for 400W HPMV/250/400 SV/MH lamps. Kit-kat re-wireable fuse cutout and earthing terminal pre-wired with PVC insulated copper wire is provided upto the terminal block.

Cable Entry

3 nos. 19 E.T cable entries.

Degree of Protection

IP 55



a = 3 nos. ¾" BS conduit entry
b = 4 nos. 10mm dia hole

Cat. Ref.	A	B	C	D	E
BJCGB 400 MV/CA	248	195	125	150	200
BJCGB 250/400 SV/MH CA	248	195	125	150	200

BJCGB 2x400 MV
BJCGB 2x250/400/1000 SV/MH CA

Cast aluminium, heavy duty, weatherproof, compact control gear for twin HID lamp

Control Gear Body

Grey epoxy powder coated die-cast aluminium box and hinged cover with rubber gasket.

Electrical Accessories

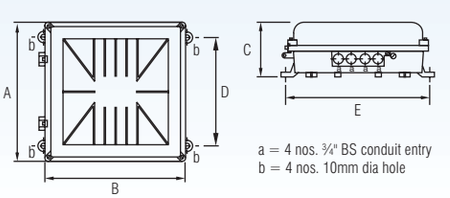
Copper ballast, Capacitor, Electronic Ignitor suitable for 2x250/400W HPMV and 250/400/1000W HPSV/MH lamps. Kit-Kat re-wireable fuse cutout and earthing terminal pre-wired with PVC insulated copper wire is provided upto the terminal block.

Cable Entry

4 nos. 19 E.T cable entries.

Degree of Protection

IP 55



a = 4 nos. ¾" BS conduit entry
b = 4 nos. 10mm dia hole

Cat. Ref.	A	B	C	D	E
BJCGB 2x400 MV/CA	318	318	130	250	325
BJCGB 2x250/400 SV/MH CA	318	318	130	250	325
BJCGB 1000 SV/MH CA	318	318	130	250	325

BJCG 2x250/400 MV MS
BJCG 2x250/400 SV/MH MS

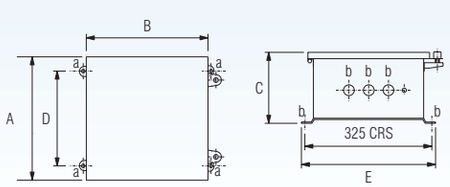
Heavy duty, weatherproof, mild steel, control gear box for twin HID lamps

Control Gear Body
Epoxy grey powder coated M.S. (CRCA) box and hinged cover with rubber gasket.

Electrical Accessories
Copper ballast, Capacitor, Electronic Ignitor (If required) suitable for 2x250/400W HPMV & 250/400 SV/MH lamps. Porcelain re-wireable fuse cutout and earthing terminal is pre-wired with PVC insulated copper wire upto the terminal block.

Cable Entry
3 nos. 20mm dia knock outs for cable entries.

Degree of Protection
IP 55



a = 4 nos.8 dia holes for Mtg
b = 3 nos.20 dia. knockouts holes

Cat. Ref.	A	B	C	D	E
BJCG 2x250/400 MV MS	315	315	140	250	350
BJCG 2x250/400 SV/MH MS	315	315	140	250	350

BAJAJ LUMINAIRES
Making the difference

Area Lighting

Technical & Commercial Data

ORDERING PRODUCT CODE	LUMINAIRE TYPE	LAMP TYPE	LAMP BASE	NORMAL VOLTAGE (V)	MAINS CURRENT IN AMPS. AT 240V	POWER FACTOR	LIST PRICE Rs.
160784	BJQF 500 IP54	Halogen 500	Rx 7s	240	-	-	**650.00***
161034	BJQF 1000 IP54	Halogen 1000	Rx 7s-24	240	-	-	**1250.00***
164400	BJEF 15 S*	HID LAMP	GES	240	-	-	**3950.00**
162136	BJEF 21 S*	HID LAMP	GES	240	-	-	**4350.00**
024401	BJEF 28 S*	HID LAMP	GES	240	-	-	**8400.00**
161297	BJENF 14*	Tubular HID LAMP	GES	240	-	-	**3250.00**
184450	BGENF 14*	Tubular HID LAMP	GES	240	-	-	**3450.00**
164460	BJENF 22*	Tubular TWIN HID LAMP	GES	240	-	-	**6900.00**
184460	BGENF 22*	Tubular TWIN HID LAMP	GES	240	-	-	**7070.00**
160615	BJENF 24*	Tubular TWIN HID LAMP	GES	240	-	-	**5750.00**
024441	BJEF 22 CA (RO)*	TWIN HID LAMP	GES	240	-	-	**7190.00**
184400	BGEMF 70 SV/MH SE	HPSV / MH T 70W	E27	240	0.40	≥ 0.85	**3200.00**
184470	BGEMF 70 MH DE WSII	MH DE 70W	Rx 7s	240	0.40	≥ 0.85	**3500.00**
184411	BGEMF 150 SV	HPSV T 150W	GES	240	0.80	≥ 0.85	**5150.00**
184431	BGEMF 150 MH DE WSII	MH DE 150W	Rx 7s-24	240	0.80	≥ 0.85	**5550.00**
184422+160272	BGEMF 250 SV	HPSV T 250W	GES	240	1.30	≥ 0.85	**7075.00**
184423+160272	BGEMF 250 MH	MH T 250W	GES	240	1.30	≥ 0.85	**7125.00**
184440+028213	BGEMF 400 SV	HPSV T 400SV	GES	240	2.10	≥ 0.85	**7750.00**
184424+028213	BGEMF 400 MH	MH T 400W	GES	240	2.10	≥ 0.85	**7800.00**
180265	BGEMFS 150 MH DE WSII	MH DE 150W	Rx 7s-24	240	0.80	≥ 0.85	**4550.00**
180289	BGEMFS 150 MH SE	MH SE 150W	GES	240	0.80	≥ 0.85	**4700.00**
180377+160272	BGEMFS 250 SV	HPSV T 250W	GES	240	1.30	≥ 0.85	**6740.00**
180378+160272	BGEMFS 250 MH	HPSV T 250W	GES	240	1.30	≥ 0.85	**6790.00**
180379+028213	BGEMFS 400 SV	HPSV T 400SV	GES	240	2.10	≥ 0.85	**7550.00**
180380+028213	BGEMFS 400 MH	MH T 400W	GES	240	2.10	≥ 0.85	**7600.00**
161078+160270	BJFL 02 70 MH DE	MH DE 70W	Rx 7s	240	0.40	≥ 0.85	**3960.00**
160341+160270	BJFL 70 SV S	HPSV T 70W	Rx 7s	240	0.40	≥ 0.85	**3895.00**
160345+160270	BJFL 70 SV AS	HPSV T 70W	Rx 7s	240	0.40	≥ 0.85	**3895.00**
160508+160270	BJFL 70 MH SE S	MH SE 70W	Rx 7s	240	0.40	≥ 0.85	**3975.00**
160553+160270	BJFL 70 MH SE AS	MH SE 70W	Rx 7s	240	0.40	≥ 0.85	**3975.00**
160349+160270	BJFL 70 MH DE S WSII	MH DE 70W	Rx 7s	240	0.40	≥ 0.85	**4240.00**
161656+162109	BJFL 11 150 MH DE	MH DE 150W	Rx 7s-24	240	0.80	≥ 0.85	**4410.00**
160351+162109	BJFL 150 SV T S	HPSV T 150W	GES	240	0.80	≥ 0.85	**4730.00**
160353+162109	BJFL 150 SV T AS	HPSV T 150W	GES	240	0.80	≥ 0.85	**4730.00**
160355+162109	BJFL 150 DE S WSII	MH DE 150W	Rx 7s-24	240	0.80	≥ 0.85	**4400.00**
160357+162109	BJFL 150 DE AS WSII	MH DE 150W	Rx 7s-24	240	0.80	≥ 0.85	**4400.00**
160359+160272	BJFL 250 SV T S	HPSV T 250W	GES	240	1.30	≥ 0.85	**6410.00**
160361+160272	BJFL 250 SV T AS	HPSV T 250W	GES	240	1.30	≥ 0.85	**6410.00**
161123+160272	BJFL 250 MH T S	MH T 250W	GES	240	1.30	≥ 0.85	**6460.00**
160360+160272	BJFL 250 MH T AS	MH T 250W	GES	240	1.30	≥ 0.85	**6460.00**

BAJAJ LUMINAIRES
Making the difference

Area Lighting

ORDERING PRODUCT CODE	LUMINAIRE TYPE	LAMP TYPE	LAMP BASE	NORMAL VOLTAGE (V)	MAINS CURRENT IN AMPS. AT 240V	POWER FACTOR	LIST PRICE Rs
160363+028213	BJFL 400 SV T S	HPSV T 400W	GES	240	2.10	≥ 0.85	**7430.00**
160365+028213	BJFL 400 SV T AS	HPSV T 400W	GES	240	2.10	≥ 0.85	**7430.00**
161124+028213	BJFL 400 MH T S	MH T 400W	GES	240	2.10	≥ 0.85	**7480.00**
160364+028213	BJFL 400 MH T AS	MH T 400W	GES	240	2.10	≥ 0.85	**7480.00**
161599+161698	BJFL 250 MMH T S	MMH T 250W	GES	240	1.30	≥ 0.85	**5920.00**
161695+161698	BJFL 250 MMH T AS	MMH T 250W	GES	240	1.30	≥ 0.85	**5920.00**
161476+161699	BJFL 400 MMH T S	MMH T 400W	GES	240	2.10	≥ 0.85	**6470.00**
161708+161699	BJFL 400 MMH T AS	MMH T 400W	GES	240	2.10	≥ 0.85	**6470.00**
161885	BJFLM 250 SV/MH	HPSV/MH T 250W	GES	240	-	-	**4600.00**
020075	BJAOL 1 With Neon Lamp	Neon Lamp	-	240	-	-	**7090.00**
024973	BJAOL 2 BC	2 x 100W GLS BC	BC	240	-	-	**4300.00**
020115	BJAOL 2 ES	2 x 100W GLS ES	E27	240	-	-	**4300.00**
160701+161848	BJCG 80 MV DD	--	-	240	0.43	≥ 0.85	**1840.00**
160703+161849	BJCG 125 MV DD	-	-	240	0.69	≥ 0.85	**1930.00**
160707+160270	BJCG 70 SV DD	-	-	240	0.40	≥ 0.85	**2035.00**
168646+162127	BJCG 250 MV DD	-	-	240	1.30	≥ 0.85	**2640.00**
168647+162248	BJCG 400 MV DD		-	240	2.10	≥ 0.85	**3190.00**
168461+162109	BJCG 150 SV DD	-	-	240	0.80	≥ 0.85	**2800.00**
168462+160272	BJCG 250 SV DD	-	-	240	1.30	≥ 0.85	**3400.00**
168464+160272	BJCG 250 MH DD (O.L)	-	-	240	1.30	≥ 0.85	**3450.00**
168463+028213	BJCG 400 SV DD	-	-	240	2.10	≥ 0.85	**4035.00**
168465+028213	BJCG 400 MH DD	-	-	240	2.10	≥ 0.85	**4085.00**
161039	BJCG 80 MV CA2	-	-	240	0.43	≥ 0.85	**2010.00**
161040	BJCG 125 MV CA2	-	-	240	0.69	≥ 0.85	**2040.00**
168512	BJCG 250 MV CA2	-	-	240	1.30	≥ 0.85	**2590.00**
161041	BJCG 70 SV CA2	-	-	240	0.40	≥ 0.85	**2200.00**
168541	BJCG 150 SV/MH CA2	-	-	240	0.80	≥ 0.85	**2800.00**
168513+162248	BJCGB 400 MV CA	-	-	240	2.10	≥ 0.85	**3550.00**
168532+160272	BJCGB 250 SV CA	-	-	240	1.30	≥ 0.85	**3600.00**
168514+160272	BJCGB 250 MH (O.L) CA	-	-	240	1.30	≥ 0.85	**3650.00**
168533+028213	BJCGB 400 SV CA	-	-	240	2.10	≥ 0.85	**4340.00**
168515+028213	BJCGB 400 MH (O.L) CA	-	-	240	2.10	≥ 0.85	**4390.00**
160623+160272	BJCGB 2 x 250 SV/MH CA	-	-	240	2.60	≥ 0.85	**7030.00**
160624+028213	BJCGB 2x400 SV/MH CA	-	-	240	4.20	≥ 0.85	**8425.00**
162099+028215	BJCGB 1000 SV/MH CA	-	-	240	5.10	≥ 0.85	**11650.00**
168442+160272	BJCG 2 x 250 SV/MH MS	-	-	240	2.60	≥ 0.85	**6080.00**
168453+028213	BJCG 2 x 400 SV/MH MS	-	-	240	4.20	≥ 0.85	**7800.00**

GENERAL NOTES:

- Due to our continuous efforts in developing products, improvement - Bajaj Electricals Limited reserves the right to make changes in the design and data without any prior notice.
- All the prices are with effect from 5th July, 2008.
- * With effect from 03 Oct, 2008
- All the prices are subject to change without any prior notice.
- Prices are exclusive of VAT, Octroi and other Govt. levy which shall be charged extra as applicable.
- Dealers may sell at prices lower than the list price.
- Dispute if any will be subject to Mumbai jurisdiction only.
- Non integral luminaires when used with HP MV / HPSV / MH lamp(s) requires separate control gear of appropriate rating.
- Variations in dimensions $\pm$ 3mm.
- Use superimposed ignitor for double ended metal halide lamp luminaires.
- Installation Photographs are indicative only.
- Suffix and cat. ref. WOB - without ballast

NOTES

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BANGALORE Bajaj Bhavan, No. 16, Residency Road, Bangalore 560 025.	080-22235486, 22238984, 22275505	080-22214878, 22275505	lum_am_ban@bajajelectricals.com
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CHANDIGARH SCO 52, Sector-26, Madhya Marg, Chandigarh 160 026.	0172-4303211	0172-2792932	lum_am_chd@bajajelectricals.com
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NOIDA Flat No. 505-507, 5th Floor, Vikrant Tower, 4, Rajendra Place, Pusa Road, New Delhi 110 008.	011-25711961, 25861963, 25861964	011-25861962	lum_am_del2@bajajelectricals.com
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RAIPUR Bajaj Bhavan, G. E. Road, Near Mahaveer Garden, Raipur 492 001.	0771-2263986, 2263976, 4060166	0771-2263310	lum_am_rai@bajajelectricals.com

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REGISTERED OFFICE 45/47, Veer Nariman Road, Mumbai 400 001.	022-22043841, 22045046, 22045341	Fax: 022-22851279

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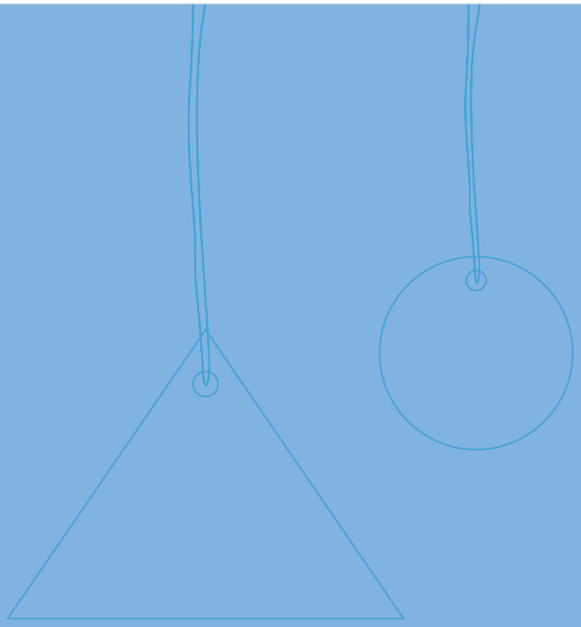
Bajaj Electricals Limited

Inspiring Trust



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