

# Plasma



Lighting Solution for Controlled Environments



**BAJAJ LUMINAIRES**

*Making the difference*

## Clean Lighting for Clean Environment

Clean Rooms are special environment governed by the constraints of space, temperature, ventilation, hygiene, movement and value addition done by Man & Machine.

Clean room environments are essential for Pharmaceutical industries, F & B industries, Micro Electronics industries, Space research organisations, Optical component industries, Photographic & Xerography industries, Precision watch making units, Automobile painting booths... even interiors of an aircraft are clean room environments.

Provisions under Schedule M released by Govt of India call for Good Manufacturing Practices (GMP) for Pharma Industries in India. This comes into effect from January 2005. This will encompass for Pharma Industries producing IV Fluids, Ophthalmic preparation, Tablets & Capsules, Bulk Drugs with the basic objective of improving quality of Indian Drugs.

Good, Clean Lighting is an integral part of Good Manufacturing Practices (GMP).

## What is a Clean Room?

Clean rooms are isolated from lint, dust, microbes, pollen and dry skins and have following characteristics:

1. Controlled Air ventilation.
2. Maintenance of Laminar Air Flow (LAF) by creating large grills on the floors and ceilings. This induces very low air speed to avoid deposition of entraining dust on the exposed surfaces.
3. Maintenance of equipments from outside the clean rooms from the BAY area above the ceilings.
4. Controlled Humidity between 30-50%.
5. Controlled internal temperature between 20-25 deg Celsius.
6. All the areas are air-locked to prevent any accidental opening by air-draft.
7. All the Clean rooms have high positive atmospheric pressures.
8. The heart of a clean room is the ceiling system

## Clean Room Standards

Cleanliness of a Clean room can be quantified in terms of PARTICLE COUNT normally done as per US FDA Regulations (United States Food & Drugs Administration) by a measure as below:

“No of Particles of size < 0.5 Microns in a Cubic ft of Space”

The Classification can be tabulated as below

English Classification in One Cubic Ft of Space	No of Particles of size < 0.5 Microns
Class 1	1
Class 10	10
Class 100	100
Class 1000	1000
Class 10000	10000
Class 100,000	100,000

The Particle count is done using Velometers and executed by counting no of colonies the microbes make on chemically treated dish.

## Clean Room Luminaire: The Saviour

The Clean room designs have been evolving keeping pace with technological advancements in terms of material, finishes, time to install and functions. The ceiling systems are pre-fabricated and installed on the site in fraction of time earlier spent on RCC ceiling structures.

A good Clean Room luminaire must be suitable for installation on such ceilings as well.

The essential characteristics of a good Clean room luminaire can be summarized as below:

1. The luminaire surfaces should be easy to clean and to disinfect. The material of construction should be non-corrosive to normal disinfectants like water, mild detergents and commercial grade Isopropyl alcohols.
2. Since Clean rooms are wet cleaned & disinfected, the luminaire should lend itself to protection against moisture and mild water jet cleaning. Ingress Protection of IP54 is mandatory.
3. The Luminaire construction should lend itself to maintenance from BAY AREA. In less stringent class of Clean rooms, the luminaire can be also designed for maintenance from clean room side.
4. The Luminaire should be totally enclosed and lend itself to thermal cycling for long service life of control gear and lamp.
5. The sealants and gaskets used should be non-hygroscopic in nature to avoid mould growth due to moisture. Mould growth leads to generation of bacteria. Recommended materials are XLPE, Silicon and EPDM.
6. The luminaire should withstand cyclic thermal stresses because the Clean rooms are periodically sterilized by Autoclaving\* and Dry Heat Sterilization (DHS)\*\*.

\* Autoclaving : A process in which pressurized air at 1.5 Kg/Sq cm and 120<sup>0</sup> C temperature is used for 30 minutes for sterilization of the Clean room.

\*\* DHS: Is a process by which temperatures of the clean room is raised upto 160<sup>0</sup> C for 2 hours to sterilize the clean room.

## List of Few Satisfied Corporate Customers:

<b>Biological E Limited</b>	<b>Cipla Limited</b>
<b>Emcure Pharmaceuticals Limited</b>	<b>GVK Biosciences Private Limited</b>
<b>Sandoz Private Limited</b>	<b>Indian Drugs &amp; Pharmaceutcals Ltd</b>
<b>Ind-Swift Laboratories Ltd.</b>	<b>Klitch Drugs</b>
<b>Mankind Pharma Limited</b>	<b>Micro Labs Limited</b>
<b>Nectar Lifesciences Limited</b>	<b>Okasa Pharma Limited</b>
<b>Ranbaxy Laboratories</b>	<b>Raptakos Brett &amp; Co. Ltd.</b>
<b>Star Drugs &amp; Research Labs limited</b>	<b>Torrent Pharmaceuticals Limited</b>
<b>Windlas Biotech, etc.</b>	

Plasma

Lighting Solution for Controlled Environments





## BPSF 218 C LHD

Surface mounting FRONT OPENING clean room luminaires suitable for twin CFL lamp



Loss proof self locking SS screws



SS string for self holding front frame



Loop in loop out cable gland

### Application

Pharmaceuticals, Food & Beverage industries, Electronic component manufacturing areas, laboratories, etc.

### Luminaire Body

Epoxy white powder coated CRCA sheet steel housing, and front frame fixed to the housing with loss proof Stainless steel screws

### Reflector

Electrochemically brightened, polished and anodised aluminium reflector

### Enclosure

Clear acrylic cover is sealed with powder coated frame & non-hygroscopic XLPE gasket with special interlocking system to ensure foolproof dust/ particle protection

### Control Gear

State-of-art new generation electronic ballasts < 10 % THD mounted on removable gear tray and pre-wired upto terminal block

### Lamp

Luminaire is suitable for twin 18W CFL

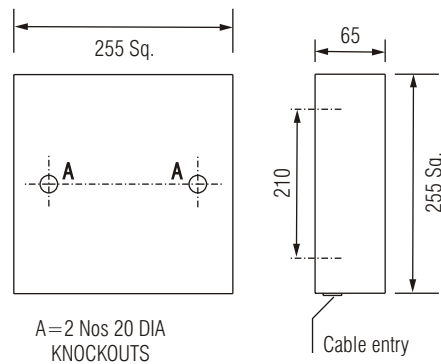
### Environmental Protection

IP 65

## Electrical Data

Product Code	Cat. Ref.	Lamp Type & Wattage (W)	Nominal Voltage (V)	Mains Current in Amps. at 240 V	Power Factor
530869	BPSF 218 C LHD	'D' Type CFL 2 x 18	240	0.151	≥ 0.95

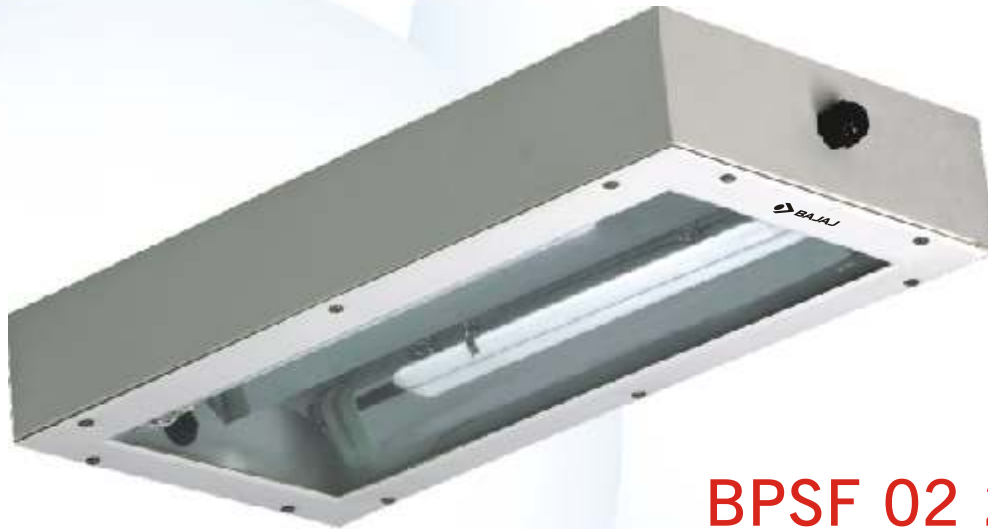
## Line diagram



Mr. Ganesh Deshmukh  
Senior Manager - Engineering & Projects  
Microlabs Limited, Baddi

*"The response time taken by Bajaj is good. We are happy with the response given by Bajaj. Yes, Bajaj has inspired trust in me"*





## BPSF 02 236 C LHD

Surface mounting FRONT OPENING  
clean room luminaires suitable for  
twin CFL lamp



Aluminium parabolic reflector for wider distribution



SS clip for lamp holding for uniform distribution



Non-hygroscopic XLPE gasket to ensure degree of ingress protection

### Application

Pharmaceuticals, Food & Beverage industries, Electronic component manufacturing areas, laboratories, etc.

### Luminaire Body

Epoxy white powder coated CRCA sheet steel housing, and front frame fixed to the housing with loss proof Stainless steel screws

### Reflector

Electrochemically brightened, polished and anodised aluminium reflector

### Enclosure

Clear acrylic cover is sealed with powder coated frame & non-hygroscopic XLPE gasket with special interlocking system to ensure foolproof dust/ particle protection

### Control Gear

State-of-art new generation electronic ballasts < 10 % THD mounted on removable gear tray and pre-wired upto terminal block

### Lamp

Luminaire is suitable for twin 36W CFL

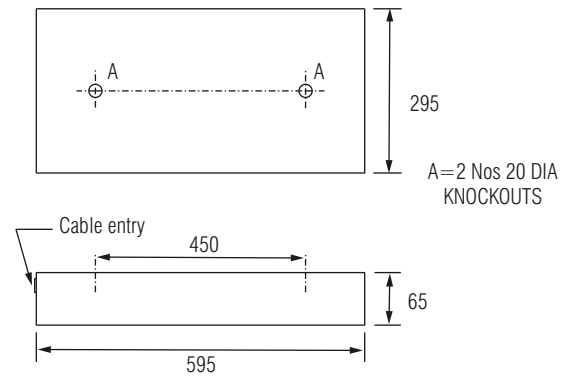
### Environmental Protection

IP 65

## Electrical Data

Product Code	Cat. Ref.	Lamp Type & Wattage (W)	Nominal Voltage (V)	Mains Current in Amps. at 240 V	Power Factor
530868	BPSF 02 236 C LHD	'L' Type CFL 2 x 36	240	0.299	≥ 0.95

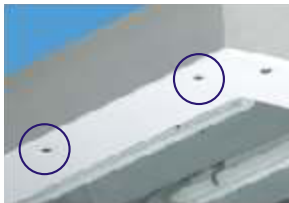
## Line diagram





## BPSF 236/336 C LHD

Surface mounting FRONT OPENING clean room luminaires suitable for twin/triple CFL lamp



Loss proof self locking SS screws



SS string for self holding front frame



Loop in loop out cable gland

### Application

Pharmaceuticals, Food & Beverage industries, Electronic component manufacturing areas, laboratories, etc.

### Luminaire Body

Epoxy white powder coated CRCA sheet steel housing, and front frame fixed to the housing with loss proof Stainless steel screws

### Reflector

Electrochemically brightened, polished and anodised aluminium reflector

### Enclosure

Clear acrylic cover is sealed with powder coated frame & non-hygroscopic XLPE gasket with special interlocking system to ensure foolproof dust/ particle protection

### Control Gear

State-of-art new generation electronic ballasts < 10 % THD mounted on removable gear tray and pre-wired upto terminal block

### Lamp

Luminaire is suitable for twin/triple 36W CFL

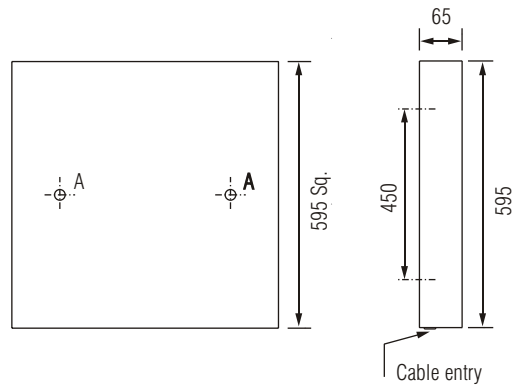
### Environmental Protection

IP 65

## Electrical Data

Product Code	Cat. Ref.	Lamp Type & Wattage (W)	Nominal Voltage (V)	Mains Current in Amps. at 240 V	Power Factor
530871	BPSF 236 C LHD	'L' Type CFL 2 x 36	240	0.299	≥ 0.95
530872	BPSF 336 C LHD	'L' Type CFL 3 x 36	240	0.450	≥ 0.95

## Line Diagram





## BPSF 02 236 F LHD

Surface mounting FRONT OPENING  
clean room luminaires suitable for  
twin FTL lamp



Aluminium parabolic reflector



Loop in loop out cable gland



Non-hygroscopic XLPE gasket to ensure  
degree of ingress protection

### Application

Pharmaceuticals, Food & Beverage industries, Electronic component manufacturing areas, laboratories, etc.

### Luminaire Body

Epoxy white powder coated CRCA sheet steel housing, and front frame fixed to the housing with loss proof Stainless steel screws

### Reflector

Electrochemically brightened, polished and anodised aluminium reflector

### Enclosure

Clear acrylic cover is sealed with powder coated frame & non-hygroscopic XLPE gasket with special interlocking system to ensure foolproof dust/ particle protection

### Control Gear

State-of-art new generation electronic ballasts < 10 % THD mounted on removable gear tray and pre-wired upto terminal block

### Lamp

Luminaire is suitable for twin 36W FTL

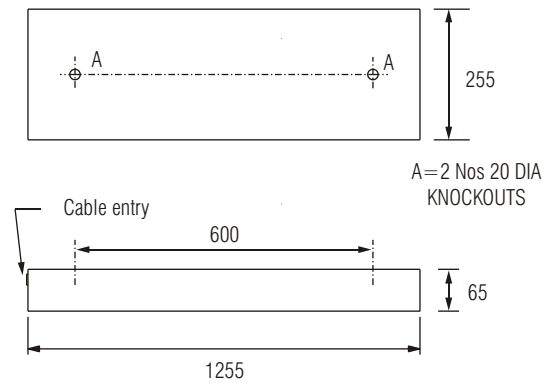
### Environmental Protection

IP 65

## Electrical Data

Product Code	Cat. Ref.	Lamp Type & Wattage (W)	Nominal Voltage (V)	Mains Current in Amps. at 240 V	Power Factor
530867	BPSF 02 236 F LHD	FTL 2 x 36	240	0.299	≥ 0.95

## Line Diagram



Mr. H. P. Mishra  
Manager - Electrical  
Mankind Pharma, Paonta Sahib

"We have not faced any problem with Bajaj Plasma Luminaires. I am happy with the 'Bajaj Professional' way. Bajaj has made a difference to my project"





## BPRF 218 C LHD

Recess mounting FRONT OPENING  
clean room luminaires suitable for  
twin CFL lamp



Loss proof self locking SS screws



Dovetail gasket



Z bracket in housing for better  
ingress protection & mechanical strength

### Application

Pharmaceuticals, Food & Beverage industries, Electronic component manufacturing areas, laboratories, etc.

### Luminaire Body

Epoxy white powder coated CRCA sheet steel housing, and front frame fixed to the housing with loss proof Stainless steel screws

### Reflector

Electrochemically brightened, polished and anodised aluminium reflector

### Enclosure

Clear acrylic cover is sealed with powder coated frame & non-hygroscopic XLPE gasket with special interlocking system to ensure foolproof dust/ particle protection

### Control Gear

State-of-art new generation electronic ballasts < 10 % THD mounted on removable gear tray and pre-wired upto terminal block

### Lamp

Luminaire is suitable for twin 18W CFL

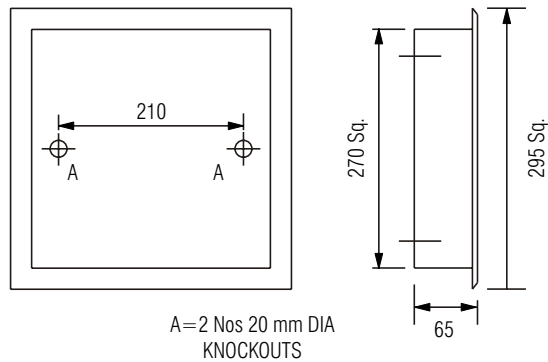
### Environmental Protection

IP 65

## Electrical Data

Product Code	Cat. Ref.	Lamp Type & Wattage (W)	Nominal Voltage (V)	Mains Current in Amps. at 240 V	Power Factor
530860	BPRF 218 C LHD	'D' Type CFL 2 x 18	240	0.151	≥ 0.95

## Line Diagram





## BPRF 02 236 C LHD

Recess mounting FRONT OPENING  
clean room luminaires suitable for  
twin CFL lamp



Loss proof self locking SS screws



Dovetail gasket



Z bracket in housing for better  
ingress protection & mechanical strength

### Application

Pharmaceuticals, Food & Beverage industries, Electronic component manufacturing areas, laboratories, etc.

### Luminaire Body

Epoxy white powder coated CRCA sheet steel housing, and front frame fixed to the housing with loss proof Stainless steel screws

### Reflector

Electrochemically brightened, polished and anodised aluminium reflector

### Enclosure

Clear acrylic cover is sealed with powder coated frame & non-hygroscopic XLPE gasket with special interlocking system to ensure foolproof dust/ particle protection

### Control Gear

State-of-art new generation electronic ballasts  
< 10 % THD mounted on removable gear tray and pre-wired upto terminal block

### Lamp

Luminaire is suitable for twin/ 36W CFL

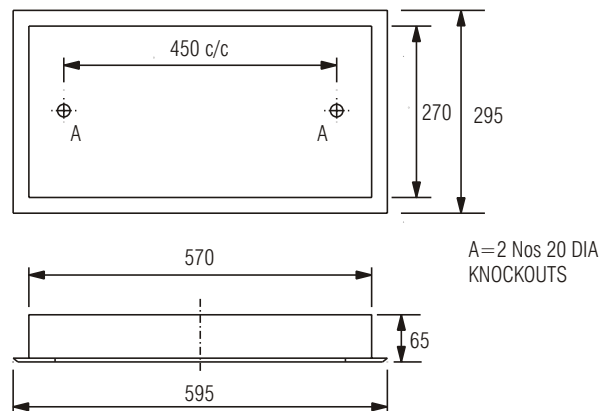
### Environmental Protection

IP 65

## Electrical Data

Product Code	Cat. Ref.	Lamp Type & Wattage (W)	Nominal Voltage (V)	Mains Current in Amps. at 240 V	Power Factor
530863	BPRF 02 236 C LHD	'L' Type CFL 2 x 36	240	0.299	≥ 0.95

## Line Diagram



Mr. Kanda Kumar P.  
Asst. Manager - Projects  
Pharma Plan (India) Limited, Bangalore

"Their technical team, sales and marketing team keep coming up with the latest technical data which helps us"





## BPRF 236/336 C LHD

Recess mounting FRONT OPENING  
clean room luminaires suitable for  
twin/triple CFL lamp



Loss proof self locking SS screws



Dovetail gasket



Z bracket in housing for better  
ingress protection & mechanical strength

### Application

Pharmaceuticals, Food & Beverage industries, Electronic component manufacturing areas, laboratories, etc.

### Luminaire Body

Epoxy white powder coated CRCA sheet steel housing, and front frame fixed to the housing with loss proof Stainless steel screws

### Reflector

Electrochemically brightened, polished and anodised aluminium reflector

### Enclosure

Clear acrylic cover is sealed with powder coated frame & non-hygroscopic XLPE gasket with special interlocking system to ensure foolproof dust/ particle protection

### Control Gear

State-of-art new generation electronic ballasts < 10 % THD mounted on removable gear tray and pre-wired upto terminal block

### Lamp

Luminaire is suitable for twin/triple 36W CFL

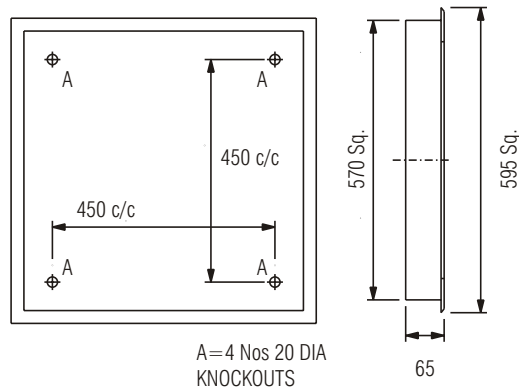
### Environmental Protection

IP 65

## Electrical Data

Product Code	Cat. Ref.	Lamp Type & Wattage (W)	Nominal Voltage (V)	Mains Current in Amps. at 240 V	Power Factor
530861	BPRF 236 C LHD	'L' Type CFL 2 x 36	240	0.299	≥ 0.95
530862	BPRF 336 C LHD	'L' Type CFL 3 x 36	240	0.450	≥ 0.95

## Line Diagram





## BPRF 02 236 F LHD

Recess mounting FRONT OPENING  
clean room luminaires suitable for  
twin FTL lamp



Loss proof self locking SS screws



Dovetail gasket



Z bracket in housing for better  
ingress protection & mechanical strength

### Application

Pharmaceuticals, Food & Beverage industries, Electronic component manufacturing areas, laboratories, etc.

### Luminaire Body

Epoxy white powder coated CRCA sheet steel housing, and front frame fixed to the housing with loss proof Stainless steel screws

### Reflector

Electrochemically brightened, polished and anodised aluminium reflector

### Enclosure

Clear acrylic cover is sealed with powder coated frame & non-hygroscopic XLPE gasket with special interlocking system to ensure foolproof dust/ particle protection

### Control Gear

State-of-art new generation electronic ballasts < 10 % THD mounted on removable gear tray and pre-wired upto terminal block

### Lamp

Luminaire is suitable for twin 36W FTL

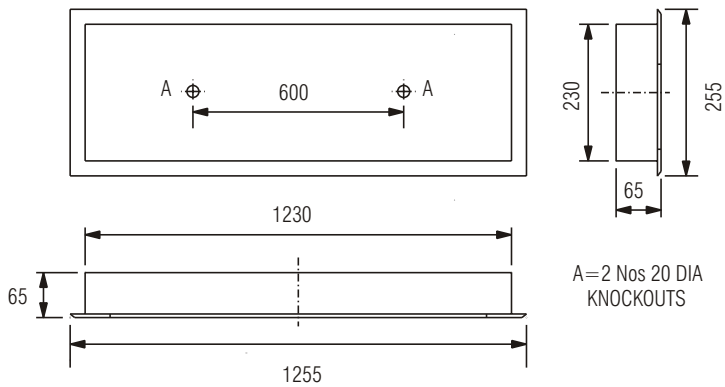
### Environmental Protection

IP 65

## Electrical Data

Product Code	Cat. Ref.	Lamp Type & Wattage (W)	Nominal Voltage (V)	Mains Current in Amps. at 240 V	Power Factor
530859	BPRF 02 236 F LHD	FTL 2 x 36	240	0.299	≥ 0.95

## Line Diagram





## BPRR 218 C LHD

Recess mounting REAR OPENING  
clean room luminaires suitable for  
twin 18W CFL lamp



Separate enclosure for electronic control gear



Inbuilt handle for easy maintenance



Special mounting clamps for  
walkable false ceiling

### Application

Pharmaceuticals, Food & Beverage industries, Electronic component manufacturing areas, laboratories, etc.

### Luminaire Body

Epoxy white powder coated CRCA sheet steel housing, and top opening frame fixed to the housing with screws

### Reflector

Electrochemically brightened, polished and anodised aluminium reflector

### Enclosure

Clear acrylic cover is sealed with powder coated frame & non-hygroscopic XLPE gasket with special interlocking system to ensure foolproof dust/ particle protection

### Control Gear

State-of-art new generation electronic ballasts < 10 % THD mounted on removable gear tray and pre-wired upto terminal block

### Mounting Facility

Recess mounting top opening luminaires are suitable for concrete bund / walkable false ceiling

### Lamp

Luminaire is suitable for twin 18W CFL

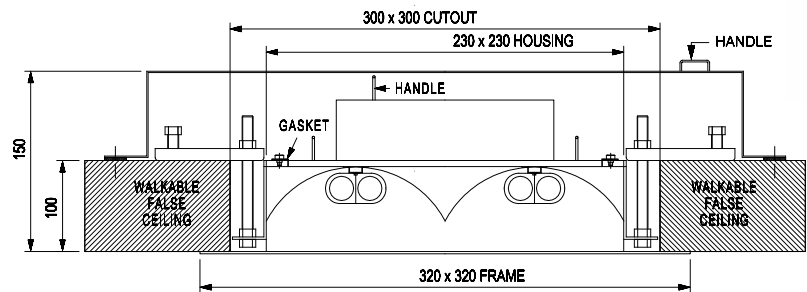
### Environmental Protection

IP 65 (Lamp compartment only)

## Electrical Data

Product Code	Cat. Ref.	Lamp Type & Wattage (W)	Nominal Voltage (V)	Mains Current in Amps. at 240 V	Power Factor
530873	BPRR 218 C LHD	'D' Type CFL 2 x 18	240	0.151	≥ 0.95

## Line Diagram





## BPRR 02 236 C LHD

Recess mounting REAR OPENING  
clean room luminaires suitable for  
twin 36W CFL lamp



Aluminium parabolic reflector



Easy access lamp compartment



Special mounting bracket for  
concrete bund false ceiling

### Application

Pharmaceuticals, Food & Beverage industries, Electronic component manufacturing areas, laboratories, etc.

### Luminaire Body

Epoxy white powder coated CRCA sheet steel housing, and top opening frame fixed to the housing with screws

### Reflector

Electrochemically brightened, polished and anodised aluminium reflector

### Enclosure

Clear acrylic cover is sealed with powder coated frame & non-hygroscopic XLPE gasket with special interlocking system to ensure foolproof dust/ particle protection

### Control Gear

State-of-art new generation electronic ballasts < 10 % THD mounted on removable gear tray and pre-wired upto terminal block

### Mounting Facility

Recess mounting top opening luminaires are suitable for concrete bund / walkable false ceiling

### Lamp

Luminaire is suitable for twin 36W CFL

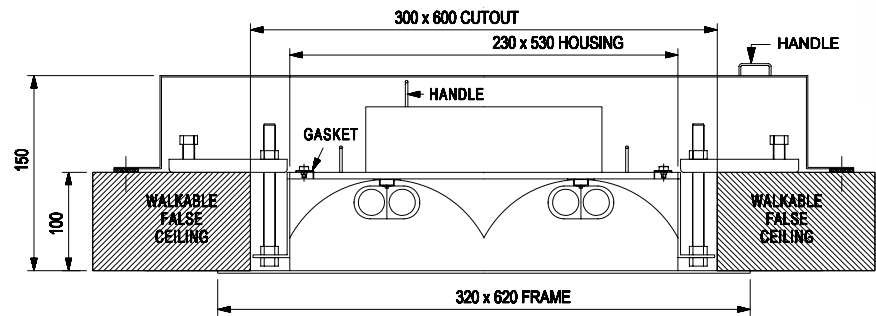
### Environmental Protection

IP 65 (Lamp compartment only)

## Electrical Data

Product Code	Cat. Ref.	Lamp Type & Wattage (W)	Nominal Voltage (V)	Mains Current in Amps. at 240 V	Power Factor
530866	BPRR 02 236 C LHD	'L' Type CFL 2 x 36	240	0.299	≥ 0.95

## Line Diagram





## BPRR 236/336 C LHD

Recess mounting REAR OPENING  
clean room luminaires suitable for  
twin/triple 36W CFL lamp



Special mounting clamps for  
walkable false ceiling



Easy access to electronic control gear



Aluminium parabolic reflector

### Application

Pharmaceuticals, Food & Beverage industries, Electronic component manufacturing areas, laboratories, etc.

### Luminaire Body

Epoxy white powder coated CRCA sheet steel housing, and top opening frame fixed to the housing with screws

### Reflector

Electrochemically brightened, polished and anodised aluminium reflector

### Enclosure

Clear acrylic cover is sealed with powder coated frame & non-hygroscopic XLPE gasket with special interlocking system to ensure foolproof dust/ particle protection

### Control Gear

State-of-art new generation electronic ballasts < 10 % THD mounted on removable gear tray and pre-wired upto terminal block

### Mounting Facility

Recess mounting top opening luminaires are suitable for concrete bund / walkable false ceiling

### Lamp

Luminaire is suitable for twin/triple 36W CFL

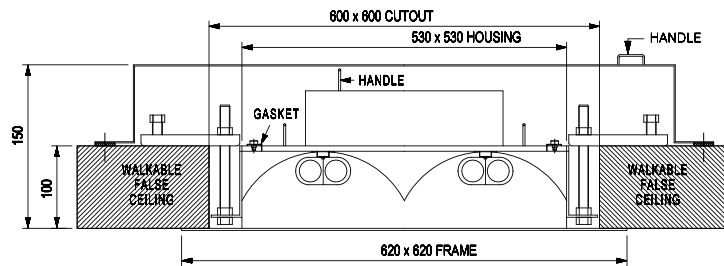
### Environmental Protection

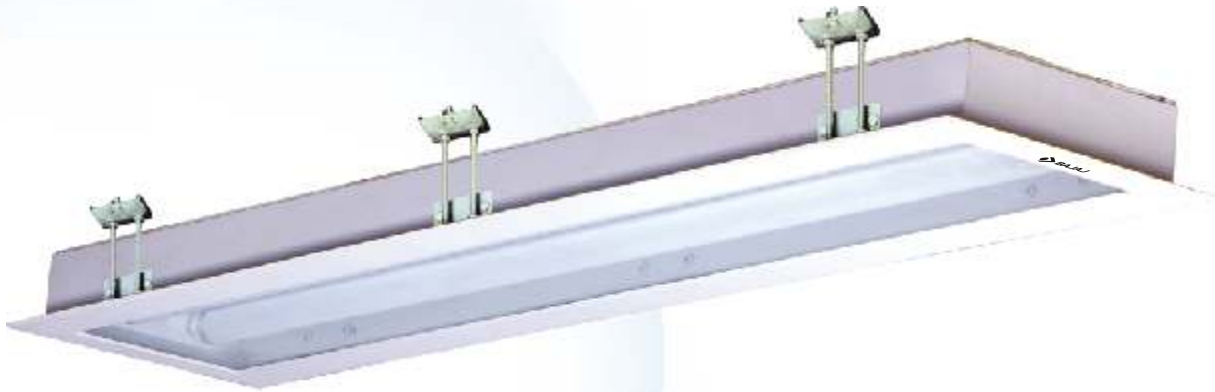
IP 65 (Lamp compartment only)

## Electrical Data

Product Code	Cat. Ref.	Lamp Type & Wattage (W)	Nominal Voltage (V)	Mains Current in Amps. at 240 V	Power Factor
530864	BPRR 236 C LHD	'L' Type CFL 2 x 36	240	0.299	≥ 0.95
530865	BPRR 336 C LHD	'L' Type CFL 3 x 36	240	0.450	≥ 0.95

## Line Diagram





## BPRR 02 236 F LHD

Recess mounting REAR OPENING  
clean room luminaires suitable for  
twin 36W FTL lamp



Special mounting clamps for  
walkable false ceiling



Easy access to electronic control gear



Aluminium parabolic reflector

### Application

Pharmaceuticals, Food & Beverage industries, Electronic component manufacturing areas, laboratories, etc.

### Luminaire Body

Epoxy white powder coated CRCA sheet steel housing, and top opening frame fixed to the housing with screws

### Reflector

Electrochemically brightened, polished and anodised aluminium reflector

### Enclosure

Clear acrylic cover is sealed with powder coated frame & non-hygroscopic XLPE gasket with special interlocking system to ensure foolproof dust/ particle protection

### Control Gear

State-of-art new generation electronic ballasts < 10 % THD mounted on removable gear tray and pre-wired upto terminal block

### Mounting Facility

Recess mounting top opening luminaires are suitable for concrete bund / walkable false ceiling

### Lamp

Luminaire is suitable for twin 36W FTL

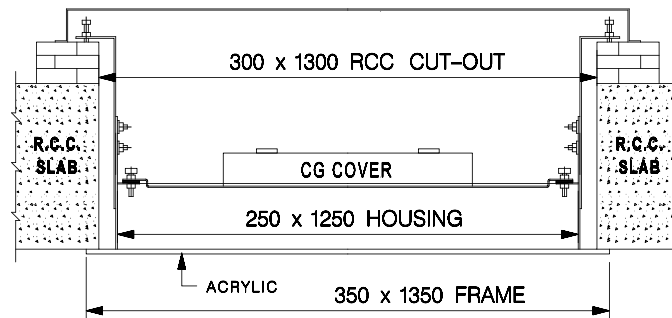
### Environmental Protection

IP 65 (Lamp compartment only)

## Electrical Data

Product Code	Cat. Ref.	Lamp Type & Wattage (W)	Nominal Voltage (V)	Mains Current in Amps. at 240 V	Power Factor
530874	BPRR 02 236 F LHD	FTL 2 x 36	240	0.299	≥ 0.95

## Line Diagram



- Due to continuous efforts in developing products, improvement - Bajaj Electricals Limited reserves the right to make changes in the design and data without any prior notice.
- The prices are subject to alternation without any prior notice.
- All dimensions are in mm. Tolerance  $\pm 3$  mm

**AHMEDABAD** 27543964, 27543967 **BANGALORE** 22235486, 22238984  
**BHUBANESWAR** 2390697, 2396980 **CHANDIGARH** 5005778, 5005779  
**CHENNAI** 52162200 **COCHIN** 2391119, 2392039  
**DELHI** 23236055, 23056-5057 **GUWAHATI** 2346497, 2346499  
**HYDERABAD** 23442932, 33 **INDORE** 2548908, 2548909, 5085574  
**JAIPUR** 2377364, 2368276 **KOLKATA** 22379270, 22377657, 22216637-38  
**LUCKNOW** 2282549, 2620595, 2231655 **MUMBAI** 22089091/92  
**NAGPUR** 2540318, 2540319 **NOIDA** 25711961, 25861963  
**PATNA** 2220155, 2225911, 2231427 **PUNE** 26360801, 26361321, 26360703  
**RAIPUR** 2263986, 2263976, 2660166  
**HEAD OFFICE** 22043780-22851462-64, 22875135  
**REGISTERED OFFICE** 22043841, 22045046, 22045341



**Bajaj Electricals Ltd.**

*Inspiring Trust*

**LUMINAIRES LIGHTING BUSINESS UNIT**

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