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MICROTECH ELECTRONICS

Apanjan Apartment, 18/A, Flat - C, 3rd Floor,
Nityananda Nagar, Andul Road, Howrah - 711109.

Ph. 9874759555 / 9874993200

e-mail : info@microtechelectronics.co.in

MICROTECH ELECTRONICS LED BASED ILLUMINATED SIGNAGES

01

LED (Light Emitting Diode) illuminated signage gives long-life (in excess of 1, 00, 000 hours i.e. 11 years in continuous burning basis) thus require no further replacement for long period, lower power consumption (less than 0.5 watt at 240V AC) aesthetically pleasing



Standard 'EXIT' Sign

ADVANTAGES

- Very low power consumption (0.5 watt at 240V AC)
- Provides longer life (1,00,000 hours in continuous burning basis)
- Release headache of continuous maintenance
- Aesthetically pleasing
- Extremely thin , as compared to box signs
- Wide range voltage availability
- Saves more than 200 units of electricity per annum (as compared to conventional signs)
- Vibration-resistant and shock proof characteristics
- Available in various colours & sizes

Note: Signages are also available in battery back-up mode

MICROTECH ELECTRONICS LED BASED LINE TESTER

02

LED based heavy duty electric line tester is a reliable and convenient product which has been designed for the purpose of line voltage testing.

Electric maintenance personnel in industry normally test 415VAC phase-to-phase voltage with a makeshift arrangement in which two 220VAC GLS bulbs are connected in series. This arrangement generally incurs heavy consumption of GLS bulbs due to breakage and theft.

The LED Heavy duty line tester has been developed for line testing in harsh industrial conditions and offers the following features:

Compact and sturdy construction, suitably ruggedized for industrial use:

- Maintenance- free reliable indication by means of long-life solid-state light emitting diodes (LED), making it completely shock-proof and vibration-resistant.
- Apart from indication the condition of the line ,the ability to provide an approximate idea of the magnitude of voltage on the tested line, by means of a flashing indication as

AC	DC
25V – 60V AC (approx) : Very slow flash rate 220V AC (approx) : Fast flash rate Above 400V AC : practically steady	25V – 60V DC (approx) : Very slow flash rate 110V DC (approx) : Fast flash rate 150 – 220V DC : (approx) : Fast flicker/Steady



Note: Above 400V, the tester should not be allowed to light up for more than one minute. The capability of differentiating between AC and DC, on AC, indication occurs with either polarity of connection and on DC, indication will be polarity - sensitive.

Construction: The tester body is made of unbreakable insulating thermosetting material (ABS). The electrical components and circuitry are further insulated in a module made of DMC material, (which has excellent insulation properties), fitted inside the ABS body test probes are provided for connecting to the test points. A clip on the tester body allows the user to attach it to his waist belt, so that both hands are free for using the test probes. The probes can be neatly tied to the tester body when not in use by means of a provided belt.

Make : MICROTECH ELECTRONICS

MICROTECH ELECTRONICS LED BASED PILOT LIGHT INDICATORS FOR CONTROL AND INSTRUMENTATION PANEL

03

LED modules designed and developed by a group of highly qualified Engineers, Specifically for control and instrumentation panels are a substitute of conventional filament lamps and offers numerous advantages such as :

- A long life (in excess of 1, 00, 000 hours in continuous burning basis) releases headache of maintenance.
- Lower energy conservation characteristics (0.5 watt at 240V AC) reduce significant cost of energy, shockproof.
- Vibration proof construction gives – solid state reliability
- Short payback period (in view of low power consumption and life)
- Led pilot lights are able to withstand in input voltage variation without any effect in life.

These LED (light emitting diode) modules integrated with a circular can be directly mounted on the panel. Any rated voltage (from 6V to 240V AC or DC) can be directly applied to the module.



AC or DC, which gives an illumination perfectly, maintained for any panel light output suitable as per requirement, Its smooth and eye soothing reflection is universally accepted these innovative modules developed by a group of engineers gives reliability, low power consumption and cost effectiveness.

LED based Pilot Light designed with excessive care are made available to the suitability of industrial environment of high ambient absorption and fire retardant bodies, makes it viable as non in flammability and safety device. In built IVP (induced voltage protection) helps to protect module from glowing during off condition of the control panel for induced or leakage voltage.

Make : MICROTECH ELECTRONICS

LED modules based on InP (Red, Orange, yellow) / GAP (Lime Green), InGaN (blue, Pure Green) technology with a greater MTBF (Mean time between failure).

LED modules are available in following cut- out sizes.

*6mm *8mm *9.5mm *12.5mm *14.5mm *16.5mm *19.5mm

*22.5mm *27.5mm *30.5mm *37.5mm

04

Technical features of 6mm and 8mm Panel cutout indicators:

Body made of Brass with chrome Plated.

Input termination can be solderable lug type or flying lead as per the requirement of the customer.

Available from 6V to 250V AC or DC.

Unbreakable polycarbonate lens.



6mm Cutout Indicators



8mm Cutout Indicators

Technical features of 9.5mm

Body made of Brass with chrome plated or fire retardant ABS

Input termination can be solderable lug type or flying lead as per the requirement of the customer.

Available in different voltages (6V to 250V AC or DC).

Unbreakable polycarbonate lens.



9.5mm Cutout Indicators

Technical features of 12.5mm and 14.5mm

Body made of Brass with chrome plated or fire retardant ABS

Input termination screw type suitable for pin type lug. However, flying lead termination and solderable lug can be given on request.

Available in different voltages (6V to 250V AC or DC).

In- Built Induced voltage protection (IVP) can be provided on request.

Unbreakable polycarbonate lens.



12.5mm Cutout Indicators



14.5mm Cutout Indicators

Technical features of 16.5mm

Body made of Brass with black oxidised or fire retardant ABS

Flush type indicators are also available in Brass Body with chrome plated.

Available in different voltages (6V to 250V AC or DC). In-built Induced voltage protection (IVP) can be provided on request. Unbreakable polycarbonate lens.

Input termination screw type suitable for pin type lug. However, flying lead termination and solderable lug can be given request.



16mm Cutout Indicators

Make : MICROTECH ELECTRONICS

Technical features of 19.5mm

05

Body made of Brass with black oxidised.

Input termination screw type suitable for pin type lug.

Available in different voltages (6V to 250V AC or DC). In-built Induced voltage protection (IVP) Can be provided on request. Unbreakable polycarbonate lens.

Technical features of 22.5mm, 25.5mm, 27.5mm, 30.5mm and 37.5mm dia cut out.



NOTE: I = Industrial type, B = Bright Series, E = Economy type.

Module body	Made of heat resistant, fire resistant, fire retardant, glass filled, non-hygroscopic DMC (Dough Mould Compound) material, capable to withstand 120°C temperature	Fire retardant polycarbonate material capable to withstand 100° C temperature.	Fire retardant ABS material capable to withstand 80° C temperature.
Lens	Made of unbreakable polycarbonate	Made of unbreakable polycarbonate	Made of Plastic
Adaptert	Chrome plated brass adapter for shining finish and greater reliability.	Made of polycarbonate collar adapter.	Made of ABS collar adapter.
Termination	Screw input terminal suitable for pin type or for k type lug with IP 20 protection (finger proof shouted terminal)	Screw input terminal suitable for pin type or for k type lug with IP 20 protection (finger proof).	Screw input terminal suitable suitable for pin type or for k type lug with IP 20 protection (finger proof)
LED's	High intensity industrial grade InP technology based LEDs for longer life and greater reliability.	High intensity industrial grade InP technology based LEDs for longer life and greater reliability.	High intensity industrial grade LEDs.
Light Intensity	Minimum light intensity 250-300 mcd at 220V AC.	Minimum light intensity 250-300mcd at 220V AC.	Minimum light intensity 100-120 mcd at 220V AC
Induced Voltage protection	Provided (normally 30V but can be provided as per customer requirement with a extra surcharge).	Provided (normally 30V but can be provided as per customer requirement with a extra surcharge).	Not Provided.

Fuse Protection	Crow bar fuse provided	Not provided	Not provided
Surge Protection	Provided in the form of MOV	Not provided	Not provided
Current	10-12 mA for AC operation and 3-7 mA for DC operation	15-18 mA for AC operation and 3-7 mA for DC operation	15-18 mA for AC operation and 3-7 mA for DC operation
Power Consumption	0.5-0.75 watt for AC 1.3-1.75 watt for DC	0.6-0.75 watt for AC 1.3-1.75 watt for DC	0.5-0.75 watt for AC 1.3-1.75 watt for DC
Ageing	To ensure component parameter adequately overrated module has been tested at 300V (for 220V AC module for 48 hours).	To ensure component parameter adequately overrated module has been tested at 270V (for 220V AC module for 24 hours).	To ensure component parameter adequately overrated module has been tested at 270V (for 220V AC module for 24 hours).
Die-Electric strength	Capable to withstand at 1.5kV for 1 minute between body and terminal	Capable to withstand at 1.5kV for 1 minute between body and terminal	Capable to withstand at 1kV for 1 minute between body and terminal
Insulation resistance	More than 100 M. Ohms when tested with a meggar at 500V DC	More than 100 M. Ohms when tested with a meggar at 500V DC	More than 100 M. Ohms when tested with Meggar at 500V DC
Life	In excess of 1.0 lac hours in continuous burning basis	In excess of 1.0 lac hours in continuous burning basis	In excess of 50 thousand in continuous burning basis

NOTE: Indicating lamps with universal input voltage (3V to 415V AC/DC) are also available in the 22.5mm & 25.5mm & 30.5mm cut-out sizes.

Legend plate can be provided for these indicators with extra surcharge.

Modules are available according to special application mentioned as below:-

Bi-colour/Tri Color LED Modules.

Flasher Modules.

Steady cum flasher Modules.

LED Module is available in different colours, such as Red, Green, Yellow, Orange, Milky White, Pure White, Amber, Violet, Blue.

How To Order - Required Ordering Data

The following basic details should be provided to enable us to supply (or quote) the correct type for customer requirement :

1. Panel cutout diameter in which the module is desired to be fitted
2. Input voltage rating
3. Current type (AC/DC)
4. Colour
5. Termination method Desired (screw terminals, solderable lugs, flying leads - as applicable, see Modules descriptions above)
6. IVP Rating
7. Preferred series on the indication if any

Combination of the various option are dependent on availability as describe earlier in this document.

e.g : PART NO.

ME - 22S - B - R - 220VAC

LOGO	CUTOUT	TERMINATION	SERIES	COLOUR	VOLTAGE	CURRENT TYPE
LUM	6 mm	S = SCREW TERMINAL	M = METAL	RED	3 V	AC
ME	8 mm	L = SOLDERABLE LUGS	P = PLASTIC	GREEN	6 V	DC
	9.5 mm	F = FLYING LEADS	MFH = METAL FLASH HEAD	YELLOW	12 V	AC/DC
	12.5 mm		I = INDUSTRIAL	AMBER	24 V	
	14.5 mm		E = ECONOMY	BLUE	48 V	
	16.5 mm		FL = FLASHING	ORANGE	63 V	
	19.5 mm		U = ULTRA	VIOLET	110 V (To 130 V)	
	22.5 mm		B = BRIGHT	MILKY WHITE	220 V (To 260 V)	
	25.5 mm			AMBER WHITE	415 V	
	27.5 mm			PURE WHITE		
	30.5 mm			BI COLOUR		
	37.5 mm			TRI COLOUR		

NOTE : Not all combination are valid. This is merely explanatory tool. See moduls description for possible option in each type.

MICROTECH ELECTRONICS LED BASED ILLUMINATED PUSH BUTTON SWITCHES AND ACTUATORS

08

- Long life (1,00,000 hours in continuous burning basis).
- Low power consumption (0.25 watt at 230V AC).
- Shock state reliability.
- Able to withstand in wide input voltage variation without any effect in life.
- One to one replacement with conventional incandescent push button.



'T' Type Push Button Actuator

This type of actuator is available in both illuminated and non-illuminated version. The illuminated type has an integral actuator and lamp body consisting of cluster LED units rating from 24V to 240V AC or DC Switching elements such as NO or NC can be attached with a provision of 4 elements on either side.

'S' Type Push Button Actuator

This type of actuator is available in both illuminated and Non-illuminated this type of actuator and lamp body consisting of cluster LED units rating from 24V to 240V AC or DC Switching elements such as NO or NC can be fixed on either side of the lamp holder.

'S' Type and 'T' Type Push Button comes in colour of Red/Green/Yellow/Blue /Amber White/ Pure White and also in Bi-Colour combination.

- The above Actuators are available in 22.5mm panel cutout dia (According to existing cut-out dia) .
- For 30.5mm panel cutout dia an additional adapter is available for fixing the above actuators.

Induced Voltage protection (IVP) can also be provided in the above actuators if required.

MICROTECH ELECTRONICS LED BASED LOW INTENSITY AVIATION OBSTRUCTION LIGHT Type - 'C'

09

LED based Eco-type low Intensity Aviation Obstruction Light is a fit and forget solution and provides maintenance free alternate solution of conventional 100W incandescent lamp or neon spiral Aviation Obstruction Light and can be appropriate for mobile tower LED based Eco type Low Intensity Aviation Obstruction Light offers following advantages:

- Long life (50,000 hours i.e. 11 years in 12 hours daily burning basis)
- Low power consumption (6-8 Watt at 230V AC).
- Shock and vibration proof.
- Solid state reliability.
- Light intensity as per the requirement of International Civil Aviation Organisation (ICAO).
- Able to withstand in input voltage fluctuation.

Electrical data:

- Power consumption: 6-8 Watt at 230V AC.
- Input voltage Variability: Capable to withstand in a voltage fluctuation of 15%
- No. of circuits: Two in series parallel.
- Di- electric strength: 1.5 kV.
- Insulation resistance: More than 10Meg Ohms at 500V DC.
- Ageing: Each unit tested at 300V AC (for 230V AC) for 24 hours.



Colour
Red

Part No.
ME - AOL - C - 9 - R

LED based 'C' type Aviation Obstruction Light

Physical data :

- Body construction : Rust proof cast Aluminium alloy / LM-6
- Lens: Acrylic
- Gasket: Endless neoprene.
- Terminals : Fitted in a weather proof box
- Ingress protection : IP 54
- Yellow epoxy Painted
- Weight: 1.5 kg. (Approx.)

Light data:

- No. of LEDs : 96 No's of InP technology (AllnGaP) based LEDs
- Light intensity : Integrated intensity more than 300cd. Radial light intensity more than 12cd . (as per specification of ICAO)

Make : MICROTECH ELECTRONICS

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LOW INTENSITY AVIATION OBSTRUCTION LIGHT TYPE - 'B' (COLOR RED)

10

LED based Low Intensity Aviation Obstruction Light is a fit and forget solution and provides maintenance free alternate solution of conventional 100W incandescent lamp or neon spiral Aviation Obstruction Light. LED based Low Intensity Aviation Obstruction Light offers following advantages:

- Long life (1, 00,000 hours i. e. 22 years in 12 hours daily burning basis.) Please note that life of the Low Intensity Aviation Obstruction Light calculated on the basis of continuous burning in steady condition.
- Low power consumption (10-15 Watt 230V AC).
- Shock and vibration proof.
- Solid state reliability.
- Light intensity as per the requirement of International Civil Aviation Organisation (ICAO).
- Able to withstand in input voltage fluctuation.

Electrical data:

- Power consumption: 10-15 Watt at 230V AC.
- Input voltage variability : 230V AC \pm 15%
- No. of circuits: Five in series parallel.
- Di-electric strength : 1.5 KV.
- Insulation resistance : Greater than 10 Meg Ohms at 500V DC.
- Surge protection : Provided.
- Ageing : Each tested at 275V AC (for 230V AC) for seven days.



Part No.

ME - AOL - H - 350 - R

Physical data:

- Body construction: Rust proof cast Aluminium alloy / LM-6.
- Lens: Clear hard glass dome.
- Gasket: Endless neoprene.
- Terminals: Fitted in a weather proof box.
- Ingress protection: IP 65.
- Yellow epoxy painted.
- Weight: 4kg. (Approx.)
- Cable entry : ET 19 mm
- Humidity : 95%.
- Realtive humidity : 0 - 80 %.
- Operating temperature range : -20°C to +55°C.
- PCB : LEDs are mounted on a glass epoxy flexible PCB.

Light data:

- No. of LEDs: 350 No's. of InP technology (AllnGaP) based LEDs.
- Light intensity: Radial light intensity more than 65cd. (AS per specification of ICAO).

Make : MICROTECH ELECTRONICS

MICROTECH ELECTRONICS

LOW INTENSITY AVIATION OBSTRUCTION LIGHT (COLOR RED)

11

LED based Low Intensity Aviation Obstruction Light is a fit and forget solution and provides maintenance free alternate solution of conventional 100W incandescent lamp or neon spiral Aviation Obstruction Light. LED based Low Intensity Aviation Obstruction Light offers following advantages:

- Long life (1, 00,000 hours i. e. 22 years in 12 hours daily burning basis.) Please note that life of the Low Intensity Aviation Obstruction Light calculated on the basis of continuous burning in steady condition.
- Low power consumption (10-15 Watt 230V AC).
- Shock and vibration proof.
- Solid state reliability.
- Light intensity as per the requirement of International Civil Aviation Organisation (ICAO).
- Able to withstand in input voltage fluctuation.

Electrical data:

- Power consumption: 10-15 Watt at 230V AC.
- Input voltage variability : 230V AC \pm 15%
- No. of circuits: Five in series parallel.
- Di-electric strength : 1.5 KV.
- Insulation resistance : Greater than 10 Meg Ohms at 500V DC.
- Surge protection : Provided.
- Ageing : Each tested at 275V AC (for 230V AC) for seven days.



Part No.

ME - AOL - L - 350 - R

Physical data:

- Body construction: Rust proof cast Aluminium alloy / LM-6.
- Lens: Clear hard glass dome.
- Gasket: Endless neoprene.
- Terminals: Fitted in a weather proof box.
- Ingress protection: IP 65.
- Yellow epoxy painted.
- Weight: 4kg. (Approx.)
- Cable entry : ET 19 mm
- Humidity : 95%.
- Realtive humidity : 0 - 80 %.
- Operating temperature range : -20°C to +55°C.
- PCB : LEDs are mounted on a glass epoxy flexible PCB.

Light data:

- No. of LEDs: 350 No's. of InP technology (AlInGaP) based LEDs.
- Light intensity: Radial light intensity more than 32cd. (AS per specification of ICAO)

Make : MICROTECH ELECTRONICS

LED based Low Intensity Aviation Obstruction Light is a fit and forget solution and provides maintenance free alternate solution of conventional 100W incandescent lamp or neon spiral Aviation Obstruction Light. LED based Low Intensity Aviation Obstruction Light offers following advantages:

- Long life (1, 00,000 hours i. e. 22 years in 12 hours daily burning basis.) Please note that life of the Low Intensity Aviation Obstruction Light calculated on the basis of continuous burning in steady condition.
- Low power consumption (8 - 10 Watt 230V AC).
- Shock and vibration proof.
- Solid state reliability.
- Light intensity as per the requirement of International Civil Aviation Organisation (ICAO).
- Able to withstand in input voltage fluctuation.

Electrical data:

- Power consumption: 8 -10 Watt at 230V AC.
- Input voltage variability : 230V AC \pm 15%
- No. of circuits: Five in series parallel.
- Di-electric strength : 1.5 KV.
- Insulation resistance : Greater than 10 Meg Ohms at 500V DC.
- Surge protection : Provided.
- Ageing : Each tested at 275V AC (for 230V AC) for seven days.



Part No.

ME - AOL - ECO - R

Physical data:

- Body construction: Rust proof cast Aluminium alloy / LM-6
- Lens: Clear hard glass dome.
- Gasket: Endless neoprene.
- Terminals: Fitted in a weather proof box.
- Ingress protection: IP 65.
- Yellow epoxy painted.
- Weight: 4kg. (Approx.)
- Cable entry : ET 19 mm
- Humidity : 95%.
- Realtive humidity : 0 - 80 %.
- Operating temperature range : -20°C to +55°C.
- PCB : LEDs are mounted on a glass epoxy flexible PCB.

Light data:

- No. of LEDs: 240 No's. of InP technology (AllnGaP) based LEDs.
- Light intensity: Radial light intensity (AS per specification of ICAO).

MICROTECH ELECTRONICS

MEDIUM INTENSITY AVIATION OBSTRUCTION LIGHT TYPE - 'B' (COLOR RED)

14

LED based Medium Intensity Aviation Obstruction Light is a fit and forget solution and provides maintenance free alternate solution of conventional 500W incandescent lamps can be appropriate for structure's height more than 45 meters to 150 meters (as per the specification of International Civil Aviation Organisation). LED based Medium Intensity Aviation Obstruction Light offers following advantages:

- Long life (1,00,000 hours i. e. 22 years in 12 hours daily burning basis) Please note that life of the Medium Intensity Aviation Obstruction Light calculated on the basis of continuous burning in flashing condition (on and off).
- Low power consumption (60-70 Watt at 230V AC).
- Shock and vibration proof.
- Solid state reliability.
- Light intensity as per requirement of international Civil Aviation Organization (ICAO).
- Able to withstand in input voltage fluctuation

Electrical data:

- Power consumption: 60-70 Watt at 230V AC.
- Input voltage variability: 230V AC \pm 15%
- No. of circuits: Fifteen (15nos.) in series parallel.
- Di-electric strength: 1.5kV.
- Insulation resistance: Greater than 10 Meg Ohms at 500V DC.
- Surge protection: Provided
- Ageing: Each unit tested at 275V AC (for 230V AC) for seven days.



Part No.

ME - AOL - M - 16 - R
ME - AOL - M - 20 - R

Physical data:

- Body construction: Rust proof cast Aluminium alloy / LM-6.
- Lens: Clear hard glass.
- Gasket: Endless neoprene.
- Terminals: Fitted in a weather proof box.
- Ingress protection : IP 65
- Yellow epoxy painted.
- Weight: 6 kg. (Approx.)
- Cable entry : ET 19 mm
- Humidity : 95%.
- Realtive humidity : 0 - 80 %.
- Operating temperature range : -20°C to +55°C.
- PCB : LEDs are mounted on a glass epoxy flexible PCB.

Light data:

- No. of LEDs : 1200 No's of InP technology (AllnGaP) based LEDs.
- Light intensity : Radial light intensity more than 4000cd (AS per specification of ICAO).

Make : MICROTECH ELECTRONICS

MICROTECH ELECTRONICS

MEDIUM INTENSITY AVIATION OBSTRUCTION LIGHT (COLOR RED)

15

LED based Medium Intensity Aviation Obstruction Light is a fit and forget solution and provides maintenance free alternate solution of conventional 500W incandescent lamps can be appropriate for structure's height more than 45 meters to 150 meters (as per the specification of International Civil Aviation Organisation). LED based Medium Intensity Aviation Obstruction Light offers following advantages:

- Long life (1,00,000 hours i. e. 22 years in 12 hours daily burning basis) Please note that life of the Medium Intensity Aviation Obstruction Light calculated on the basis of continuous burning in flashing condition (on and off).
- Low power consumption (50 - 60 Watt at 230V AC).
- Shock and vibration proof.
- Solid state reliability.
- Light intensity as per requirement of international Civil Aviation Organization (ICAO).
- Able to withstand in input voltage fluctuation

Electrical data:

- Power consumption: 50-60 Watt at 230V AC.
- Input voltage variability: 230V AC \pm 15%
- No. of circuits: Fifteen (15nos.) in series parallel.
- Di-electric strength: 1.5kV.
- Insulation resistance: Greater than 10 Meg Ohms at 500V DC.
- Surge protection: Provided
- Ageing: Each unit tested at 275V AC (for 230V AC) for seven days.



Part No.
ME - AOL - M - 9 - R

Physical data:

- Body construction: Rust proof cast Aluminium alloy / LM-6.
- Lens: Clear hard glass.
- Gasket: Endless neoprene.
- Terminals: Fitted in a weather proof box.
- Ingress protection : IP 65
- Yellow epoxy painted.
- Weight: 6 kg. (Approx.)
- Cable entry : ET 19 mm
- Humidity : 95%.
- Realtive humidity : 0 - 80 %.
- Operating temperature range : -20°C to +55°C.
- PCB : LEDs are mounted on a glass epoxy flexible PCB.

Light data:

- No. of LEDs : 900 No's of InP technology (AlInGaP) based LEDs.
- Light intensity : Radial light intensity more than 2000cd (AS per specification of ICAO).

Make : MICROTECH ELECTRONICS

MICROTECH ELECTRONICS

MEDIUM INTENSITY AVIATION OBSTRUCTION LIGHT TYPE - (COLOR WHITE)

16

LED based Medium Intensity Aviation Obstruction Light is a fit and forget solution and provides maintenance free alternate solution of conventional 500W incandescent lamps can be appropriate for structure's height more than 45 meters to 150 meters (as per the specification of International Civil Aviation Organisation). LED based Medium Intensity Aviation Obstruction Light offers following advantages:

- Long life (1,00,000 hours i. e. 22 years in 12 hours daily burning basis) Please note that life of the Medium Intensity Aviation Obstruction Light calculated on the basis of continuous burning in flashing condition (on and off).
- Low power consumption (60-70 Watt at 230V AC).
- Shock and vibration proof.
- Solid state reliability.
- Light intensity as per requirement of international Civil Aviation Organization (ICAO).
- Able to withstand in input voltage fluctuation

Electrical data:

- Power consumption: 60-70 Watt at 230V AC.
- Input voltage variability: 230V AC \pm 15%
- No. of circuits: Fifteen (15nos.) in series parallel.
- Di-electric strength: 1.5kV.
- Insulation resistance: Greater than 10 Meg Ohms at 500V DC.
- Surge protection: Provided
- Ageing: Each unit tested at 275V AC (for 230V AC) for seven days.



Part No.

ME - AOL - M - 16 - W

Physical data:

- Body construction: Rust proof cast Aluminium alloy / LM-6.
- Lens: Clear hard glass.
- Gasket: Endless neoprene.
- Terminals: Fitted in a weather proof box.
- Ingress protection : IP 65
- Yellow epoxy painted.
- Weight: 6 kg. (Approx.)
- Cable entry : ET 19 mm
- Humidity : 95%.
- Relative humidity : 0 - 80 %.
- Operating temperature range : -20°C to +55°C.
- PCB : LEDs are mounted on a glass epoxy flexible PCB.

Light data:

- No. of LEDs : 1200 No's of InP technology (AlInGaP) based LEDs.
- Light intensity : Radial light intensity more than 4000cd (AS per specification of ICAO).

Make : MICROTECH ELECTRONICS

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MEDIUM INTENSITY AVIATION OBSTRUCTION LIGHT TYPE - 'B' (COLOR RED)

17

LED based Medium Intensity Aviation Obstruction Light is a fit and forget solution and provides maintenance free alternate solution of conventional 500W incandescent lamps can be appropriate for structure's height more than 45 meters to 150 meters (as per the specification of International Civil Aviation Organisation). LED based Medium Intensity Aviation Obstruction Light offers following advantages:

- Long life (1,00,000 hours i. e. 22 years in 12 hours daily burning basis) Please note that life of the Medium Intensity Aviation Obstruction Light calculated on the basis of continuous burning in flashing condition (on and off).
- Low power consumption (60-70 Watt at 230V AC).
- Shock and vibration proof.
- Solid state reliability.
- Light intensity as per requirement of international Civil Aviation Organization (ICAO).
- Able to withstand in input voltage fluctuation

Electrical data:

- Power consumption: 60-70 Watt at 230V AC.
- Input voltage variability: 230V AC \pm 15%
- No. of circuits: Fifteen (15nos.) in series parallel.
- Di-electric strength: 1.5kV.
- Insulation resistance: Greater than 10 Meg Ohms at 500V DC.
- Surge protection: Provided
- Ageing: Each unit tested at 275V AC (for 230V AC) for seven days.



Part No.

ME - AOL - M - 12 - R

Physical data:

- Body construction: Rust proof cast Aluminium alloy / LM-6.
- Lens: Clear hard glass.
- Gasket: Endless neoprene.
- Terminals: Fitted in a weather proof box.
- Ingress protection : IP 65
- Yellow epoxy painted.
- Weight: 6 kg. (Approx.)
- Cable entry : ET 19 mm
- Humidity : 95%.
- Realtive humidity : 0 - 80 %.
- Operating temperature range : -20°C to +55°C.
- PCB : LEDs are mounted on a glass epoxy flexible PCB.

Light data:

- No. of LEDs : 1200 No's of InP technology (AlInGaP) based LEDs.
- Light intensity : Radial light intensity more than 4000cd (AS per specification of ICAO).

Make : MICROTECH ELECTRONICS

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MEDIUM INTENSITY AVIATION OBSTRUCTION LIGHT

18

LED based Medium Intensity Aviation Obstruction Light is a fit and forget solution and provides maintenance free alternate solution of conventional 500W incandescent lamps can be appropriate for structure's height more than 45 meters to 150 meters (as per the specification of International Civil Aviation Organisation). LED based Medium Intensity Aviation Obstruction Light offers following advantages:

- Long life (1, 00,000 hours i.e. 22 years in 12 hours daily burning basis along with Solid state flasher) No requirement of replacement once fitted.
- Low Power consumption (80-85W at 230V AC).
- Shock and vibration proof.
- Solid state reliability.
- Light intensity as per requirement of international Civil Aviation Organization (ICAO).

Electrical data:

- Power consumption: 80-85 Watt at 230V AC.
- Input voltage Variability: Capable to withstand in a voltage fluctuation of 15%.
- No. of circuits: Twenty (approx) in series parallel.
- Forward currents: 1000-1200 Ma.
- Insulation resistance: Greater than 10 Meg Ohms at 500V DC.
- Surge protection: Provided
- Di-electric strength: 1.5 Kv.
- Ageing: each unit continuously tested for seven days at 300V AC for 230V AC.



Part No.

ME - AOL - M - 21 - R

Physical data:

- Body construction: Rust proof cast Aluminium alloy / LM-6.
- Lens: Acrylic
- Gasket: Endless Gasket
- Terminals: Fitted in a weatherproof box
- Ingress protection : IP 65
- Yellow epoxy painted.
- Weight: 25 kg. (Approx.)
- Cable entry : ET 19 mm
- Humidity : 95%.
- Realtive humidity : 0 - 80 %.
- Operating temperature range : -20°C to +55°C.

Light data:

- No. of LEDs : 1800 No's. (Approx). InP technology (AlInGaP) based
- Light intensity : Radial Intensity in each & every direction over 360 degree around 4000 CD (As per specification of ICAO).

Make : MICROTECH ELECTRONICS

MICROTECH ELECTRONICS

HIGH INTENSITY AVIATION OBSTRUCTION LIGHT

19

Intensity 200,000/20,000/2000 Candela

Omni-directional Aviation Obstruction Warning Light flashing white light designed to meet the initial intensity requirements of the International Civil Aviation Organisation (ICAO) Annexure-14

High Intensity Type A

LED-based High Intensity Type A Aviation Obstruction Light conforms to the International Civil Aviation Organisation (ICAO) requirements for luminous intensity of 200,000 candela \pm 25% in flashing white mode of 40-60 flashes per minute.

Automatic Switching of light levels (Day/Twilight/Night modes) is provided by means of control cabling from the Switching Controller at the ground level which adjusts the light output as follows:

- 200,000 candela (at background light level of above 500cd/m², i.e., daylight)
- 20,000 candela (at background light level of 50-500cd/m², i.e., twilight)
- 2,000 candela (at background light level of below 50cd/m², i.e., night-time)

The body and base are made with Aluminium-silicon alloy (which has been preferred by chemical industries, particularly for resistance to corrosion). The top cover acts as a heat sink to enhance LED life and reliability. The entire unit is sealed to IP65 with neoprene gasket.

Feature & Specification

Low voltage operation of LEDs

Low power consumption

Long life (100000 hours burning approximately)

Environmentally friendly LED operation

Just Fit & Forget : No replacement, No maintenance

Input Voltage : 220VAC \pm 15%

Radial intensity in horizontal plane Flashing White (flashing at 40-60 flashes per minute) with automatic adjustment of Day /Twilight/Night modes as follows : a) 200,000 candela (at background light level of above 500cd/m², i.e., daylight) b) 20,000 candela (at background light level of 50- 500cd/m², i.e., twilight) c) 2,000 candela (at background light level of below 50cd/m², i.e., night- ' time)

- Body construction : Cast Aluminium alloy
- Lens : Clear Hard Glass
- Gasket : Endless neoprene
- Protection : IP65
- Aviation Yellow Epoxy Painted
- Spike / Surge protection provided
- Earthing terminals Provided
 - Terminals WAGO type screw-less terminal with gland
- Di-electric strength 1.5 kV except low voltage parts
- Insulation resistance 100 Meg Ohms at 500V DC except low voltage parts
- Fog, Rain Resistant
- Humidity : 90%
- Does not create Electromagnetic Interference
- High Intensity Type A Aviation Obstruction Light conforms to the International Civil Aviation Organisation (ICAO) requirements for luminous intensity of 200,000 candela \pm 25% in flashing white mode of 40-60 flashes per minute.



Part No.

ME - AOL - HI - 102

Make : **MICROTECH ELECTRONICS**

MICROTECH ELECTRONICS AVIATION OBSTRUCTION LIGHT

20

1. HIGH INTENSITY AVIATION OBSTRUCTION LIGHT TYPE - 'A'

MODEL : ME AOL HI 102

EMITTED COLOUR : WHITE

LUMINOUS INTENSITY 200000 CANDELA \pm 25% AT DAY TIME
200000 CANDELA \pm 25% AT TWILIGHT TIME
2000 CANDELA \pm 25% AT NIGHT TIME



2. MEDIUM INTENSITY AVIATION OBSTRUCTION LIGHT TYPE - 'B'



MODEL : ME AOL M 20 R
ME AOL M 16 R

EMITTED COLOUR : RED

NO. OF LED : 1200 WATTAGE : 60 - 70 W

LUMINOUS INTENSITY 4000 CANDELA AT NIGHT TIME

3. MEDIUM INTENSITY AVIATION OBSTRUCTION LIGHT COLOUR WHITE

MODEL : ME AOL M 16 W

EMITTED COLOUR : WHITE

NO. OF LED : 1200 WATTAGE : 60 - 70 W

LUMINOUS INTENSITY 4000 CANDELA AT NIGHT TIME



4. MEDIUM INTENSITY AVIATION OBSTRUCTION LIGHT



MODEL : ME AOL M 12 R

EMITTED COLOUR : RED

NO. OF LED : 1200 WATTAGE : 60 - 70 W

LUMINOUS INTENSITY 4000 CANDELA AT NIGHT TIME

5. MEDIUM INTENSITY AVIATION OBSTRUCTION LIGHT

MODEL : ME AOL M 9 R

EMITTED COLOUR : RED

NO. OF LED : 900 WATTAGE : 50 - 60 W

LUMINOUS INTENSITY 2500 CANDELA AT NIGHT TIME



6. LOW INTENSITY AVIATION OBSTRUCTION LIGHT TYPE - 'B'

MODEL : ME AOL H 350 R
EMITTED COLOUR : RED
NO. OF LED 350 WATTAGE : 10 - 15 W
LUMINOUS INTENSITY 32 CANDELA AT NIGHT TIME



7. LOW INTENSITY AVIATION OBSTRUCTION LIGHT



MODEL : ME AOL L 350 R
EMITTED COLOUR : RED
NO. OF LED 350 WATTAGE : 10 - 15 W
LUMINOUS INTENSITY 32 CANDELA AT NIGHT TIME

8. LOW INTENSITY AVIATION OBSTRUCTION LIGHT - ECO TYPE

MODEL : ME AOL ECO R
EMITTED COLOUR : RED
NO. OF LED : 240 WATTAGE : 8 - 10 W



9. LOW INTENSITY AVIATION OBSTRUCTION LIGHT TYPE - 'C'



MODEL : ME AOL C 9 R
EMITTED COLOUR : RED
NO. OF LED : 96 WATTAGE : 6 - 8 W
LUMINOUS INTENSITY 12 CANDELA AT NIGHT TIME

MICROTECH ELECTRONICS LED BASED WARNING LIGHT

22

LED based warning light indicators is an ideal replacement of rotating type warning light indicators and offers numerous advantages such as:

- Long life (1, 00, 00 hours in continuous burning basis).
- Low power consumption (8 -10 Watt at 220V AC).
- Shock and vibration proof characteristics.
- Solid state technology offers reliable and maintenance free features.

Electrical data:

- Power consumption: 8 -10 Watt (approx.) at 220V AC.
- Input voltage Variability: Capable to withstand in a voltage fluctuation of 15%.
- Di-electric strength: 1.5 KV when tested between body and terminals for one minute.
- Insulation resistance: More than 10 Meg Ohms when tested at 500V DC.
- Surge protection: Provided
- Ageing: Each unit tested at 300V AC (for 230V AC) for 24 hours.

Physical data:

- Body Construction: Corrosion free Aluminium alloy with yellow epoxy paint.
- Lens: Acrylic.
- Gasket: Endless neoprene.

Light data:

- No. of LEDs: 240 No's. / 120 no's Of InP technology (AlInGaP) based LEDs.



LED based warning light indicators are available in different colours (such as Red, Green, Yellow, Blue etc.) and operating voltages (12V to 220V AC or DC) as per the customers requirement.

Solid state flasher and hooter/Buzzer can be provided according to the requirement.

Part No. ME - WL - 24 R
ME - WL - 12 R

Make : MICROTECH ELECTRONICS

MICROTECH ELECTRONICS

CRANE BUS BAR INDICATION

23

It is mandatory to indicate energized bus bar status in overhead cranes, which is normally done by conventional 100W filament bulbs in industry. Conventional filament bulb fails frequently resulting in incorrect indication to the operator. Microtech Electronics offers LED based bus bar indicators with the following advantages:

- Long life (1,00,000 hours i.e. 11 years continuous burning basis).thus requires no further replacement once fitted.
- Low power consumption (5 Watt at 230V AC), saves energy.
- Shock and vibration proof.
- Solid state reliability.
- Short payback period.
- Can withstand 15% input voltage variation which normally requires during on and off of crane motors.

Apart from the above our crane bus bar indicator gives all-round visibility as the LEDs are mounted in a module in circular configuration. Three such modules are mounted vertically on a body. These modules can be given in different colours (RYB or RYG) for phase indication,

Other details are given below:

- Body : Body made of M.S, siemens grey color
- Lens : Fire retardant polycarbonate/Acrylic/crystal.
- Gasket : Endless neoprene.
- Terminals : Four input terminals provided on the base of the unit (one neutral and other three for phase lines).
- LEDs : High intensity InP technology based LEDs (96 Nos LED in each module).
- Ageing : All the modules are aged at 300V (for 230V AC) and 440V for (415V AC) for 72 hours to ensure reliability .
- Power consumption : Approx. 5 Watt at 230V AC.
- PIV : Protected against reverse voltage upto 1KV.
- Insulation resistance : More than 10 Meg Ohms at 500V DC.
- Di-electric strength : 1.5 KV.



Part No.
ME - CB - 3R
ME - CB - RYB
ME - CB - RYG

Make : MICROTECH ELECTRONICS

MICROTECH ELECTRONICS LED BASED STACK LIGHT

24

LED based stack light is a fit and forget solution and provides maintenance free alternate solution of conventional incandescent. LED based stack light offers following advantages:

- Long life (1, 00,000 hours i.e. 22 years in hour's daily burning basis). No requirement of replacement once fitted.
- Low power consumption.
- Shock and vibration proof.
- Solid state reliability.

Electrical data:

- Power consumption: 1 Watt (approx.) at 230V AC.
- Input voltage variability: Capable to withstand in a voltage fluctuation of 15%.
- Di-electric strength: 1.5 kV.
- Insulation resistance: more than 10Meg Ohms at 500V DC.
- Ageing : Each unit tested at 300V AC (for 230 AC)



Part No.

ME - SL - IT - M/P - 9 X (mention colour)
ME - SL - 2T - M/P - 9 X/X (mention colour)
ME - SL - 3T - M/P - 9 X/X/X (mention colour)
M - Metal body P - Plastic Body
IT - Signal Tier, 2T - Two Tier, 3T - Three Tier

Physical data:

- Body: Plated metal or non-conductive Construction.
- Lens: Polycarbonate / Acrylic.
- Gasket: Endless neoprene.



Light data:

- No. of LEDs: 96 No's. InP technology (AlInGaP) based LEDs. LED based stack light are available in single and multiple modules in different Colours and voltages. Specify voltage and colour during placement or order.



MICROTECH ELECTRONICS LED BASED TRAFFIC LIGHT SIGNAL MODULE

25

Features:

- Major Energy Savings.
- Solid-state, high shock / vibration resistant.
- Conforms to industry standards.
- Lamps can be retrofitted into existing traffic housings.
- Available in Red, Yellow, Green (with arrow sign) , Red (with man standing sign), Green (with man walking sign).
- Very low power consumption, greater intensity.
- 12V DC for solar power option. Also available at 24V, 110V AC, 240V AC.
- Available in 300mm (12") and 200mm (8") diameter.

Application:

Traffic signal lights. Traffic warning lights Railroad crossing Road closure signs

Technical Specification of 300mm (12") & 200mm (8") traffic Signal module:

Part No.	LUM-300-R	LUM-200-R	LUM-300-Y	LUM-200-Y	LUM-300-G	LUM-200-G
Signal Colour	Red	Red	Yellow	Yellow	Green	Green
LED Material	AllnGaP	AllnGaP	AllnGaP	AllnGaP	InGan	InGan
Lens Material	Acrylic	Polycarbonate	Acrylic	Polycarbonate	Acrylic	Polycarbonate
Intensity	>750cd	>500cd	>750cd	>500cd	>750cd	>500cd
Power consumption	12-15W	10-12W	12-15W	10-12W	12-15W	10-12W
IP rating without housing	IP54	IP54	IP54	IP54	IP54	IP54
Operating Temperature	-25°C - 70° C	-25° C - 70° C	-25° C - 70° C	-25° C - 70° C	-25° C - 70° C	-25° C - 70° C
Signal diameter	300mm	200mm	300mm	200mm	300mm	200mm
Weight (module only)	1kg.	1kg.	1kg.	1kg.	1kg.	1kg.
No. of LED used	506No's.	267No's.	506No's.	267No's.	506No's.	267No's.



Part No.

ME - TLM - 8 - B - R

ME - TLM - 8 - S - R

ME - TLM - 12 - B - R

ME - TLM - 12 - S - R

ME - TLM - 8 - B - Y

ME - TLM - 8 - S - Y

ME - TLM - 12 - B - Y

ME - TLM - 12 - S - Y

ME - TLM - 8 - B - G

ME - TLM - 8 - S - G

ME - TLM - 12 - B - G

ME - TLM - 12 - S - G

B - FOR BRIGHT SERIES

S - FOR STANDARD SERIES

Make : MICROTECH ELECTRONICS

MICROTECH ELECTRONICS LED BASED PYGMY LIGHT

26

Long life (1, 00,000 hours i. e. 22 years in 12 hours daily burning basis)

No requirement of replacement once fitted.

Low power consumption (1 W at 230V AC).

Shock and vibration proof.

Solid state reliability.



Electrical data:

- Power consumption: 1 Watt max at 230V AC.
- Input voltage variability: Capable to withstand in a voltage fluctuation of 15%.
- Di-electric strength: 1.5 kV.
- Insulation resistance: More than 10 Meg Ohms at 500V DC.
- Ageing: Each unit continuously tested for seven days at 300V AC for 230V AC.

Physical data:

Body construction: Aluminium alloy.

Lens: PMMA, P.C or PMMI

Terminal: B 22 Cap

Ingress protection: IP 54.

Housing Colour White

Weight: 70 gm. (approx.)



Part No. ME-PIGMY-B22-W/R/G/B/A

Light data:

No. of LEDs: 20 No's. (Approx.) InP technology (AlInGaP) based LEDs.

Illumination in each & every direction over 180 degree.

Emited Colour - Red

MICROTECH ELECTRONICS LED BASED POWER DISTRIBUTION SEMAPHORE INDICATOR

27

Semaphore Indicators are used on control and Instrumentation Panel to indicate open or close position of Isolator, Earth switch, Breaker etc.

Terminals: 03 Terminals provided – one neutral and other two for Phase lines.

Cut-out dia : 29.5mm

Bezel dia: 38.0mm

Length: 60.0mm (without stud)

Voltage: 24V / 110V / 220V DC



Semaphore Indicator for 29.5mm dia Cut-out
Part No. : ME-SPI-10

Terminals: 03 Terminals provided – one neutral and other two for Phase lines.

Cut-out dia: 37.5mm

Bezel dia: 45.0 mm

Length: 62.0mm (without stud)

Voltage: 24V / 110V / 220V DC



Semaphore Indicator for 37.5mm dia Cut-out
Part No. : ME-SPI-15

Terminals: 03 Terminals provided – one neutral and other two for Phase lines.

Cut-out dia : 62.5mm

Bezel dia: 71.0 mm

Length: 65.0mm (without stud)

Voltage: 24V / 110V / 220V DC



Semaphore Indicator for 62.5mm dia Cut-out
Part No. : ME-SPI-25

Termination details for above
semaphore indicators.



Make : MICROTECH ELECTRONICS

MICROTECH ELECTRONICS

CHARACTERISTICS OF FLASHER SYNCHRONIZATION AND MONITORING CONTROLLER FOR AVIATION OBSTRUCTION LIGHT

28



Model : ME – FSMC - AOL

1. Controller controls all the lights. Controlling all the lights to flash together.
2. There is main power supply Switch.
3. MCB is provided.
4. Current Sensor and indicator for each light by means of an LED based panel indicator.
5. All the lights are connected to a common solid state flasher unit with Adjustable knob to adjust the flashing rate.
6. There is a stand by flasher unit and change over switch is provided.
7. Solid state photo electric circuit is provided.
8. A switch from photo electric cell to direct mode will be provided.
9. Incoming supply 230V AC.
10. Indoor type wall mounted and, outdoor type floor mounted.
11. Configuration of FSMC will vary as per number of AOLs

MICROTECH ELECTRONICS

HIGH INTENSITY AVIATION OBSTRUCTION LIGHT (TWIN TYPE)

29

Intensity 200,000/20,000/2000 Candela

Omni-directional Aviation Obstruction Warning Light flashing white light designed to meet the initial intensity requirements of the International Civil Aviation Organisation (ICAO) Annexure-14

High Intensity Type A

LED-based High Intensity Type A Aviation Obstruction Light conforms to the International Civil Aviation Organisation (ICAO) requirements for luminous intensity of 200,000 candela \pm 25% in flashing white mode of 40-60 flashes per minute.

Automatic Switching of light levels (Day/Twilight/Night modes) is provided by means of control cabling from the Switching Controller at the ground level which adjusts the light output as follows:

- 200,000 candela (at background light level of above 500cd/m², i.e., daylight)
- 20,000 candela (at background light level of 50-500cd/m², i.e., twilight)
- 2,000 candela (at background light level of below 50cd/m², i.e., night-time)

The body and base are made with Aluminium-silicon alloy (which has been preferred by chemical industries, particularly for resistance to corrosion). The top cover acts as a heat sink to enhance LED life and reliability. The entire unit is sealed to IP65 with neoprene gasket.

Feature & Specification

Low voltage operation of LEDs

Low power consumption

Long life (100000 hours burning approximately)

Environmentally friendly LED operation

Just Fit & Forget : No replacement, No maintenance

Input Voltage : 220VAC \pm 15%

Radial intensity in horizontal plane Flashing White (flashing at 40-60 flashes per minute) with automatic adjustment of Day /Twilight/Night modes as follows : a) 200,000 candela (at background light level of above 500cd/m², i.e., daylight) b) 20,000 candela (at background light level of 50- 500cd/m², i.e., twilight) c) 2,000 candela (at background light level of below 50cd/m², i.e., night- ' time)

- Body construction : Cast Aluminium alloy
- Lens : Clear Hard Glass
- Gasket : Endless neoprene
- Protection : IP65
- Aviation Yellow Epoxy Painted
- Spike / Surge protection provided
- Earthing terminals Provided
- Terminals WAGO type screw-less terminal with gland
- Di-electric strength 1.5 kV except low voltage parts
- Insulation resistance 100 Meg Ohms at 500V DC except low voltage parts
- Fog, Rain Resistant
- Humidity : 90%
- Does not create Electromagnetic Interference
- High Intensity Type A Aviation Obstruction Light conforms to the International Civil Aviation Organisation (ICAO) requirements for luminous intensity of 200,000 candela \pm 25% in flashing white mode of 40-60 flashes per minute.



Part No.

ME - AOL - HI - 102 - T

Make : **MICROTECH ELECTRONICS**

Twin LED HI AOL will glow always in flashing mode. One HI AOL will glow at a time, i.e. if main LED HI AOL fail then the auxiliary HI AOL will start glow automatically.

MICROTECH ELECTRONICS ALL TWIN LIGHTS

30

MICROTECH ELECTRONICS MEDIUM INTENSITY AVIATION OBSTRUCTION LIGHT



MICROTECH ELECTRONICS LOW INTENSITY AVIATION OBSTRUCTION LIGHT

MICROTECH ELECTRONICS LOW INTENSITY AVIATION OBSTRUCTION LIGHT (ECO TYPE)



Make : MICROTECH ELECTRONICS



MICROTECH ELECTRONICS

Apanjan Apartment, 18/A, Flat - C, 3rd Floor,
Nityananda Nagar, Andul Road, Howrah - 711109.
Ph. 9874759555 / 9874993200

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