

## Railways Specific Lights from Sigma

Ever since LED lights have come on the scene, the Railways have been on the look out for high intensity long range LED lights to economically illuminate their Marshalling Yards & working places meeting the laid down requirements. Sigma also offers job specific lights for various services at Railways.

### 1. Yard Lighting :-

#### Problem identification :

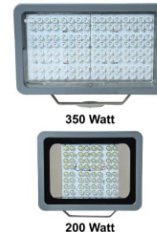
To illuminate marshalling yards, lights have to be fitted on Lighting Mast towers of suitable height in such a way that wide area from close to the tower be uniformly illuminated because most of the towers are installed close to the rail tracks. Rail tracks are in fact the ones which require good illumination,

Lighting should be such that engine drivers can shuttle around without facing glare and resultant obstructions.

#### Sigma recommends :

Sigma have developed weather, dust & vermin proof, high intensity 350 watt and 200 watt long Range flood lights for use at High Masts installed at Marshalling Yards.

Sigma 350 watt long Range LED light have a range of 750 meters. It produces 10 lux illumination at a distance of 250 meters when measured along the axis.



Sigma can offer these lights with vibration isolators to prevent damage to luminaires from vibrations associated with the running of trains.

These lights can economically illuminate Railways Marshalling yards and working places.

### 2. Hydrant Lights :-

#### Problem identification :

Hydrants are installed between two rail tracks which are normally illuminated from the lights of adjoining platforms. When both the rail tracks are occupied with trains the light from platforms is blocked. The workmen who supply water to trains find it difficult to discharge their duties effectively in the darkness.

Due to heavy vibrations associated with the running of the trains the lamps fitted with the lights in use at present fuse very frequently.

## TELESCOPIC TOWERS • ENERGY SAVING LED & HID LUMINAIRES & FIXTURES

with highly polished Stainless steel reflectors having sustained lasting performance for Mining, Industrial, & Commercial applications, Telescopic & Tilting Towers both Ground & Mobile Trolley / Skid mounted.  
REGD. OFFICE : P - 27 SAGAR MANNA ROAD, KOLKATA 700 060

**Sigma recommends :**

Sigma offer Long range, high intensity, vibration proof 200 watt / 350 watt LED flood lights for illuminating hydrants when fitted on foot over bridges on both sides of the platform.



### 3. Under Carriage Examination :-

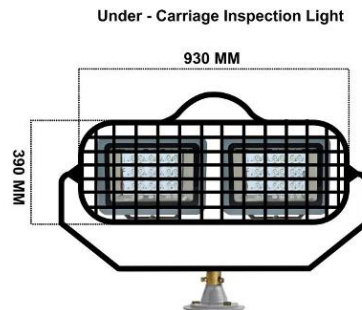
**Problem identification :**

When the train steams into the platform its under carriage is examined while it is in motion. Very high intensity lights are required for doing the job effectively.

At present at some places 2 no 40 watt fluorescent tube lights in an enclosure are installed close to the rail track at a place where the platform ends. These lights do not produce sufficient directional light for effectively doing the under carriage examination. At some places still portable hand lamps are used which not only get easily damaged but are not effective also. Some places standard HPSV lamp flood lights are used

**Sigma recommends :**

Sigma recommends use of 2x100 watt high intensity long range directional LED lights housed in an enclosure having net jali in front. These lights can be permanently fitted close to rail tracks out side the platforms, The construction of these lights is portable. These lights have both vertical and horizontal movement. Modification for improvement of design or performance can be incorporated as per recommendation of the users.



### 4. Cabin Lights :-

**Problem identification :**

The persons working at the cabins have a very tough duty to perform because a slight mistake on their part can result in in accidents. Very high intensity long range lights are required by them for

- a. Last number recording.
- b. To see the intersection point of lines close by to ensure that the train A have fully crossed over the point and that train can be allowed to pass
- c. The name of the cabin is not illuminated properly due to which passengers cannot read the name of the approaching station.

**TELESCOPIC TOWERS ● ENERGY SAVING LED & HID LUMINAIRES & FIXTURES**

with highly polished Stainless steel reflectors having sustained lasting performance for Mining, Industrial, & Commercial applications, Telescopic & Tilting Towers both Ground & Mobile Trolley / Skid mounted.  
REGD. OFFICE : P - 27 SAGAR MANNA ROAD, KOLKATA 700 060

**Sigma recommends :**

- a. 150 watt high intensity long range flood light for illuminating the lines intersecting area.
- b. Low voltage 60 /100 watt high intensity long range portable / swivel type LED flood light operable from 24 volt supply for last wagon number checking. This can also be used for checking the intersecting lines
- c. 20 watt water tight high intensity bulk head LED light for illuminating the name of the cabins.



230 Volt 150 Watt



24 Volt, 100 Watt



24 Volt, 60 Watt



230 Volt, 20 Watt

### 5. Washing Lines :-

**Problem identifications :**

Illumination of washing lines is the greatest challenge because of the safety requirements involved. Washing lines at major Railway stations are classified into two categories,

- a. Open area washing Line
- b. Underground washing lines

The luminaries required at washing lines should be absolutely watertight lest the water enters into the fitting and cause disaster. To properly wash the under carriage of the train low voltage (24 volt) water tight luminaries should be used.

For underground washing lines only low voltage watertight lights should be used.

**Sigma recommendations :**

150-watt 200 watt/350 watt high intensity, long range LED flood lights for open Area washing Lines. Wattage selection will depend on the length of the rack. 24 volt 40/60 watt high intensity long range Low voltage lights for under carriage should be used.



24 Volt 40 Watt 24 Volt 60 Watt



24 Volt 20 Watt

Sigma offer high intensity low voltage long range watertight LED lights for underground Washing lines. These are 20 watt /40 watt /60 watt /100 watt these are operable from 24 volt / 48 volt supply.



230 Volt 350 Watt



230 Volt 200 Watt



230 Volt 150 Watt

### TELESCOPIC TOWERS • ENERGY SAVING LED & HID LUMINAIRES & FIXTURES

with highly polished Stainless steel reflectors having sustained lasting performance for Mining, Industrial, & Commercial applications, Telescopic & Tilting Towers both Ground & Mobile Trolley / Skid mounted.  
REGD. OFFICE : P - 27 SAGAR MANNA ROAD, KOLKATA 700 060

### 6. Relief Train & 142T crane lights –

The luminaries for relief train are the biggest challenge for the Railways today to which they have not been in a position to overcome successfully.

The luminaries to be used at the accident site can get power from the generating sets or batteries available on the relief train. The luminaries are required to be high intensity long range type which can provide sufficient illumination at the accident site from a distance because electrical bogie of the relief train may not be in a position to reach close to the accident site.

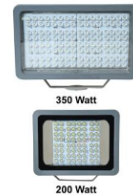
Telescopic towers fitted with long range high intensity flood lights cannot be used because of over head wires. Light weight Tripod stands on which at least 2 long range flood lights can be fitted is another basic requirement.

Portable flood lights operable from 24/48 volt which can provide sufficient illumination would also be preferred for safety requirements at the accident site during the inclement weather.

142 Ton cranes which are part of the relief trains get handicapped for want of long range lights producing good illumination at the accident site.

#### Sigma recommendations :

1. Sigma offers 350 watt 300 Watt & 200 watt long Range LED lights suitable for operation on supply from mains / gensets. These can be supplied with suitable tripod stand of one meter length.
2. Sigma offer portable Remote Area lighting system having high intensity, long range LED flood lights backed up by rechargeable lithium phosphate batteries. These are available with one, two or 4 lights of 40 watt LED lights. The system have stands of 2 /3 /4/5 meter long telescopic tilting type self supporting stands.
3. Low voltage lights fitted on tripod stands operable on battery supply from the relief train batteries.
4. 24 volt 100 watt, 60 watt or 40 watt long range high intensity lights for 142 ton cranes.



### TELESCOPIC TOWERS • ENERGY SAVING LED & HID LUMINAIRES & FIXTURES

with highly polished Stainless steel reflectors having sustained lasting performance for Mining, Industrial, & Commercial applications, Telescopic & Tilting Towers both Ground & Mobile Trolley / Skid mounted.  
REGD. OFFICE : P - 27 SAGAR MANNA ROAD, KOLKATA 700 060

### 7. Emergency lighting box :-

**Problem identification :**

The one equipment that need immediate attention of the Railways and which have a great bearing on the safety and security of general public is the emergency lighting Box

The present box is steel trunk box with 2 meter tripod stand and 2 no 24 volt lights. The problem with this Equipment is that

- a. It is heavy to carry from one place to another.
- b. 80% of the equipment does not work at the time of need. It takes minimum 20/30 minutes to open and operate the system by which time the very purpose of the equipment requirement is lost at times.

**Sigma recommendations :**

Sigma offers light weight emergency lighting box complete with 2 nos of 24 volt 40 watt high intensity, long range battery operated lights backed up by rechargeable lithium phosphate batteries providing two hour back up and 2 meter telescopic tilting stand fitted to the box



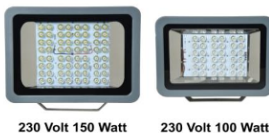
### 8. Over Head Maintenance Car / Tower van lights :-

**Problem identification :**

For maintenance of which lines the overhead Car / Tower van require specific lights which should be in a position to provide upward illumination for the overhead lines. They also require long range lights which can illuminate the near by portals. In addition they require long range lights to be fitted on both sides for illuminating the tracks. The lights should naturally be water dust and vermin proof and should produce high intensity and long range. Low voltage lights should be preferred.

**Sigma recommends :**

- a. Sigma recommends low voltage long range 40 / 60 watt LED flood lights for maintenance of overhead wires lines.
- b. 150 watt 230 volt long range LED lights for illuminating the nearby portals.
- c. 100 watt 230 volt long Range lights for use as a headlight to be fitted on both sides of the Van / Tower.



### TELESCOPIC TOWERS ● ENERGY SAVING LED & HID LUMINAIRES & FIXTURES

with highly polished Stainless steel reflectors having sustained lasting performance for Mining, Industrial, & Commercial applications, Telescopic & Tilting Towers both Ground & Mobile Trolley / Skid mounted.  
REGD. OFFICE : P - 27 SAGAR MANNA ROAD, KOLKATA 700 060

## 9. Maintenance Lights in cluding under carriage maintenance at pits :-

### Problem identified :

The basic requirement of maintenance lights is that they should be low voltage to prevent shock and electrocution. It would be preferred if lights allow hands free operation like lights with magnetic base that they can get struck to the place of work and allow hands free operation. Small self-supporting stands can be provided with the lights to have hands free operation. For pits at loco sheds only low voltage lights are permitted because of safety requirements. The lights are to be fitted recessed to the walls in such a way that these produce light going to the top so that underneath of the engine or under carriage gets sufficient light for ease of maintenance.

At present low voltage hand lamps are used. This requires the services of an additional person to show the light to the working mechanic. Alternately the mechanic takes light in one hand and works with the other hand which retards the efficiency of work.

### Sigma offers :

- 24 volt 20 watt high intensity long range inspection lights.
- 24 volt 20 w for use long range inspection lights with magnetic base for inspection of under carriage of stationary trains.
- 24 volt 20 watt long range inspection lights with small self supporting stand for use at pits to provide sufficient lights upwards for maintenance of underneath of the Engine.
- Specially designed 20 watt / 40 watt 24 volt recessed light that can be fitted to the sides of the pit and provide light upwards for under carriage illumination.
- Lights referred at a to c above with inbuilt 24 volt lithium phosphate batteries



**Safety** - To meet the safety requirements the Sigma LED Light fittings are designed with 4 layers of protection i.e. Over Voltage, Over Current, Over Temperature and Short Circuit

**Approvals** - Our LED lights have mandatory BIS approval.

We use our LED lights on 60% capacity to enhance their working life

## TELESCOPIC TOWERS • ENERGY SAVING LED & HID LUMINAIRES & FIXTURES

with highly polished Stainless steel reflectors having sustained lasting performance for Mining, Industrial, & Commercial applications, Telescopic & Tilting Towers both Ground & Mobile Trolley / Skid mounted.  
REGD. OFFICE : P - 27 SAGAR MANNA ROAD, KOLKATA 700 060