

**NTPC, 2x660MW TALCHER THERMAL POWER PROJECT  
STAGE-III**

**TECHNICAL SPECIFICATION  
FOR  
LIGHTING FIXTURES, LAMPS & MISC. ITEMS**

**SPECIFICATION No. PE-TS-497-558-E001**  
ISSUE NO. 01  
REV NO. 00



**BHARAT HEAVY ELECTRICALS LIMITED  
POWER SECTOR  
PROJECT ENGINEERING MANAGEMENT  
NOIDA, INDIA**



TECHNICAL SPECIFICATION  
LIGHTING FIXTURES, LAMPS & MISC. ITEMS  
2X660MW TALCHER THERMAL POWER  
PROJECT, STAGE-III

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## PROJECT INFORMATION

SL.NO	DESCRIPTION	DETAILS
1	<b>METEOROLOGICAL DATA</b>	47.2°C
1.1	MAXIMUM TEMPERATURE	3.5°C
1.2	MINIMUM TEMPERATURE	87
1.3	MAXIMUM RELATIVE HUMIDITY	35
1.4	MINIMUM RELATIVE HUMIDITY	131.2mm
1.5	AVERAGE ANNUAL RAINFALL	Zone III
1.6	SEISMIC ZONE (AS PER IS 1893)	71.5m
1.7	HEIGHT ABOVE MSL	
2	<b>ELECTRICAL DATA</b>	
2.1	AMBIENT TEMPERATURE FOR DESIGN OF ELECTRICAL EQUIPMENT	50 deg. Centigrade,
2.2	RATED FREQUENCY	50 HZ
2.3	FREQUENCY VARIATION	+3% & -5%
2.4	AC VOLTAGE	415,240 V
2.5	AC VOLTAGE VARIATION	10%
2.6	DC VOLTAGE	220V DC
2.7	DC VOLTAGE VARIATION	-15% to +10%
2.8	FAULT LEVEL (KA/SEC)	9kA for fixtures



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### SCOPE


#### SCOPE OF THIS PACKAGE COVERS THE FOLLOWING:


SL.NO	PARAMETERS	REQUIREMENT
1	Supply Including Design, Engineering, Manufacturing of Lighting Fixtures, Lamps & Misc. items	YES
a)	Main Supply	YES
b)	Commissioning Spares	NO
2	Painting	NO
3	Inspection & Testing	YES
4	Packing	YES
5	Transportation & Delivery To Site	YES
6	Erection & Commissioning	NO
7	Supervision of Erection & Commissioning	YES
8	Mandatory Spares	NO
9	O & M Service	NO
10	O & M Spares	NO

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<b>GENERAL TECHNICAL REQUIREMENT</b>	
1	Following items are excluded from the scope of supply of this package: Poles, Mast, LDB, WDB, Lighting panels, Rigid conduit, earthing material and PVC Wires, Cables.
2	It is not the intent to specify herein all the details of design and manufacturing. Bidder shall ensure that the offered equipment confirms in all respects to high standards of design, engineering and workmanship.
3	Bidder shall also ensure that the offered equipment shall comply with all applicable statutory and regulatory requirements.
4	In the event of any conflict between the requirements of two clauses of this specification, documents or requirements of different codes and standards specified, the more stringent requirement as per the interpretation of the owner shall apply.
5	Drawing/document submission shall be through web based Document Management System(DMS) of BHEL. Bidder would be provided access to the DMS for drawing/document submission. Bidder to ensure internet connectivity of min speed of 2Mbps at their end.
6	Drawings/ documents submitted by vendor at any stage shall be complete in all respects. Any incomplete drawing submitted shall be treated as non- submission with delays attributable to vendor. For any clarification/ discussion required to complete the drawings, the bidder shall depute his personnel to BHEL / Customer's Office as per the requirement for across the table submission/ finalizations of drawings.
7	Latest codes and standards shall be complied with as on date of techno-commercial bid opening.
8	Bidder shall submit Quality Plan in the event of order based on the Quality Plan enclosed therein on compliance route. Inspection / testing shall be witnessed as per same apart from review of various test certificates/ Inspection records etc.
9	Equipment must be safe, reliable and easy to maintain at all operating conditions
10	The equipment shall comply with all applicable safety codes and statutory regulations of India as well as of the locality where the equipment is to be installed. Statutory and regulatory regulation shall be applicable as per Indian Electricity Rule, 2005 with latest amendment for illumination & low voltage power services
11	The illumination system shall be designed on the basis of best engineering practice and shall ensure uniform, reliable, aesthetically pleasing and glare free illumination. All fixtures shall be of proven design for applications in power plant environment. The lighting fixtures shall be designed for minimum glare. The design shall prevent glare/luminous patch seen on VDU/ Large video screens, when viewed from an angle. The finish of the fixtures shall be such that no bright spots are produced either by direct light source or by reflection. The diffusers/ louvers used in fixtures shall be made of impact resistant polystyrene sheet and shall have no yellowing property over a prolonged period.
12	<p>Following sizes of 1100 V grade, PVC insulated, single core, stranded copper conductor wires will be used:</p> <ul style="list-style-type: none"> <li>* Lighting Panel to JB's/ Switches: 1.5 sq. mm (Cu Wire) /( PVC insulated, FRLS PVC sheathed armoured cable.cable shall be used for Boiler platform / ESP platform and Cable spreader rooms in power house ); Wiring in hazardous area if applicable, transformer yard, outdoor area (like Miscellaneous areas) will be done using 2C-1.5 sq. mm (Cu), PVC insulated, FRLS PVC sheathed armoured cable.</li> <li>* JB's/ switches to Fixtures: 1.5 sq. mm (Cu Wire)</li> <li>* Panel to First receptacles: 4.0 sq. mm (Cu Wire) [ for boiler area, ESP platforms and all cable vaults, armoured cable of size 10 sq. mm (Al) XLPE insulated shall be used ]</li> <li>* First receptacles to looping other receptacles: 4.0 sq. mm (Cu Wire) [ for boiler area, ESP platforms and cable vaults, armoured cable of size 10 sq. mm (Al) XLPE insulated shall be used ]</li> <li>* In case of only one receptacles in ckt., Panel to receptacles: 4.0 sq. mm (Cu Wire) [ for boiler area, ESP platforms and cable vaults, armoured cable of size 10 sq. mm (Al) XLPE insulated shall be used ]</li> <li>* Panel/ JB's to flood light fixtures: 2C x 1.5 sq. mm (Cu Wire)</li> </ul> <p>Note: Wires &amp; Cables are not in vendor's scope of supply, however vendor to show size &amp; quantity in CLO drawings.</p>
13	<p>Earthing of lighting system will be done by using of following sizes of wire / flat:</p> <p>Lighting fixtures, receptacles, junction boxes &amp; switch boxes: 14 SWG GI wire</p> <p>Welding receptacles: GS Flat 2x50x6 mm</p> <p>All the earthing to various equipment like receptacles, junction boxes etc shall be provide at two point.</p> <p>Note : Earthing material is not in bidder's scope of supply . However, Bidder shall make suitable provision for earthing for the equipment in their scope of supply</p>
14	Bidder shall confirm compliance with the Standard Quality Plan no. 000-0-999-QOE-S-062 (enclosed with the specification) without any deviations.
15	Luminaires suitable for surface mounting shall also be suitable for pendant mounting. Knockouts of 20mm ET conduit fixation shall be provided for this purpose.

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16	Recessed type decorative luminaires shall be suitable for mounting with gypsum boards / luxalon / plaster of Paris/aluminium frame false ceiling of standard size	
17	Typical Mounting arrangement of Lighting fixtures is shown under compliance drawings, all indicated accessories required for mounting of fixtures shall be supplied along with the respective lighting fixture.	
18	Vendor shall prepare and submit Lighting layout and Conduit layout drawings considering the following requirements for purchaser's approval :	
18.1	<p>Lighting calculations for indoor areas covering details such as room dimensions (length, width, height), illumination level, maintenance factor (Dust prone indoor/outdoor areas, boiler area: 0.6, Control room and air conditioned areas : 0.8, Indoor areas (non-ac): 0.7), reflection factor ( ceiling : 0.8 , wall :0.5 , floor : 0.2 ) , type of luminaire, mounting height of luminaire, room index, coefficient of utilisation, no. of luminaires (AC Normal &amp; AC Emergency), lumen output of each luminaire, reference drawings and remarks.</p> <p>Working height from floor level should be considered as 0.85 m.</p> <p>Lighting design for indoor areas will be done by LUMEN method only.</p> <p>For a given indoor area, number of luminaires is calculated as follows: Number of luminaires = L x W x LUX LEVEL (Average)/ LUMEN x COU x MF Where, L= Length of room (Restricted to Max. 5 times of width) W= Width of room LUMEN= Lumen output of each lamp COU= Coefficient of Utilisation MF= Maintenance Factor Coefficient of Utilisation (COU) is determined from the COU chart for a particular luminaire of the manufacturer, corresponding to selected reflection factors and calculated Room Index. Room index should be calculated using the following formula : <math>(L \times W) / (L+W) \times MH</math> where MH : Mounting height of luminaire . L&amp;W : Length and width of the room</p>	
18.2	Apart from maintenance factors given above, temperature correction factor shall be considered in the lighting design for fixtures located in non air conditioned areas.	
18.3	Lighting calculations for outdoor areas covering average illumination level, type of luminaire, chart for illumination level at various points in the area; location (coordinates), number and height of poles; type, number (normal + emergency) and orientation of luminaires etc. Lighting design for outdoor area, open area shall be done by computer programme as per standard norms for lighting design to meet the specified lux level. Average maintenance factor for outdoor and road lighting: 0.6.	
18.4	Single line diagrams of power distribution upto Lighting Panels. Separate drawing for complete lighting distribution shall also be prepared by vendor.	
18.5	Loads on each phase of LP and LDB with consideration of diversity factor(50%) for sockets.	
18.6	Layout drawings for each indoor area indicating location of luminaires, sockets, fan points, exhaust fans, LDBs and LPs. Details of type of luminaires, source of power supply (AC Normal, AC Emergency, DC Normal and DC Emergency). Bill of Material shall also be covered which shall include unit wise requirements of luminaires and other items.	
18.7	Layout drawings for each outdoor area indicating location of poles / towers, orientation of luminaires, sockets and LPs. Details of pole height / mounting height, type of luminaires, source of power supply (AC Normal, AC Emergency, DC Emergency). Bill of Material shall also be covered for various types of luminaires.	
18.8	Conduit layout drawings with wiring and load distribution details as superimposed on the area layout drawings indicated above. Drawings shall include Bill of Material for conduits, wires, cables etc.	
18.9	Wires shall be laid in GI conduits of 20mm dia size (minimum). Filling area of wires in conduit shall not exceed 40% of conduit area. Wiring of AC Normal, AC Emergency and DC services will run in separate conduits. Lighting and receptacles will be fed from separate circuits. No two different phase circuits will be run in same conduit. However, different circuit of same phase may be laid in the same conduit. A maximum of 15 fittings per circuit will be connected to one phase. At least two sub circuits shall be used for illumination of a particular area. Sub circuit loading of each lighting panel shall be restricted to 2000 Watts.	
17.9	Cables shall run in cable trays. Conduit is not applicable for the portion where cables are used.	
18.0	Master Bill of Material (to be submitted at regular intervals of engineering progress) including all items required for the complete lighting system viz. lighting fixtures, lamps, Lighting DBs, Welding DBs, lighting panels, conduits, PVC wires, cables etc.	
19	Lighting panels shall have 20% spare outgoing feeders. AC NLP (with timer for outdoor LP) shall have 6/12/18 outgoing feeders as per the loading requirement of the area where LP is installed. Street LP shall have 6 outgoing feeders.	
21	The vendor shall guarantee satisfactory performance of the equipment supplied under all conditions and requirement as laid down by this specification.	
22	LED modules and drivers shall be compatible to each other. The LED module driver's ratings and makes shall be as recommended by corresponding LED chip manufacturer. LED Drivers shall have following control & protections:Open Circuit Protection, Suitable precision current control of LED, Short Circuit Protection, Over Temperature Protection, Overload Protection and Surge Protection.	

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23	<p>The individual lamp wattage for LED shall be upto 3 watt. Fractional wattage LEDs are also acceptable. The LED chip efficacy shall be min 120 Lm/W. The luminaire efficacy shall be not less than 100 Lm/W. Suitable heat sink shall be designed &amp; provided in the luminaire. The LED used in the luminaires shall have colour rendering index (CRI) of Min 80. Colour designation of LED shall be "cool day light" (min 5700K) type for indoor areas. However for outdoor areas, the colour temperature of LED shall be min. 4000K, including rough &amp; dust prone areas. LED shall conform to the LM 80 requirements. The max. junction temperature of LED shall be 85 deg C. Further the lumen maintenance at this temperature shall be min 90%. The THD of LED Luminaires shall be less than 10%. Further the EMC shall be as per IS 14700. The power factor of the luminaire shall not be less than 0.9. The marking on luminaire &amp; safety requirements of luminaire shall be as per IS standards. Suitable heat sink with proper thermal management shall be designed &amp; provided in the luminaire.</p> <p>The connecting wires used inside the system, shall be low smoke halogen free, fire retardant type and fuse protection shall be provided in input side specifically for LED luminaire.</p> <p>Care shall be taken in the design that there is no water stagnation anywhere in the housing of the luminaire. The entire housing shall be dust and water proof protection as per IS 12063.</p>	
24	<p>The lighting fixtures in the plant area shall be group controlled from lighting panel. The lighting fixtures in office areas, control rooms etc. shall be controlled by switches. Each switch shall control a maximum of three fluorescent fixtures.</p>	
25	<p>LED Luminaires shall be used for the lighting of all the indoor &amp; outdoor areas. However, for hazardous areas lighting etc. conventional type or LED luminaires shall be used. In the hazardous areas like Hydrogen generation plant/ storage area, fuel oil handling area or any other gas/ liquid fuel storage/ handling areas in bidder's scope, lighting shall be flameproof. The type of fixtures and receptacle used in Hydrogen generation plant building shall be suitable for group IIC as per IS:2148 or class I, Division II as per NEC 70-428. In false ceiling area LED luminaires shall be recessed mounting type &amp; in non-false ceiling area the LED luminaires shall be surface mounting type. For CCR room, dimmable and tuneable down lighter fittings shall be provided. LED fixtures shall be used for DC lighting. Lighting Dimmer System shall be complete in all respects for control of the dimmable fixtures in CCR room. Any special cable required for the same shall be in the supplier scope.</p>	
27	<p>Occupancy based passive infra-red sensors The sensors shall be recess mounted, programmable type suitable for lighting load of 6A with variable off delay settings. The detection area shall be minimum 5 metres for standard room height of 3mt. All the calibrated settings shall be stored in non-volatile memory of PIR sensor which shall be unaffected by power supply fluctuations. Necessary 16A contactor shall be supplied along with each sensor &amp; shall be located inside the switch box. Occupancy sensors shall be provided in service building, admin building, canteen in their conference rooms, cabins and toilets.</p>	
28	<p>Lighting system will be provided with AC normal, AC emergency and DC as listed against various areas. The sources of power lighting are as below: (i) 415V AC Normal (ACN) Supply from lighting distribution boards / switchboard MCCs (ii) 415V AC Emergency (ACE) Supply from Emergency Board (iii) 220V DC Supply from DC Distribution Board (iv) 24V AC supply for maintenance (v) DC lighting is to be provided, through self-contained DC fixtures with four hours back-up duration, at strategic locations, in auxiliary/offsite buildings wherever DC lighting is not available. The fixtures shall be switched 'ON' automatically in case of failure of AC supply. For main plant area normally all AC luminaries will be in service on normal AC supply. Approximately distribution of AC Luminaries on AC normal and AC emergency shall be as below: AC Normal (ACN) supply: 80% AC Emergency (ACE) supply: 20%</p> <p>For Average lux level and type of fixtures please refer to Compliance drawings For lighting and LV service to be provided in different areas please refer to performance guarantees</p>	
29	<p>Receptacles boxes shall be fabricated out of MS sheet of 2mm thickness and hot dipped gavanised or of die-cast aluminium alloy of thickness not less than 2.5 mm. The boxes shall be provided with two nos. earthing terminals, gasket to achieve IP55 degree of protection, terminal blocks for loop-in loop-out for cable of specified sizes, mounting brackets suitable for surface mounting on wall/column/structure, gland plate etc. The ON-OFF switch shall be rotary type heavy duty, double break, AC23 category, suitable for AC supply. Plug and Socket shall be shrouded Die-cast aluminium. Socket shall be provided with lid safety cover. Robust mechanical interlock shall be provided such that the switch can be put ON only when the plug is fully engaged and plug can be withdrawn only when the switch is in OFF position. Also cover can be opened only when the switch is in OFF position. Wiring shall be carried out with 1100 V grade PVC insulated stranded aluminium/copper wire of adequate size. The Terminal blocks shall be of 1100 V grade. The Terminal blocks shall be of 1100 V grade made up of unbreakable polyimide 6.6 grade with adequate current rating and size. The welding receptacles shall be provided with RCCB/RCD of 30mA sensitivity having facility for manual testing/checking of operation of RCCB/RCD.</p>	

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30	<p>(i) Decorative receptacle: At least 01 number 6/16A, 6-Pin, 240V AC decorative socket with switch will be provided in control room, office area, store room, cabin etc. In office area, suitable number of decorative socket with switch to be provided for IT requirements.</p> <p>(ii) Industrial receptacle: At least 01 number 20A, 3-Pin, 240V AC industrial type receptacles with switch will be provided at suitable location in industrial area. The receptacles shall be provided at interval of 50m or part thereof. All receptacles will be controlled with a switch.</p>	
31	<p>(iii) Welding receptacle: 63A, 3-phase, 415V AC welding receptacles with isolating switch will be provided at specific points near all major equipment and at an average distance of 50m (location will be decided during detailed engineering). Maximum 04 nos. receptacles will be fed through one feeder. The welding receptacles shall be provided with RCCB/RCD of 30mA sensitivity having facility for manual testing/ checking of operation of RCCB/RCD.</p>	
32	<p>For items other than fixtures, bidder to furnish test certificates/conformance certificate during detailed engineering.</p>	
33	<p>For outdoor lighting and road lighting ratio of minimum to average illumination will not be less than 0.3 and for minimum to maximum will not be less than 0.2.</p>	
34	<p>Glands &amp; lugs for JB's for cables shall be in bidder scope.</p>	
35	<p>Rubber components used in the gland shall be of neoprene. Name / trade name of manufacturer, type no. and applicable range of outer diameter of cable shall be engraved / indelibly printed on the cable gland</p>	
36	<p>All equipment shall be supplied with the power and control cable lugs of suitable size, whether specifically mentioned or not. Name / trade name and size of lug shall be engraved/ indelibly printed on each cable lug.</p>	
37	<p>Containers adequate for storing 100% of P.O. quantity material at site are to be supplied. Vendor shall furnish suitable justification to purchaser during detailed engineering for the number and size of containers being supplied. Materials like Concrete Blocks of Paved surface required for installation and placing of container shall be made available by BHEL. Other supporting material like Rails etc. shall be part of Container only.</p>	
38	<p>Packing slip &amp; holder: Packing slip kept in polyethylene bag shall be placed inside the container at appropriate place. One copy of packing slip wrapped in polyethylene bag covered in galvanized iron tin sheet/ aluminium packing slip holder shall be fixed on the external surface the container.</p>	



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**TECHNICAL DATA - PART - A**


SL.NO		UOM	DETAIL
1.00	<b>DESIGN CODES &amp; STANDARDS</b>		
1.1	Code of practice for interior illumination		IS 3646
1.2	Code of practice for industrial lighting		IS 6665
1.3	Code of practice for lighting of public thoroughfare		IS 1944
1.4	Luminaires.		IS 10322
1.5	General Lighting. LEDs & LED Modules Terms and definitions		IS 16101
1.6	Self-Ballasted LED lamps for General Lighting Services: Safety requirement.		IS 16102-1
1.7	Self-Ballasted LED lamps for General Lighting Services: Performance requirement		IS 16102-2
1.8	LED modules for General lighting safety requirements.		IS 16103-1
1.9	Lamp Control gear.		IS 15885-2
1.10	A.C. or D.C. supplied Control gear for LED modules		S 16104
1.11	Method of measurement of Lumen maintenance of solid state (LED) sources		IS 16105
1.12	Method of electric and photometric measurement of solid state (LED) products		IS 16106
1.13	Luminaires performance		IS 16107
1.14	Plugs and socket outlets of rated voltage upto and including 250 volts and rated current upto and including 16 amperes		IS 1293
1.15	Interlocking switch socket outlet		IS 4160
1.16	Electric ceiling type fans and regulators		IS 374
1.17	Recommended practice for hot dip galvanising of iron & steel		IS 2629
1.18	Method of testing uniformity of coating on zinc coated articles		IS 2603
1.19	Flexible steel conduits for electrical wiring		IS 3480
1.20	Scaffolds & ladders - Code of safety		IS: 3696
1.21	Aluminium extension ladders		IS: 4571


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<b>2.0</b>	<b>DESIGN /SYSTEM PARAMETERS</b>		
2.1	Design ambient temperature	°C	50 °C
2.2	AC Supply		
2.2.1	Rated voltage	V	415
2.2.2	Rated frequency	Hz	50
2.2.3	Voltage variation (permissible)	%	+10% to -10%
2.2.4	Frequency variation (permissible)	%	+3% to -5%
2.2.5	Combined voltage & frequency variation	%	10%
2.2.6	System fault level & duration	KA/sec	9kA for fixture
2.3	DC Supply		
2.3.1	Rated voltage	V	220
2.3.2	Voltage variation (permissible)	%	+10% to -15%
2.4	Lighting Concept: Types of supplies considered (other than AC Normal)		
2.4.1	AC emergency		Applicable
2.4.2	DC emergency		Applicable
<b>3.0</b>	<b>CONSTRUCTION FEATURES</b>		
<b>3.1</b>	<b>Lighting Fixtures</b>		
3.1.1	Lighting Fixture type and description		Total Luminous Flux (Lumen) of Luminaire – Min. Value, Measured Electrical Input Power (Watt) of Luminaire – Max. Value
3.1.1.1	MW96 (LED): Flameproof lighting fixture suitable for conduit/ surface/ suspended mounting with integral driver		6145 lumen, 61.45 W
3.1.1.2	FC06 (LED): Industrial type LED fixture aesthetically designed for Switchgear/ Equipment room/ stair case/ corridors.	Lumen, W	4200 Lumen, 42 W
3.1.1.3	FC07 (LED): Industrial type LED fixture suitable for conduit/ surface/ suspended/ column mounting with integral driver. Fixture shall operate at 220 V DC supply. Necessary accessories like DC to AC convertor etc. to be included in fixture, if required.	Lumen, W	1150 Lumen, 11.5 W
3.1.1.4	FC30 (LED): Panel type 600mm x600mm decorative LED fixture suitable for recess mounting in false ceiling with integral driver aesthetically designed for Control Room/ Office.	Lumen, W	3600 Lumen, 36 W
3.1.1.5	FC33 (LED): Decorative, recessed type LED fixture (down lighter) with integral driver. Fixture shall operate at 220 V DC supply. Necessary accessories like DC to AC convertor etc. to be included in fixture, if required.	Lumen, W	1000 Lumen, 10 W


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3.1.1.6	FC81 (LED): Corrosion proof, totally enclosed type LED fixture with integral driver. Industrial type LED Fixture suitable for Battery rooms	Lumen, W	4400 Lumen, 44 W
3.1.1.7	SF63 (LED): Flood light type Heavy duty LED fixture with integral driver.	Lumen, W	13500 lumen, 135 W
3.1.1.8	SF66 (LED): Flood light type Heavy duty LED fixture with integral driver.	Lumen, W	48000 lumen, 480 W
3.1.1.9	SB11 (LED): Low Bay, Industrial type LED fixture with integral driver.	Lumen, W	10000 lumen, 100 W
3.1.1.10	SB02 (LED): Medium Bay, Industrial type LED fixture with integral driver.	Lumen, W	16500 lumen, 165 W
3.1.1.11	SB03 (LED): High Bay, Industrial type LED fixture with integral driver. (Mounting Height > 10M)	Lumen, W	24000 lumen, 240 W
3.1.1.12	SS62 (LED): Street light, LED fixture with integral driver.	Lumen, W	13000 lumen, 130 W
3.1.1.13	SS63 (LED): Street light, LED fixture with integral driver.	Lumen, W	16000 lumen, 160 W
3.1.1.14	SW41 (LED): Well glass, Dust proof LED fixture with integral driver	Lumen, W	4200 lumen, 42 W
3.1.1.15	SW42 (LED): Well glass, Dust proof LED fixture with integral driver	Lumen, W	7900 lumen, 79 W
3.1.1.16	FC34 (LED): Bulkhead type LED fixture suitable for column mounting with integral driver. Fixture shall operate at 220 V DC supply. Necessary accessories like DC to AC convertor etc. to be included in fixture, if required.	Lumen, W	1000 Lumen, 10 W
b	Type of false ceiling for recessed LED luminaire		Grid False ceiling (600mm X 600mm) (for Control Room).
c	Degree of protection for luminaires		Outdoor: Min IP65 and weather Proof Indoor: Surface / pendant mounting :IP54 Recess mounting (false ceiling): IP20.
d	Hazardous area classification of flameproof/explosion proof lighting fixtures		Zone-2, Group IIA/IIB/IIC
e	Type of LED Lamps		Cool Daylight


	<b>TECHNICAL SPECIFICATION</b> <b>LIGHTING FIXTURES, LAMPS &amp; MISC. ITEMS</b> <b>2X660MW TALCHER THERMAL POWER</b> <b>PROJECT, STAGE-III</b>		PE-TS-497-558-E001
			Issue No: 01
			Rev. No. 00
			Date : 20.04.2024
<b>3.2</b>	<b>Emergency Lighting Unit</b>		
a	Lamp type		LED
b	Nos. of Lamp		2
c	Lamp wattage	W	6
d	Type of battery		Ni-Cd
e	Battery voltage	V	9
f	Battery backup time	Hrs	4
g	In-built charger		YES
<b>3.3</b>	<b>Exit Sign</b>		
a	Lamp type		LED
b	Nos. of Lamp		1
c	Lamp wattage	W	12
d	Type of battery		Ni-Cd
e	Battery backup time	Hrs	0.5
<b>3.4</b>	<b>Junction Box (other than Street Light Junction box)</b>		
a	Type of terminals		Four (4) way stud type
b	Size of wire for termination	mm <sup>2</sup>	Shall be for terminating upto 2 nos. 1.5 mm <sup>2</sup> copper wire on each terminal
c	Size of cable for termination (from JB to fixture) [ for boiler area, ESP platforms and all cable vaults, cable shall be used ]	mm <sup>2</sup>	2C-1.5 sq. mm (Cu), PVC insulated, FRLS PVC sheathed armoured cable
d	Type of installation		Suitable for outdoor installations
e	Enclosure material		Fire retardant material for indoor application . Thermoplastic / thermosetting / FRP type
f	Enclosure thickness	mm	3 mm
g	Degree of protection		IP-55 for indoor & IPW-55 for outdoor
<b>3.5</b>	<b>Industrial/ Welding Receptacle</b>		
a	Enclosure material		MS sheet & hot dip galvanised / Die cast aluminium alloy / CRCA sheet steel with electrostatic powder coating
b	Enclosure thickness	mm	2 mm (min) for MS sheet & hot dip galvanized / 2.5 mm (min) for die cast aluminium alloy / 2 mm (min) for CRCA sheet steel with electrostatic power coating
c	Process of galvanization		Hot dip galvanized
d	Weight of zinc (Thickness)	g/m <sup>2</sup> (micron)	460 g/m <sup>2</sup> (65 micron)
e	Degree of protection		IP-55
f	other details		


	<b>TECHNICAL SPECIFICATION</b> <b>LIGHTING FIXTURES, LAMPS &amp; MISC. ITEMS</b> <b>2X660MW TALCHER THERMAL POWER</b> <b>PROJECT, STAGE-III</b>	PE-TS-497-558-E001
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a	Single Phase (20A) Industrial receptacle-RA	20A, 240V, 1-phase, 2 pole, 3-pin (third pin scrapping earth) porcelain, metal clad socket with a metallic cover tied to it
i	Switch	Rotary, heavy duty 20A switch conforming to applicable standard
ii	Plug	Shrouded, die-cast aluminium plug
iii	Interlock	It shall be combined interlocked weather proof industrial unit
iv	Mechanical interlock	(i) Switch can be put ON only when plug is fully engaged. (ii) Plug can be withdrawn only when switch is in OFF position. (iii) Cover can be opened only when switch is in OFF position.
v	Water protection	The arrangement should ensure that water does not enter the plug when socket is ON
vi	Loop-in loop-out terminals	Loop-in loop-out terminals shall be provided inside the box suitable for 4 mm <sup>2</sup> Cu wire. [ for boiler area, ESP platforms and all cable vaults, cable of size 10 sq. mm (Al) shall be used ]
b	Three Phase (63A) Welding receptacle-RC	63A, 415V, 3-phase-neutral earth, metal clad socket with cover
i	Switch	Rotary, heavy duty 63A switch conforming to applicable standard.
ii	Plug	Shrouded, die-cast aluminium plug
iii	Interlock	It shall be combined, interlocked weather proof industrial unit.
iv	Mechanical interlock	same as that are applicable for RA type receptacles
v	Cable Size	The receptacle boxes shall be suitable for entry and exit of 3.5CX70 mm <sup>2</sup>
vi	Loop-in loop-out terminals	Al conductor PVC cable and loop-in loop-out terminals for the same shall be provided such that not more than one core is terminated at one terminal. Removable, undrilled cable gland plate shall be provided. Tinned copper lugs and double compression cable glands shall also be supplied by the bidder.
vii	Protection	RCCB/RCD of 30mA sensitivity having facility for manual testing/checking of operation of RCCB/RCD

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<b>3.6</b>	<b>Decorative Receptacle</b>		
a	Enclosure material		CRCA sheet steel
b	Enclosure thickness	mm	2 mm
c	Surface treatment		Galvanized
d	Process of galvanization		Hot dip galvanized
e	Weight of zinc (Thickness)	g/m2 (micron)	460 g/m2 (65 micron)
f	Degree of protection		IP-20
g	other details		(i) Combination of 6A & 16A, 240V, 1-phase, 2 pole, 3-pin, third pin grounded socket with integral piano key type 16A switch, flush mounted on decorative bakelite (6 mm thick)/ perspex (3 mm thick) sheet as cover of the boxes. (ii) Loop-in loop-out terminals similar to type RA shall be provided. These will be located in office areas.
<b>3.7</b>	<b>Switch Box</b>		Modular Type switches to be provided
a	Enclosure material		Galvanized MS Sheet.
b	Enclosure thickness	mm	1.6mm MS sheet with 3mm thick decorative, Perspex cover.
c	Degree of protection		IP-20
d	Switchboard types		(i) Type SWB1 - Switch board with 2 no. 5A switch, JB type SW1. (ii) Type SWB2 - 3 nos. 5A switches, 1 No. 5A socket, JB type SW2. (iii) Type SWB3 - 5 nos. 5A switches, 1 No. 5 A Socket, 1 No. fan regulator, JB type SW3. (space provision shall be kept for fan regulator in switch boxes) (iv) Type SWB4 - 7 nos. 5A switches, 1 No. 5A Socket, 3 nos. fan regulator, JB type SW4.(space provision shall be kept for fan regulator in switch boxes) (v) Type SWB5 - 5 nos. 5A switches, 1 No. 5 A Socket, JB type SW5. (shall have the provision for mounting 16A contactor)  JB-SW1/2/3/4/5 Provided with stud type terminals including spare terminal, each terminal suitable for terminating upto two nos. of 1.5 mm <sup>2</sup> copper wires.

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<b>3.8</b>	<b>Flexible conduit</b>		
a	Type		Heat resistant TERNE coated steel
b	Size	mm	20 mm dia
c	Standard length	M	25 to 50 M
<b>3.9</b>	<b>Cable Glands</b>		<b>By vendor for all incoming and outgoing cables/wires</b>
a	Type		Double compression
b	Material		Brass
c	Nickel Plating provided		YES
d	Flameproof glands with flameproof		YES
<b>3.10</b>	<b>Cable Lugs</b>		<b>By vendor for all incoming and outgoing cables/wires</b>
a	Type		Crimping type/ ring type
b	Material		Tinned copper
<b>3.11</b>	<b>LADDERS</b>		
a	Type		Both (Free standing and Wheel Mounted)
b	Material		Aluminium
c	Duty		Medium
d	Surface treatment		Galvanized
<b>3.12</b>	<b>CEILING FAN</b>		
a	Type		Copper wound single phase motor, aerodynamically designed well balanced Aluminium blades (3 nos.), down rod, die cast Aluminium housing, capacitor, suspension hook, canopies etc.
b	Finishing		Finished in stove enamelled white or with electro static powder coating
c	Power factor		min. 0.9 (except for hazardous and flameproof areas)
d	Voltage		240V +/- 10%, 50Hz, AC
e	Insulation		Class 'E' or better
f	Sweep		1200MM sweep with Stepped electronic
g	Efficiency class		BEE-5 star rating
<b>3.13</b>	<b>24V AC Supply system</b>		
a	Panel enclosure		2 mm (min) for MS sheet & hot dip galvanized / 2.5 mm (min) for die cast aluminium alloy / 2 mm (min) for CRCA sheet steel with electrostatic power coating
b	Transformer type		Dry type two winding, 1 phase transformer
c	Transformer rating		3kVA
d	Transformer voltage ratio		415/ 24 Volt
e	Cooling		Natural air cooled
f	Insulation		class F insulation or better, with temperature rise limited to class B

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g	Impedance		5%
h	Tap changer		Off-circuit tap changer with +/- 5% in steps of +/- 1.25% tapping
i	Application areas		<u>Boiler/Aux Boiler area:</u> Near inspection manholes on boiler platforms and boiler drum <u>TG Building:</u> Near HP & LP heaters, turbine flash tank, blow down tank, near condenser water box and near bus duct termination of generator end. <u>ESP area:</u> Near inspection manholes.
j	Module type:		Portable type/ Fixed type
k	Incomer side:		40A TPN MCB
l	Outgoing feeder:		16A MCB
m	Lamp wattage		40W
n	Cable size (to be provided with portable module)		1.5 sq. mm. PVC insulated
o	Cable length (to be provided with portable module)		15 meter
p	Material of busbar		Tinned copper
q	Internal wiring		Min. 1.5 sq. mm. FRLS copper wire/cable
<b>3.14</b>	<b>STRIP LED (for cove lighting)</b>		
a	Type		Each strip shall be min. 5 meters in length
b	Connection Hardware		Adaptor for connection to the power supply to be provided. Inter-strip connectors to be provided. The above can be part of the strip itself.
4.0	<b>PERFORMANCE PARAMETERS</b>		
4.1	Vendor shall ensure satisfactory performance for lighting system designed by them at site. In the event of non satisfactory performance i.e. if the desired lux levels are not demonstrated at site, bidder shall supply (free supply without any cost to BHEL) additional lighting fixtures to achieve the desired lux levels as per specification requirement		

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5.0	<b>INSPECTION/TESTING</b>	
5.1	As per standard Quality Plan (000-0-999-QOE-S-062) (enclosed with technical specification)	
5.2	<b>TYPE TEST</b>	
5.2.1	The contractor shall carry out the type tests as listed in this specification on the LED fixtures to be supplied under this contract.	
5.2.2	The type tests shall be carried out in presence of the employer's representative, for which minimum 15 days' notice shall be given by the contractor. The contractor shall obtain the employer's approval for the type test procedure before conducting the type test. The type test procedure shall clearly specify the test set-up, instruments to be used, procedure, acceptance norms, recording of different parameters, interval of recording, precautions to be taken etc. for the type test(s) to be carried out.	
5.2.3	In case the contractor has conducted such specified type test(s) within last ten years as on the date of 06.06.2022 , he may submit during detailed engineering the type test reports to the owner for waiver of conductance of such type test(s). These reports should be for the tests conducted on the equipment similar to those proposed to be supplied under this contract and test(s) should have been either conducted at an independent laboratory or should have been witnessed by a client. The owner reserves the right to waive conducting of any or all the specified type test(s) under this contract. However, if the contractor is not able to submit report of the type test(s) conducted within last ten years from the date of 06.06.2022, or in case of type test report(s) are not found to be meeting the specification requirements, the contractor shall conduct all such tests under this contract at no additional cost to the owner either at third party lab or in presence of client /owners representative and submit the reports for approval.	
5.2.4	All acceptance and routine tests as per the specification and relevant standards shall be carried out. Charges for these shall be deemed to be included in the equipment price.	
5.2.5	Selection of samples for type test, acceptance test & routine test and acceptance criteria for all the items shall be as per relevant I.S	
5.2.6	Type test reports of the Lighting Fixtures of each type as per technical specification requirements/ standards shall be submitted for approval.	
5.2.7	Type test reports for LED as per standards for following shall be submitted for approval.	

	<p style="text-align: center;">TECHNICAL SPECIFICATION LIGHTING FIXTURES, LAMPS &amp; MISC. ITEMS 2X660MW TALCHER THERMAL POWER PROJECT, STAGE-III</p>	PE-TS-497-558-E001
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5.2.8	<ol style="list-style-type: none"> <li>1. Visual and Dimension check</li> <li>2. Proof of procurement of LEDs</li> <li>3. Safety tests <ol style="list-style-type: none"> <li>a) Marking</li> <li>b) Construction</li> <li>c) Provision for Earthing</li> <li>d) External and Internal wiring</li> <li>e) Protection against electrical shock</li> <li>f) Endurance and Thermal</li> <li>g) Insulation resistance &amp; electrical strength</li> <li>h) Resistance to heat fire &amp; tracking</li> <li>i) Resistance to Humidity</li> </ol> </li> <li>4. Fire Retardant test</li> <li>5. Performance tests (electrical, Photometric color and Life)</li> <li>6. Burn-in Test</li> <li>7. Power Cycling</li> <li>8. Temperature rise test</li> <li>9. Emission Tests <ol style="list-style-type: none"> <li>a) Radiated &amp; conducted emission</li> <li>b) Harmonics &amp; flickers</li> </ol> </li> <li>10. Immunity tests</li> </ol>	
5.2.9	<p>In addition, following test reports to be submitted for LED chip/LED luminaire:</p> <ol style="list-style-type: none"> <li>a) LED parameters like Lumen per watt, CRI, Beam angle from manufacturer</li> <li>b) LM 80/IS: 16105 report.</li> <li>c) LM 79/IS: 16106 report.</li> </ol>	



TECHNICAL SPECIFICATION  
LIGHTING FIXTURES, LAMPS & MISC.  
ITEMS  
2X660MW TALCHER THERMAL POWER  
PROJECT, STAGE-III

PE-TS-497-558-E001

Issue No: 01


Rev. No. 00

Date : 20.04.2024

**TECHNICAL DATA - PART - B (SUPPLIER DATA TO BE FURNISHED ALONG WITH THE OFFER)**

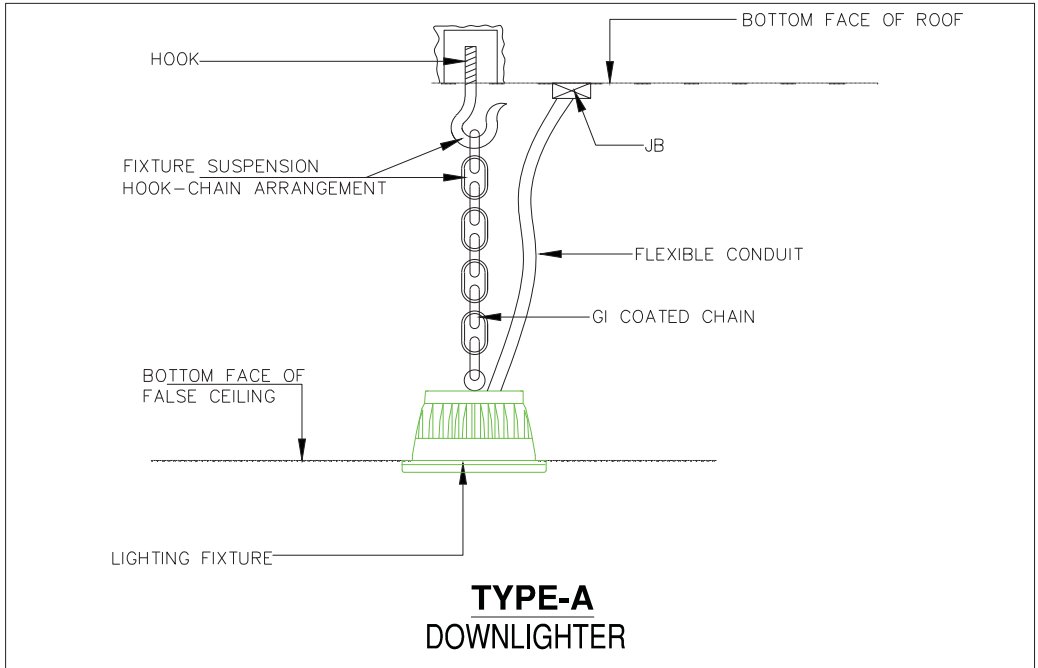
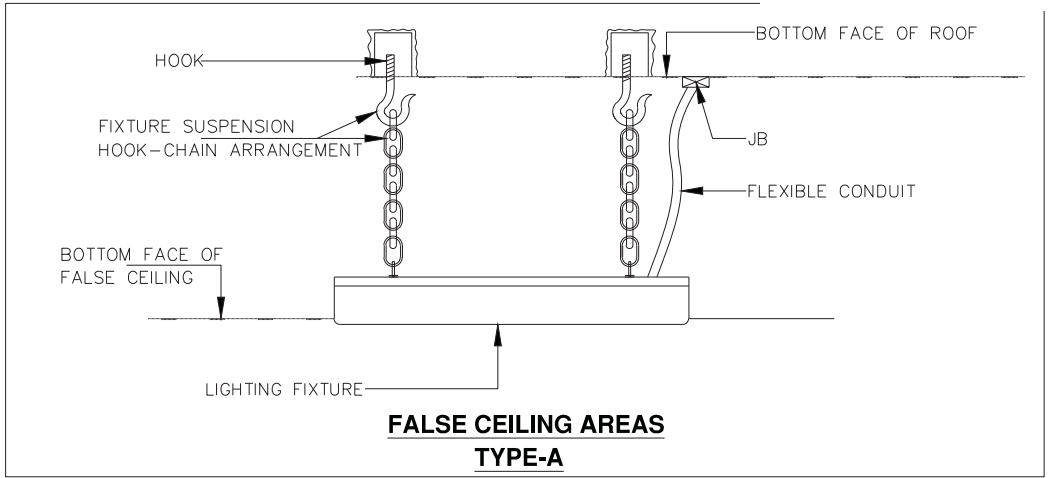
S. No.	DESCRIPTION	LUMINAIRE MAKE AND MODEL	MEASURED ELECTRICAL INPUT POWER	TOTAL LUMINOUS FLUX (LUMEN) OF LUMINAIRE -
	MAIN SUPPLY ITEMS		(W) MAX. VALUE	(LUMEN) MIN. VALUE
1	Lighting Luminaires			
1.1	Luminaire Type FC06 (LED)			
1.2	Luminaire Type FC07 (LED)-DC			
1.3	Luminaire Type FC30 (LED)			
1.4	Luminaire Type FC33 (LED) -DC			
1.5	Luminaire Type FC81 (LED)			
1.6	Luminaire Type SF63 (LED)			
1.7	Luminaire Type SF66 (LED)			
1.8	Luminaire Type SB11 (LED)			
1.9	Luminaire Type SB02 (LED)			
1.10	Luminaire Type SB03 (LED)			
1.11	Luminaire Type SS62 (LED)			
1.12	Luminaire Type SS63 (LED)			
1.13	Luminaire Type SW41 (LED)			
1.14	Luminaire Type SW42 (LED)			
1.15	Luminaire Type FC34 (LED)			
1.16	Luminaire Type MW96 (LED)			
1.17	Luminaire Type Downlighter (LED)			
1.18	Luminaire Type Dimmable Downlighter (LED)			

NOTE: THE ABOVE LIST IS INDICATIVE, ALL LIGHTING FIXTURES AS PER INDENT BOQ SHALL BE INCLUDED IN THE DATA SHEET-B

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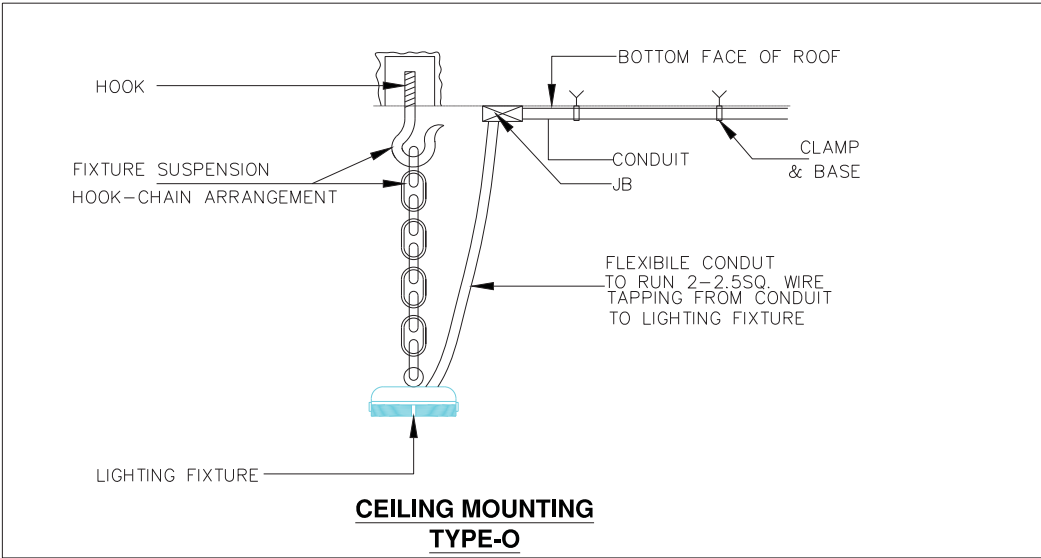
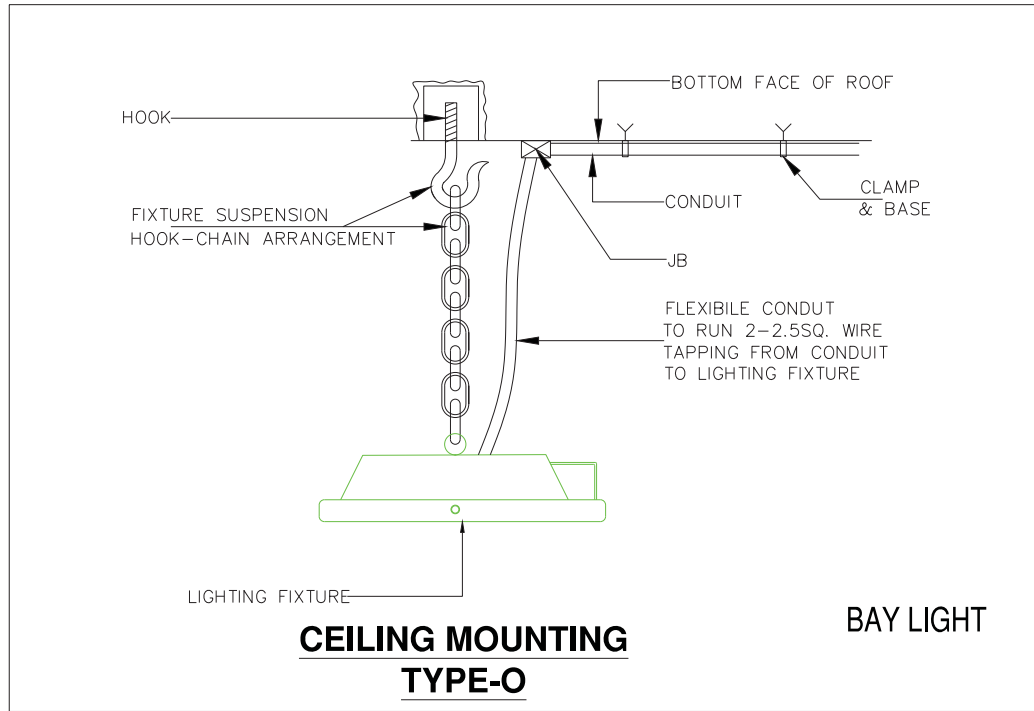
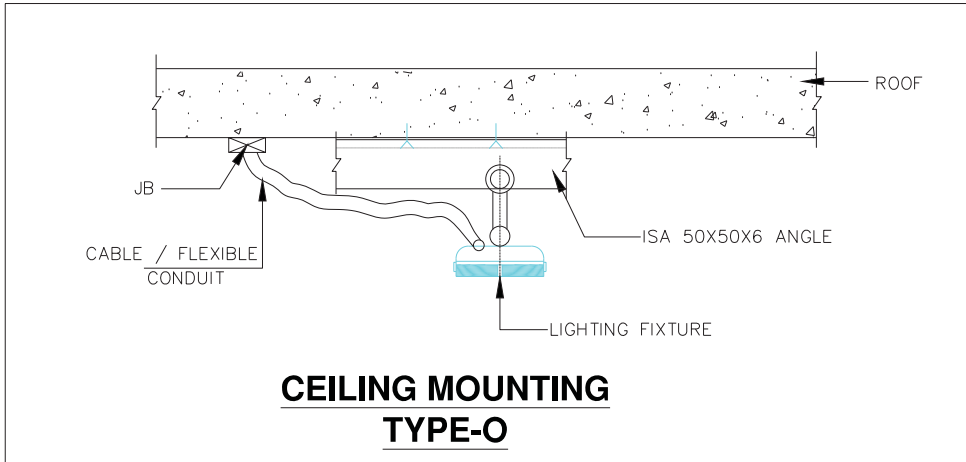
## COMPLIANCE DRAWING

ANNEXURE-1 TYPICAL MOUNTING ARRANGEMENT

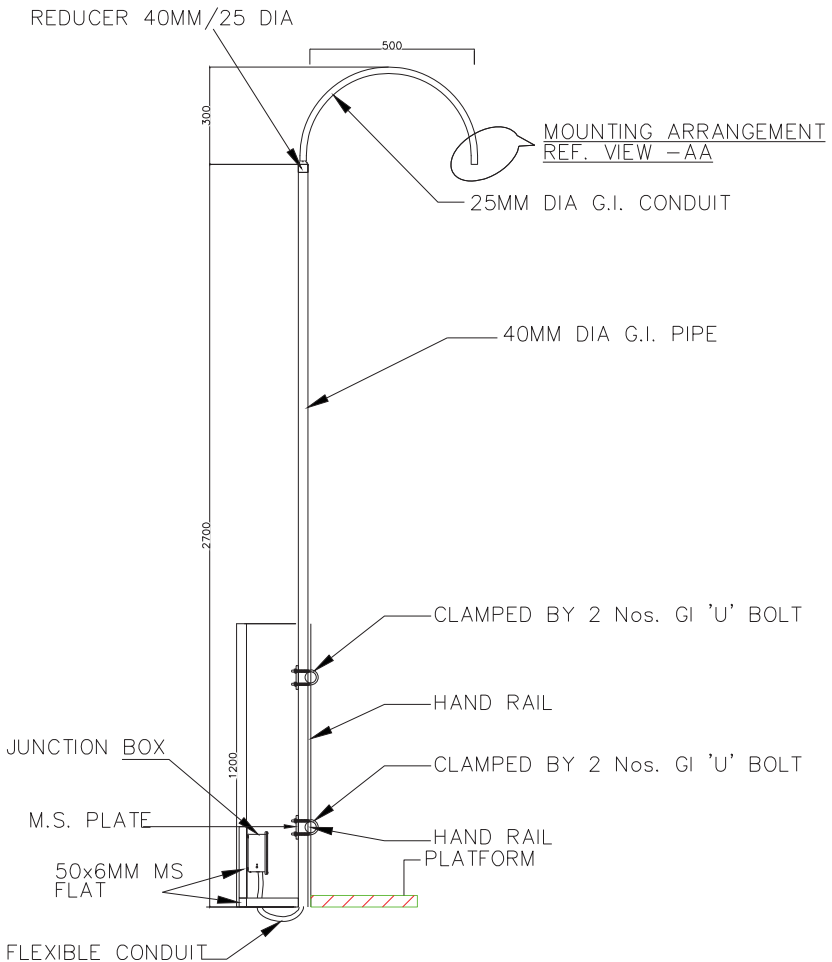


This is a typical mounting arrangement dwgs/ details for guidance only. Final Mounting arrangement dwg shall be made by the successful bidder during detailed Engineering. It is to be noted that GI Conduit 20mm Dia and Flexible PVC Coated Conduit, Structural Steel shall be provided by BHEL. Balance all other accessories clamps/ chains/ clips/ steel rope/ pins etc required for mounting as per typical mounting arrangement for their fixtures shall be part of fixtures only and shall be provided by the Bidders.

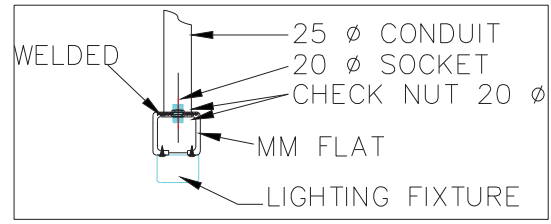
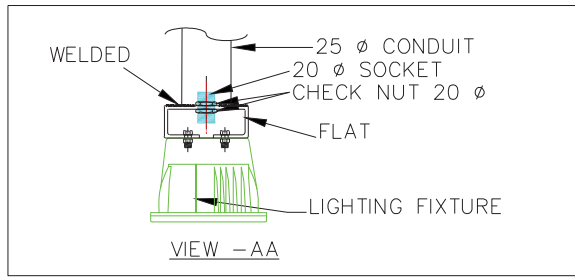
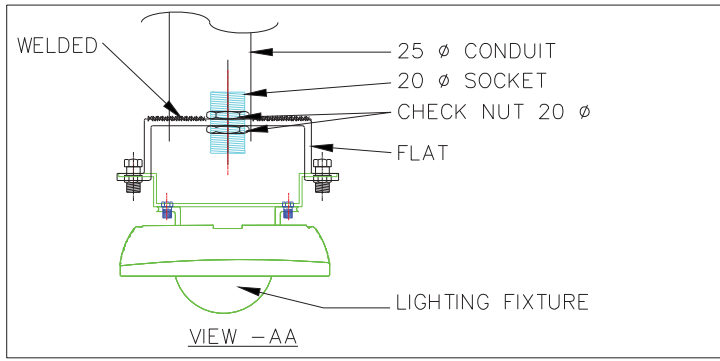
2. In Lighting layout, Mounting arrangement also shown. If any Discrepancy found on both documents than Consult with Design incharge/Site Incharge.
3. Quantity and Material shown in drawings are indicative only and may be change or vary as per site requirement.
4. If any new type of mounting required at site than we can optimized or change the arrangement with prior inform to BHEL site incharge.
5. All structural steel parts/supporting parts shall be hot dip galvanized as per BOQ/TS.



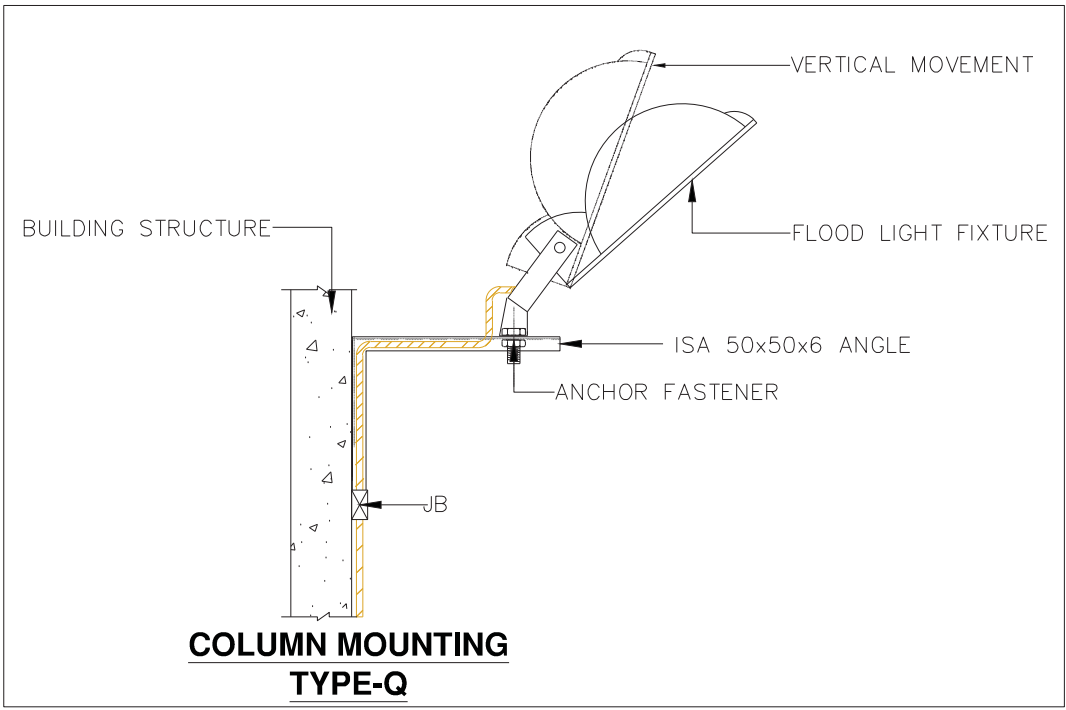
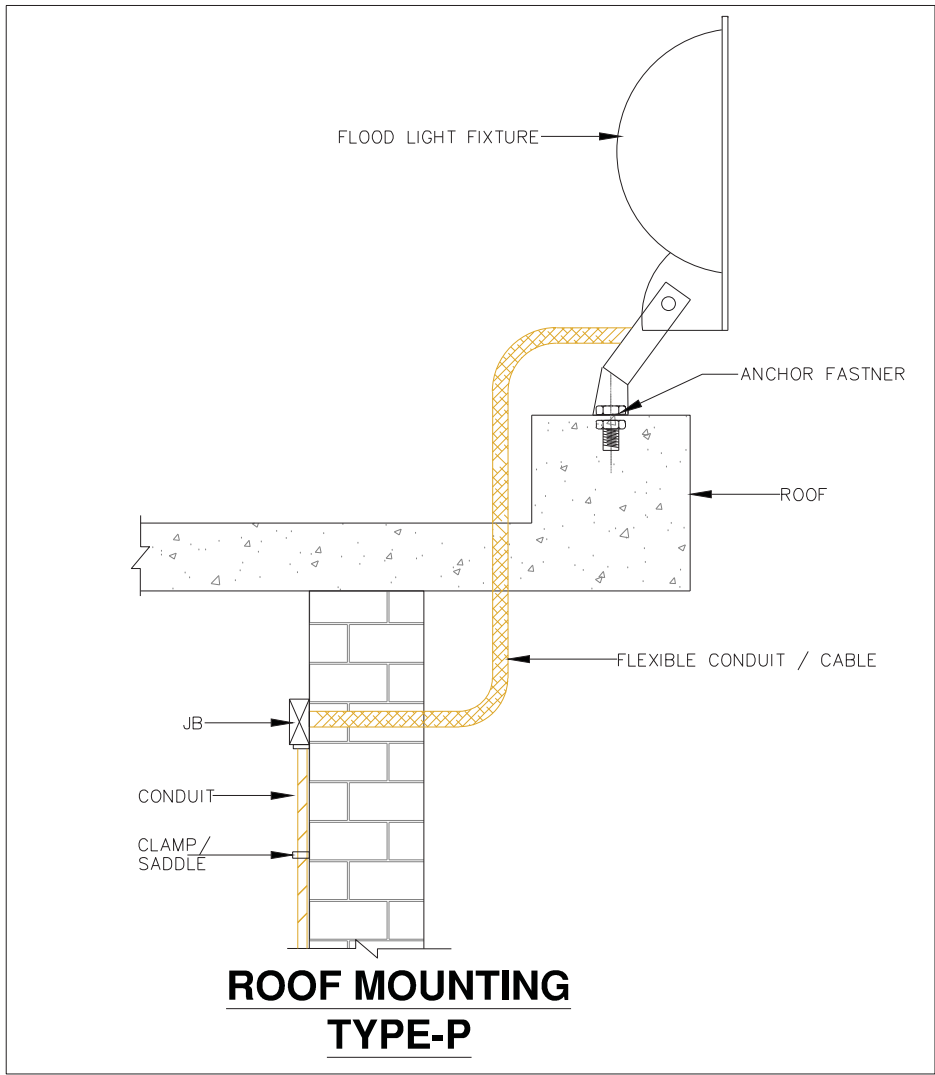
- General Notes:
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  2. In Lighting layout, Mounting arrangement also shown. If any Discrepancy found on both documents than Consult with Design incharge/Site Incharge.
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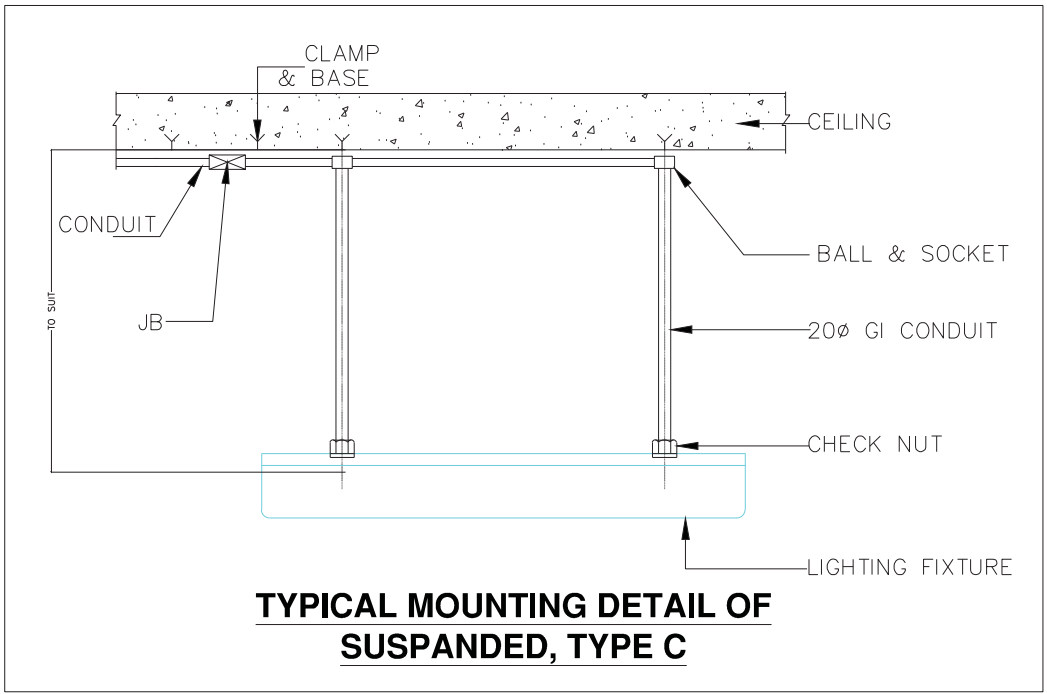
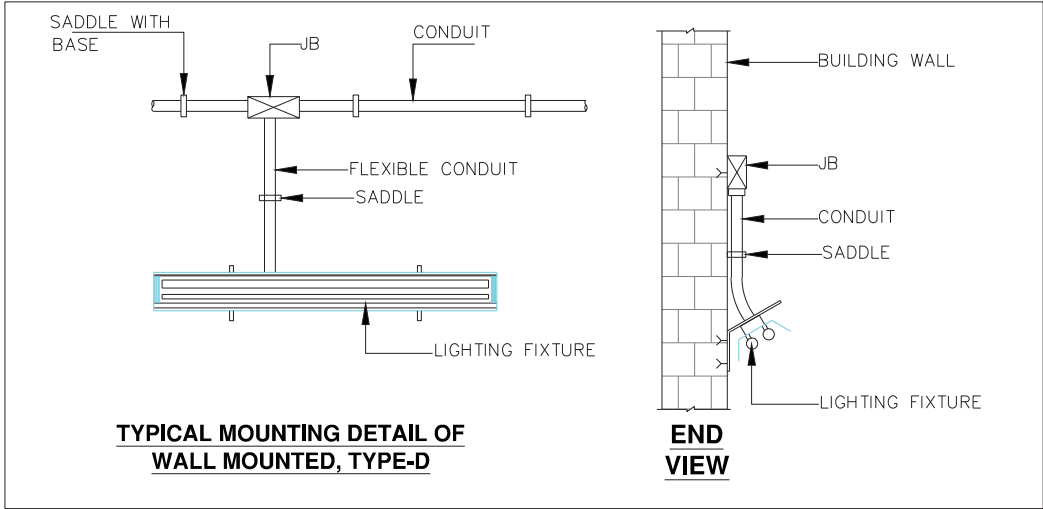
# HAND RAIL MOUNTING TYPE-I



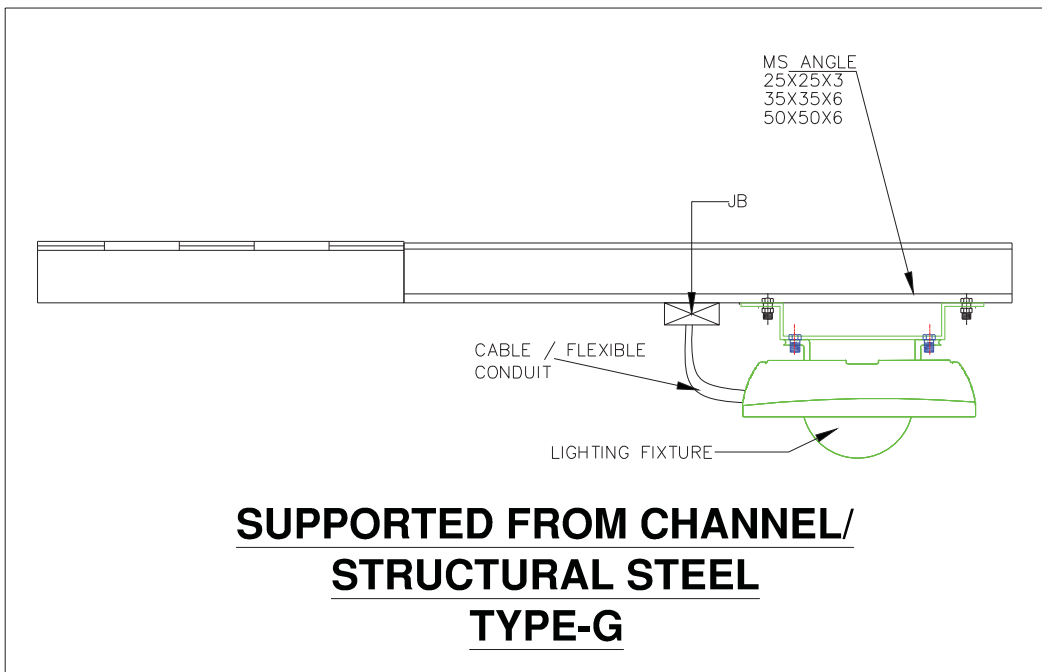
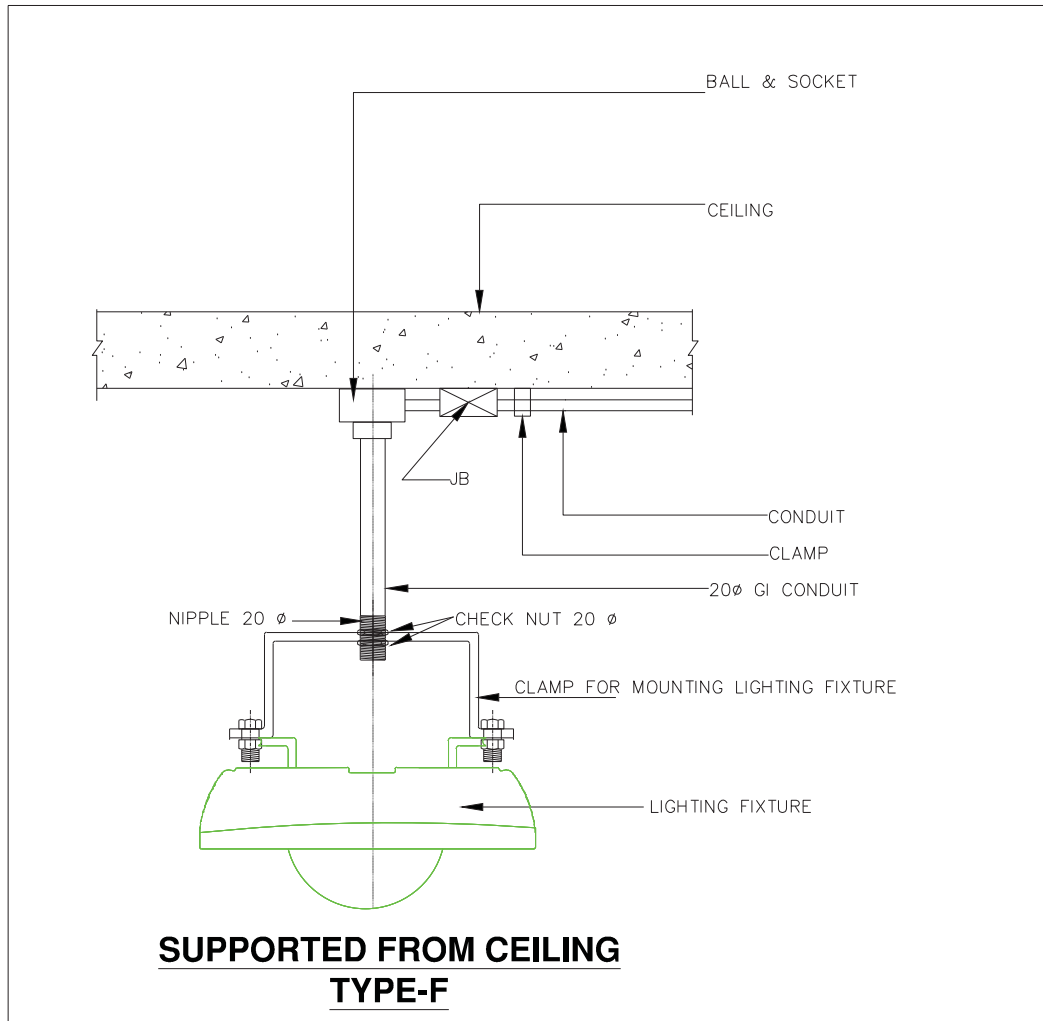
- General Notes:
1. Mounting arrangement can be changed/ modified on site as per site requirements.
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  3. Quantity and Material shown in drawings are indicative only and may be change or vary as per site requirement.
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  5. All structural steel parts/supporting parts shall be hot dip galvanized as per BOQ/TS.



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  5. All structural steel parts/supporting parts shall be hot dip galvanized as per BOQ/TS.

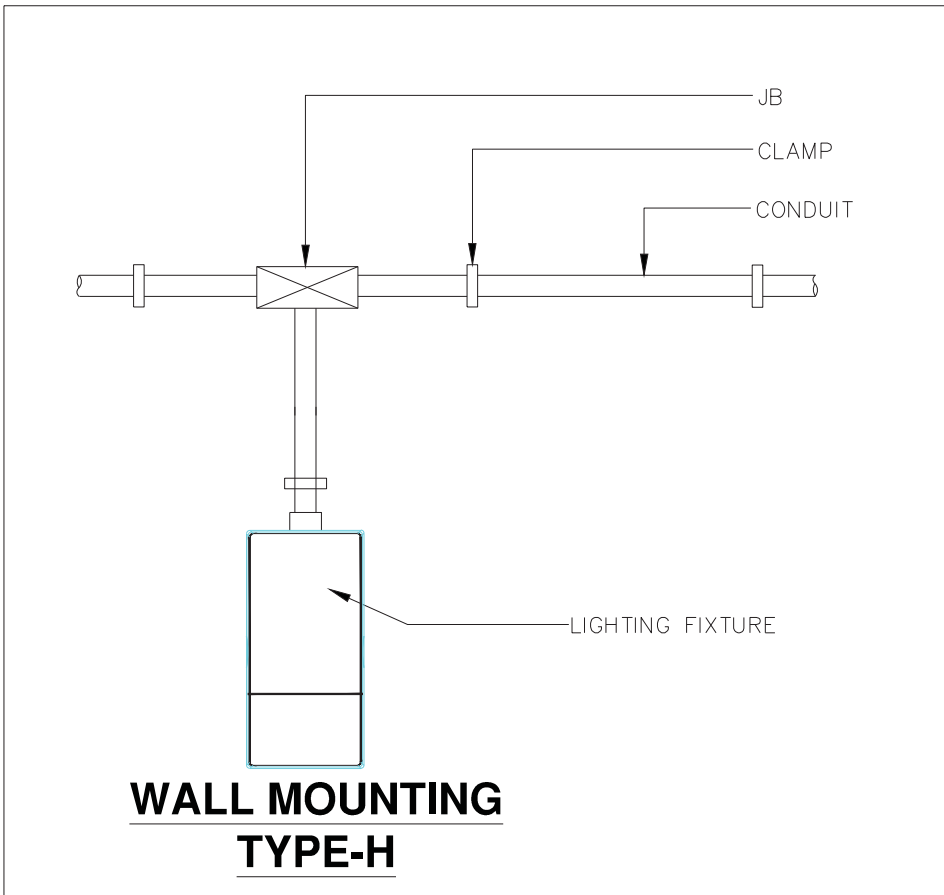
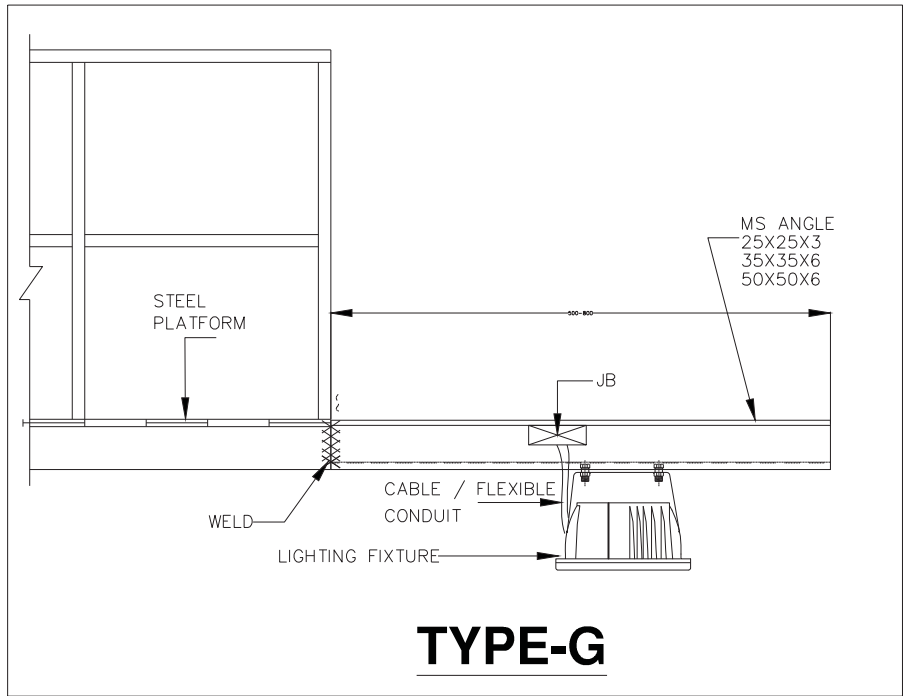


- General Notes:
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  3. Quantity and Material shown in drawings are indicative only and may be change or vary as per site requirement.
  4. If any new type of mounting required at site than we can optimized or change the arrangement with prior inform to BHEL site incharge.
  5. All structural steel parts/supporting parts shall be hot dip galvanized as per BOQ/TS.

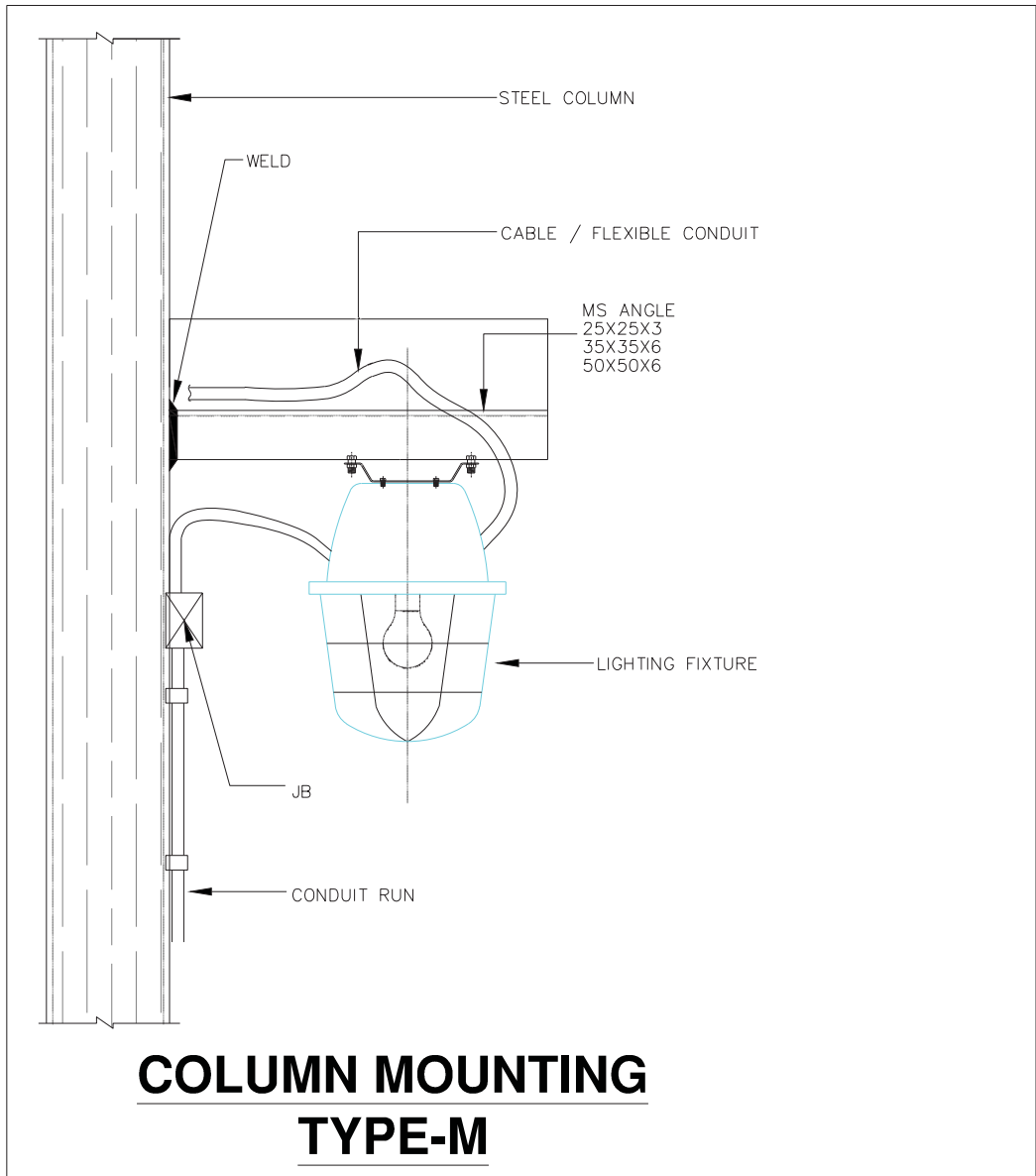


General Notes:

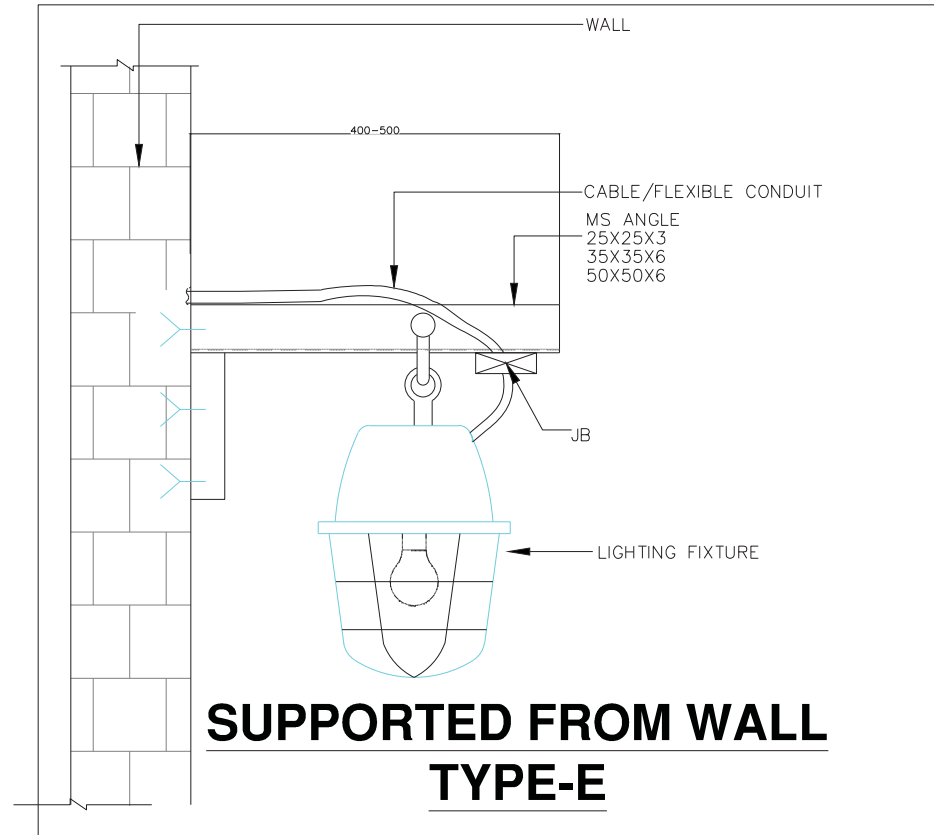
1. Mounting arrangement can be changed/ modified on site as per site requirements.
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3. Quantity and Material shown in drawings are indicative only and may be change or vary as per site requirement.
4. If any new type of mounting required at site than we can optimized or change the arrangement with prior inform to BHEL site incharge.
5. All structural steel parts/supporting parts shall be hot dip galvanized as per BOQ/TS.



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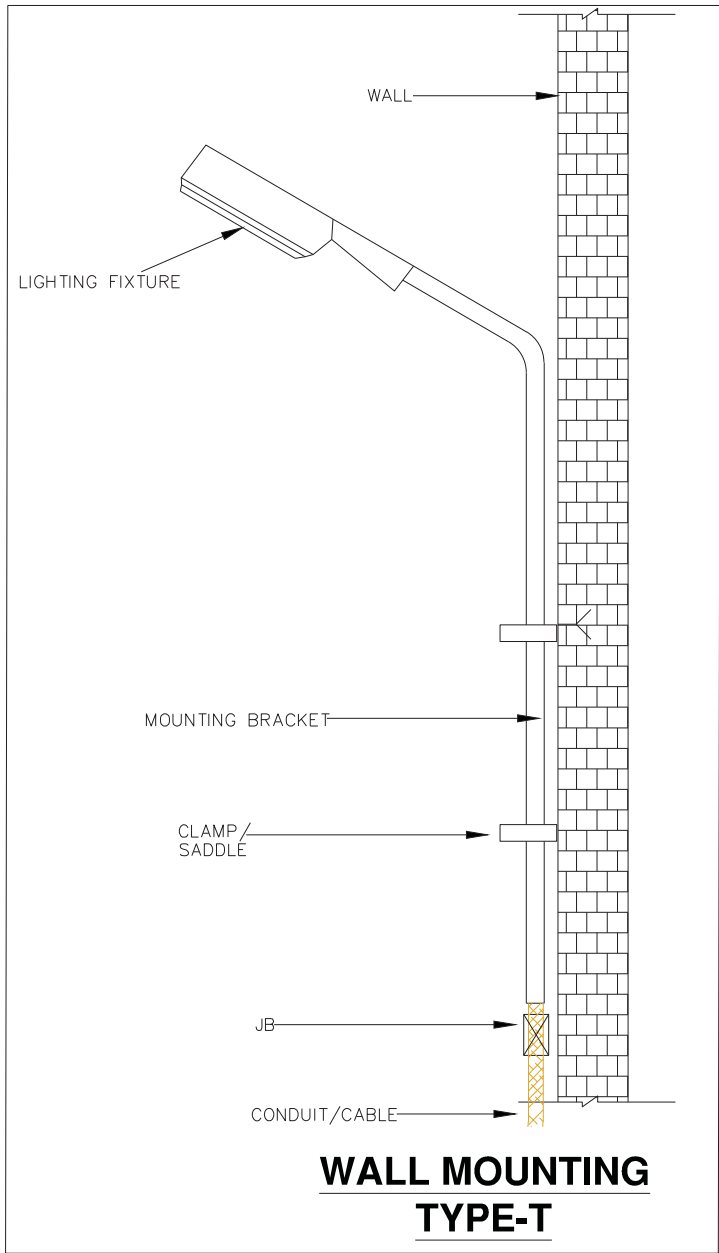
**COLUMN MOUNTING  
TYPE-M**



**SUPPORTED FROM WALL  
TYPE-E**

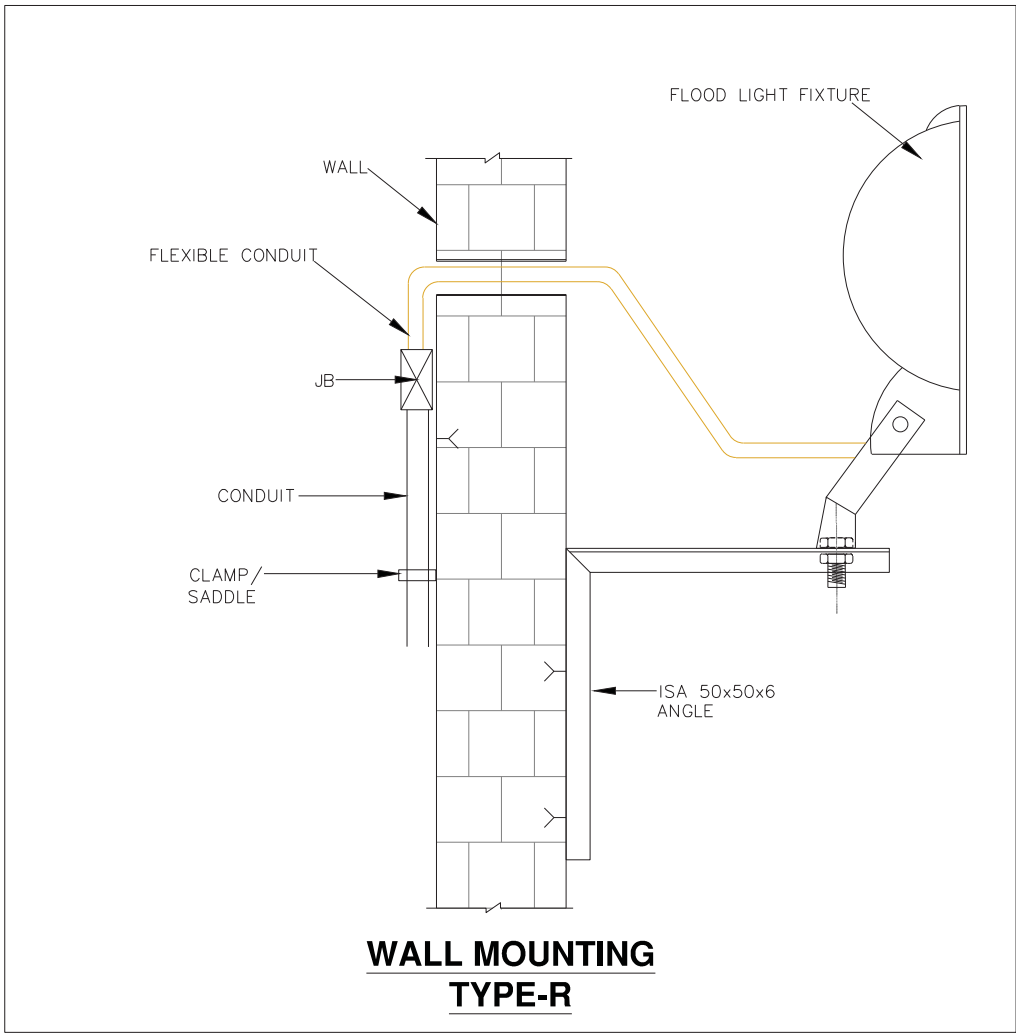
General Notes:

1. Mounting arrangement can be changed/ modified on site as per site requirements.
2. In Lighting layout, Mounting arrangement also shown. If any Discrepancy found on both documents than Consult with Design incharge/Site Incharge.
3. Quantity and Material shown in drawings are indicative only and may be change or vary as per site requirement.
4. If any new type of mounting required at site than we can optimized or change the arrangement with prior inform to BHEL site incharge.
5. All structural steel parts/supporting parts shall be hot dip galvanized as per BOQ/TS.



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4. If any new type of mounting required at site than we can optimized or change the arrangement with prior inform to BHEL site incharge.
5. All structural steel parts/supporting parts shall be hot dip galvanized as per BQQ/TS.



**TECHNICAL SPECIFICATION  
LIGHTING FIXTURES, LAMPS & MISC. ITEMS  
2X660MW TALCHER THERMAL POWER  
PROJECT, STAGE-III**

PE-TS-497-558-E001

Issue No: 01


Rev. No. 00


Date : 20.04.2024

## PERFORMANCE GUARANTEES TO BE DEMONSTRATED AT SITE

### AVERAGE LUX LEVEL & TYPE OF LIGHTING FIXTURES:

S. NO.	LOCATION	AVERAGE LUX LEVEL	TYPE OF FIXTURE
1	Turbine Hall operating floor	200	High/medium bay LED luminaire
2	Turbine Hall other platforms	200	LED high/medium bay, LED well glass fixtures
3	Switchgear rooms, Charger, Rectifier room	200	Industrial type LED luminaire
4	Control room, computer room, control equipment room	350	LED luminaire equivalent to Mirror optics with anti-glare features
5	Offices, conference rooms etc.	300	Decorative mirror optics type LED luminaire or LED down-lighter
6	Battery rooms	100	Totally enclosed corrosion proof LED luminaire
7	Transformer Yard	20 (general) , 50(on equipment)	LED luminaire
8	Boiler Platforms	100	LED well glass fixtures
9	Compressor room, pump house etc.	150	LED medium bay/ Industrial type LED luminaire
10	Fuel oil pump house	150	Flame proof fluorescent fixtures suitable for division-2 hazardous area
11	Cable galleries/vault	50	Industrial type LED Luminaire
12	Street lighting- Primary roads Secondary roads	20 10	LED street lights
13	Outdoor storage handling and unloading area	20	LED Luminaire
14	Cement stores	150	Industrial dust proof type LED luminaire
15	Chemical stores/ House	150	Corrosion proof LED luminaire

		<b>TECHNICAL SPECIFICATION</b> <b>LIGHTING FIXTURES, LAMPS &amp; MISC. ITEMS</b> <b>2X660MW TALCHER THERMAL POWER</b> <b>PROJECT, STAGE-III</b>		PE-TS-497-558-E001
				Issue No: 01
				Rev. No. 00
				Date : 20.04.2024
16	Permanent stores	150	LED high/medium bay/ Industrial trough LED luminaire	
17	Workshop building	150	LED high/medium bay/ Industrial trough LED luminaire	
18	Laboratory : General Analysis area	150 300	Corrosion proof LED luminaire	
19	Garage/Car parking	50	Industrial type LED luminaire	
20	Facility building, canteen etc	150	Industrial type LED luminaire	
21	Hydrogen Plant Building	150	Explosion proof HPMV/ Fluorescent fittings suitable for class-I and Division-IIC	
22	Corridors, Walkways	50	LED luminaire	
23	Building Periphery Lighting	10	LED Street Light fixture/ LED luminaire	
24	Security Lighting along Boundary	10	LED Street Light fixture/ LED luminaire	
25	ESP platform	150	LED well glass fixtures	
26	Gate complex/ Time office	150	LED luminaire	
27	DM plant, water treatment plant, CW pump house, Raw Water PH, Fire Water PH	150	LED high/ medium bay/ Industrial trough LED, Luminaire	
<b>DC LIGHTING</b>				
S. NO.	LOCATION	AVERAGE LUX LEVEL	TYPE OF FIXTURE	
1	Unit control room	100	LED luminaire	
2	Control equipment room	100	LED luminaire	
3	Strategic control points (in TG building & Boiler area, Switchgear room, SWAS, Battery room, UPS area, TG hall, Lube Oil Room etc.)	20 (only within 10m of these fixtures)	LED luminaire	
4	Cable Vault & galleries	1 fixture at every 20 mtr spacing along walkways	LED luminaire	

	<b>TECHNICAL SPECIFICATION</b> <b>LIGHTING FIXTURES, LAMPS &amp; MISC. ITEMS</b> <b>2X660MW TALCHER THERMAL POWER</b> <b>PROJECT, STAGE-III</b>		PE-TS-497-558-E001
			Issue No: 01
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			Date : 20.04.2024
5	Boiler Stair case	1 fixture at every 20 mtr spacing along walkways	LED luminaire
6	Exit/Entry of main plant building	1 fixture	LED luminaire
7	Fire Exit Sign	1 fixture	LED luminaire



**TECHNICAL SPECIFICATION  
LIGHTING FIXTURES, LAMPS & MISC. ITEMS  
2X660MW TALCHER THERMAL POWER  
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REQUIREMENT OF LIGHTING AND LV P[OWER SERVICES OF VARIOUS AREAS AS APPLICABLE FOR THE PROJECT ARE TO BE SPECIFIED HERE/ sample sheet is shown below:

<b>LIGHTING &amp; LV POWER SERVICES IN DIFFERENT AREAS</b>								
S. No.	AREA	ACN	ACE	DCE	6/16A Socket	20A Socket	63A Socket	EL U \$
1	TG building (turbine hall, switchgear room etc.)	Y (80%)	Y (20%)	Y	Y *	Y	Y	-
2	Boiler platforms & boiler area	Y (80%)	Y (20%)	Y	-	Y	Y	-
3	DG area/ room	Y (80%)	Y (20%)	-	-	Y	Y	-
4	Compressor room	Y (80%)	Y (20%)	-	Y *	Y	-	Y
5	ESP control room	Y (80%)	Y (20%)	-	Y *	Y	-	Y
6	Unit control room	Y (70%)	Y (30%)	Y	Y *	Y	-	-
7	Battery Room	Y (80%)	Y (20%)	-	-	Y	-	-
8	Cable spreader room/ vault	Y (80%)	Y (20%)	Y	-	-	Y	-
9	Hydrogen plant	Y (100%)	-	-	-	-	-	-
10	Chemical house	Y (100%)	-	-	-	Y	Y	Y
11	Fuel Oil Pump House	Y (100%)	-	-	Y *	Y	Y	Y
12	Water Treatment Plant	Y (100%)	-	-	-	-	-	Y
13	CT Switchgear Room	Y (100%)	-	-	-	Y	-	Y
14	Workshop	Y (100%)	-	-	-	-	Y	Y
15	Service Building	Y (100%)	-	-	Y *	-	-	-
16	Area Lighting	Y (100%)	-	-	-	-	-	-
17	Street Lighting	Y (100%)	-	-	-	-	-	-
18	Transformer Yard and Storage Yard	Y (100%)	-	-	-	-	Y	-
<b>LEGEN</b>	ACN:	AC Normal Lighting						
<b>D:</b>	ACE:	AC Emergency Lighting						

	<b>TECHNICAL SPECIFICATION</b> <b>LIGHTING FIXTURES, LAMPS &amp; MISC. ITEMS</b> <b>2X660MW TALCHER THERMAL POWER</b> <b>PROJECT, STAGE-III</b>		PE-TS-497-558-E001
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	<b>DC:</b>	<b>DC Lighting (220V DC)</b>
	Y:	YES
	Y*:	YES, Only in control room, offices & toilets
	Y#:	At strategic location point
	§:	Emergency Lighting Unit (ELU) & 6/16A Switch socket for ELU



TECHNICAL SPECIFICATION  
LIGHTING FIXTURES, LAMPS & MISC. ITEMS  
2X660MW TALCHER THERMAL POWER  
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Issue No: 01

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Date : 20.04.2024

## QUALITY PLAN



ITEM : LIGHTING FIXTURES (Conventional and LED type)

STANDARD QUALITY PLAN

QP.No:000999-QOE-S-#62

REVIEWED BY

APPROVED BY

Rev No.: 01

SWAPNESWAR MISHRA

V.K.M.Joshi

Date: 02/11/15

VIKRAM TALWAR

REMARKS

VALID UPTO: 01/11/18

SUNIL MALANI

REMARKS

Q	COMPONENT & OPERATIONS	CHARACTERISTICS / INSTRUMENTS	CLASS OF CHECK	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMA OF RECORD				REMARKS
					Mnfr Std	Mnfr Std			P	W	V	N	
1	2	3	4	5	6M	6CN	7	8	9	10	11	12	
LED type Lighting fixture													
Bought out items / in-process checks													
	LED Chip	LED chip efficacy	Major	Visual	Mnfr Std	Mnfr Std	NTPC Spec, Appd. Data sheet/ LM 80 report	NTPC Spec/ Appd Data sheet	LM 80 report	✓	✓	✓	At the time of final inspection
		LED chip CRI and CCT	Major	Visual	Mnfr Std	Mnfr Std	NTPC Spec, Appd. Data sheet/ LM 81 report	NTPC Spec/ Appd Data sheet	LM 80 report	✓	✓	✓	At the time of final inspection
		Reported TM21 (L80) lifetime of LED chip	Major	Visual	Mnfr Std	Mnfr Std	NTPC Spec, Appd. Data sheet/ LM 81 report	NTPC Spec/ Appd Data sheet	LM 80 report	✓	✓	✓	At the time of final inspection
1	LED Driver	a Compatibility with LED module/chip, controls & protection features as per NTPC spec	Major	Visual	-	-	NTPC spec requirements	Certificate of compliance by LED driver manufacturer / lighting fixture supplier that driver meets all NTPC specification requirements	Certificate of compliance	✓	✓	✓	
		b THD and pf check	Major	Electrical	Mnfr std.	-	NTPC specification	THD < 10% and pf >= 0.9	Inspection report	✓	-	-	P/V * - means test will be performed either by lighting fixture supplier or their sub-vendor and Verified by lighting fixture supplier
	Castings	Freedom from defects	Major	Visual	Mnfr std.	-	NTPC specification requirements	Castings shall be free from any defects such as blow holes, surface blisters, cracks and cavities etc.	Inspection report	✓	-	-	P/V * - means test will be performed either by lighting fixture supplier or their sub-vendor and Verified by lighting fixture supplier
	Sheet metal forming and fabrication	Freedom from defects	Major	Visual	Mnfr std.	-	NTPC specification requirements	sheet metal fabrication / forming etc should be as per manufacturer standards and good engg practices	Inspection report	✓	-	-	P/V * - means test will be performed either by lighting fixture supplier or their sub-vendor and Verified by lighting fixture supplier
	Pre-treatment and powder coating	Pre-treatment process checks, Powder coating finish, thickness, uniformity of coating and adhesion	major	Visual, chemical & mech	Mnfr std.	-	Mnfr standard, NTPC specification requirements	Nominal coating thickness 50 microns or more	Inspection report	✓	-	-	P/V * - means test will be performed either by lighting fixture supplier or their sub-vendor and Verified by lighting fixture supplier

LEGEND: \* RECORDS, IDENTIFIED WITH "TICK" (✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. \*\* M: MANUFACTURER/SUB-SUPPLIER; C: MAIN SUPPLIER, N: NTPC P: PERFORM W: WITNESS AND V: VERIFICATION. CHP: CUSTOMER HOLD POINT BY NTPC SHALL BE IDENTIFIED UNDER AGENCY COLUMN "N" AS "W".

Format No.: QS-01-QAI-P-10/F3-R0

Engg. Div./QA&I



ITEM : LIGHTING FIXTURES (Conventional and LED type)

STANDARD QUALITY PLAN

QP.NO:0008-999-QCE-S-062

REVIEWED BY

APPROVED BY

Rev No.: 00

SWA/PNESWAR MISHRA

Date: 02/10/15

VIKRAM TALWAR

VALID UPTO: 01/11/18

SUNIL MALANI



Sl No	COMPONENT & OPERATIONS	CHARACTERISTICS / INSTRUMENTS	CLASS OF CHECK	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	REMARKS				
					M	C/N				M	C	N		
B	Acceptance Tests on LED Lighting fixture	a) Details of lot offered and Certificate of compliance that lighting fixture supplier has inspected the offered lot as per their own standard	Major	Visual	-	-	lighting fixture supplier to submit the details of lot offered for NTPC inspection (Type of lighting fixtures, their batch number, sub-vendor name, quantity)	-	List		P	V	V	The list may be used by NTPC for sample selection
		b) LED chip make	Major	Visual	-	-	NTPC accepted type test reports (LM80/LM79) report	Certificate of compliance	Certificate of compliance		V	V	V	
		c) Constructional features including: Internal wiring, terminal block, earthing terminal, safety chain (if applicable)	Major	Visual	1 sample per type	1 sample per type	NTPC specification and NTPC approved data sheet/drg.	NTPC specification and approved data sheet/drg.	Inspection report		P	W	W	
		e) Resistance to moisture test in case of lighting fixtures having IP X4 and above rating	Major	Mechanical	1 sample per type	1 sample per type	NTPC approved data Sheet	IS 10122 Part I	Inspection report		P	W	W	
		f) Resistance to dust (applicable if IP5X and above)	Major	optical	Mnfr std.	Mnfr std.	NTPC accepted type test reports	Certificate of compliance	Certificate of compliance		P/V	V	V	P/V * - means test will be performed either by lighting fixture supplier or their sub-vendor and Verified by lighting fixture supplier
		f) Photometry check	Major	optical	Mnfr std.	Mnfr std.	NTPC accepted type test reports, LM 79, IS 16106, IS 16107	Certificate of compliance for the batch that offered lighting fixture LOR and lighting fixture efficacy is not be less than 90% (refer IS 16107) with reference to type test reports	Certificate of compliance		P/V	V	V	P/V * - means test will be performed either by lighting fixture supplier or their sub-vendor and Verified by lighting fixture supplier

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Format No.: QS-01-QAI-P-10/F3-R0

Engg. Dir./QA&I



ITEM : LIGHTING FIXTURES (Conventional and LED type)

STANDARD QUALITY PLAN

QP.No:000-999-QOE-S-062

REVIEWED BY

APPROVED BY

Rev No: 00

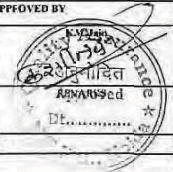
SWANESWAR MSHRA

Date: 02/11/15

VIKRAM TALWAR

VALID UPTO: 01/11/18

SUNIL MALANI



Sl No	COMPONENT & OPERATIONS	CHARACTERISTICS / INSTRUMENTS	CLASS OF CHECK	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE CRITERIA	FORMAT OF RECORD	RECORDS			
					6.M	6.ON				M	C	N	
		g	Dimensions	Major	Visual	1 sample per type	1 sample per type	NTPC specification and approved data sheet/drg.	NTPC specification and approved data sheet/drg.	Inspection report	P	W	W
		i	LED driver: THD and pf check	Major	Electrical	1 sample per type	1 sample per type	NTPC specification	THD < 10% and pf >= 0.9	Inspection report	P	W	W
		j	LED driver: Precision current control check	Major	Electrical	1 sample per type	1 sample per type	NTPC specification	NTPC specification and NTPC approved data sheet	Inspection report	P	W	W
		k	LED driver: Open circuit protection simulation check	Major	Electrical	1 sample per type	1 sample per type	NTPC specification	NTPC specification and NTPC approved data sheet	Inspection report	P	W	W
		l	LED driver: Short circuit protection simulation check	Major	Electrical	1 sample per type	1 sample per type	NTPC specification	NTPC specification and NTPC approved data sheet	Inspection report	P	W	W
		m	LED driver: Over temperature protection simulation check	Major	Electrical	1 sample per type	1 sample per type	NTPC specification	NTPC specification and NTPC approved data sheet	Inspection report	P	W	W
		n	LED driver: Overload protection simulation check	Major	Electrical	1 sample per type	1 sample per type	NTPC specification	NTPC specification and NTPC approved data sheet	Inspection report	P	W	W
		o	LED driver: Surge protection compliance check	Major	Electrical	-	-	NTPC specification	Certificate of compliance that surge protection is provided	Certificate of compliance	V	V	V

Note: Packing shall be witnessed as per Annexure-1 to Quality Plan

LEGEND: \* RECORDS, INDENTIFIED WITH "TICK" (✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. \*\* M: MANUFACTURER/ SUB-SUPPLIER; C: MAIN SUPPLIER, N: NTPC  
 P: PERFORM W: WITNESS AND V: VERIFICATION. CHP: CUSTOMER HOLD POINT BY NTPC SHALL BE IDENTIFIED UNDER AGENCY COLUMN "N" AS "W".

Format No.: QS-01-QAI-P-10/F3-R0

Engg. Dir./QA&I

**PACKING SPECIFICATIONS- LIGHTING FIXTURES, LAMPS & MISC. ITEMS  
ANNEXURE-I**

**PACKING**

1. The material shall be packed to ensure protection against damage during transit, storage for prolonged periods and handling.
2. Lighting Fixtures, Lamps, Receptacles, Switchboards, 24V Supply modules, 24V sockets, Junction Boxes, Exit signs shall be clean and dry prior to packaging.
3. All items specified at sl. No.2 above shall be supplied in packed cartons. The tapes used for packing shall not bleed, leave residue, or damage the item when removed.
4. Fixtures & other lighting material shall be wrapped in weather proof material such as polythene sheets, air bubble sheets/ thermocol etc. The lighting fixtures shall be placed in a corrugated paperboard/ fibreboard container/ mono carton.
5. The mono cartons shall be wrapped or bagged or tied in place in master cartons. The master carton shall be taped and then wrapped with cushioning material.
6. The dimensions of cartons shall be as per manufacturer's recommendations.
7. For items like step ladder, wheel mounted ladder and flexible conduits, packing shall be as per manufacturer standard.

Note: In case Manufacturer has a different packing standard which is **equivalent or better** same to be submitted for approval during contract stage.



TECHNICAL SPECIFICATION  
LIGHTING FIXTURES, LAMPS & MISC. ITEMS  
2X660MW TALCHER THERMAL POWER  
PROJECT, STAGE-III

PE-TS-497-558-E001

Issue No: 01

Rev. No. 00

Date : 20.04.2024

## SUB VENDOR LIST

**SUB-VENDOR DIRECTORY**

ITEM CODE	ITEM/SERVICE DESCRIPTION	SL NO.	VENDOR CODE	VENDOR NAME	ADDRESS	PHONE	REMARKS
ES11	CABLE GLANDS	1	E1201	ALLIED TRADERS & EXPORTERS	C-124 A, SECTOR-2, NOIDA -201 301, UTTAR PRADESH, INDIA	Mr. Vijay Mohan Sood +(91)-(120)-2525694 +(91)-(120)-3052594 +(91)-(11)-23287156 vijay_mohansood@yahoo.com	
	CABLE GLANDS	2	E1017	ARUP ENGG & FOUNDRY WORKS	391/119,PRINCE ANWAR SHAH ROAD, CALCUTTA-700068	033 2473 0850	
	CABLE GLANDS	3	E1206	BALIGA LIGHTING EQPT.PVT.LTD.	63A,CP RAMASWAMY ROAD, ALWARPET,P.B.No 6910, CHENNAI-600018	44-24995505,22680990-4	
	CABLE GLANDS	4	E1036	COMMET BRASS PRODUCTS	NUTAN CHEMICAL COMPOUND, WALBHAT ROAD, GOREGAON, MUMBAI-400063	91-022-26852961/62/63 comet@vsnl.net	
	CABLE GLANDS	5	DW08	DOWELLS	M/S. DOWELLS ELECTRICALS 47/47A, SATGURU INDUSTRIAL ESTATE. OFF AAREY ROAD, GOREGOAN (EAST). MUMBAI 400 063.	CEO : Mr. Jayantibhai S. Patel TEL: 022-32504770./022-29270876/ 022-29270878.	
	CABLE GLANDS	6	E1044	ELECTROMAC INDUSTRIES	27/28AF NEW EMPIRE IND.ESTT., R.KRISHNA MANDIR RD.JB NGR ,ANDHERI(E),MUMBAI-400059	91-22-28324829 / 66919034 devang@electromacglands.com	
	CABLE GLANDS	7	I01	INCAB	HARE STREET,KOLKATA,WEST BENGAL-700001	91-33-2480161/62/63/64 Fax : 91-33-2485766	
ES12	CABLE LUGS	1	E1040	DOWELLS	M/S. DOWELLS ELECTRICALS 47/47A, SATGURU INDUSTRIAL ESTATE. OFF AAREY ROAD, GOREGOAN (EAST).	CEO : Mr. Jayantibhai S. Patel TEL: 022-32504770./022-29270876/ 033 2282 2540	
	CABLE LUGS	2	E1149	UNIVERSAL MACHINES LTD.	4,B.B.D.BAG (EAST) 90,STEPHEN HOUSE,5TH FLR CALCUTTA-700001		
ES14	EARTH LEAKAGE CB	1	L01	L&T	32, SHIVAJI MARG, P.O. BOX- 6223, NEW DELHI-110015	011-41419554/59	
	EARTH LEAKAGE CB	2	S01	SIEMENS	RC-IN I S NR DEL AREA, JIL BUILDING, TOWER-B, PLOT NO. 78, SECTOR 18, GURGAON-122015, INDIA	0124-2842000, 9873424331 amit.bhadauria@siemens.com	
	EARTH LEAKAGE CB	3	A35	GE-POWER	KAMAK TOWER, 3RD FLOOR, PLOT NO. 12-A, TVK INDUSTRIAL ESTATE, EKKADUTHANGAL, GUINDY, CHENNAI-600032	044-49681447	
	EARTH LEAKAGE CB	4	S03	SCHNEIDER ELECTRIC INDIA PVT. LTD.	9TH FLOOR, BLDG. NO. 10, TOWER-C, DLF CYBER CITY, PH-II, GURGAON-122002	0124-3940400	
	EARTH LEAKAGE CB	5	C01	C&S ELECTRIC LTD.	222, OKHLA IND. ESTATE, PH-III, NEW DELHI-110020	011-3088 7520-29	
	EARTH LEAKAGE CB	6	A24	ABB	14, MATHURA ROAD, FARIDABAD, HARYANA-121003	0129-2567580, 09871799449	
	EARTH LEAKAGE CB	7	E1068	INDO ASIAN	B-24, PHASE - II, NOIDA - 201305, U.P.	120-3042222	
	EARTH LEAKAGE CB	8	E1088	MDS SWITCHGEAR LTD	314-317SHAH NAHAR ESTATE	011 - 25793021	
	EARTH LEAKAGE CB	9	E1120	S&S POWER SWITCHGEAR LTD.	NEW NO. 67, OLD NO. 19, DR. RANGA ROAD, MYLAPORE, CHENNAI - 600004	044 - 24988056, 044 - 24988057, 044 - 24988058	
ES21	CONTROL SWITCHES/ SELECTOR SWITCH	1	E1076	KAYCEE	KAYCEE INDUSTRIES LTD., C/O-CMS COMPUTERS LTD., 35A, REAR BLDG., KILOKARI, NEW DELHI-110014	Rajiv Sharma-9312004687	
	CONTROL SWITCHES/ SELECTOR SWITCH	2	A35	GE-POWER	KAMAK TOWER, 3RD FLOOR, PLOT NO. 12-A, TVK INDUSTRIAL ESTATE, EKKADUTHANGAL, GUINDY, CHENNAI-600032	044-49681447	
	CONTROL SWITCHES/ SELECTOR SWITCH	3	G01	ALSTOM LTD	A-7, SEC-65, NOIDA	0120-479000	
	CONTROL SWITCHES/ SELECTOR SWITCH	4	S03	SCHNEIDER ELECTRIC INDIA PVT. LTD.	9TH FLOOR, BLDG. NO. 10, TOWER-C, DLF CYBER CITY, PH-II, GURGAON-122002	0124-3940400	
	CONTROL SWITCHES/ SELECTOR SWITCH	5	SR01	M/s Shrenik & Co.	39A/3, PANCHRATNA INDUSTRIAL ESTATE, SARKHEJ-BAVLA ROAD, CHANGODAR,		
	CONTROL SWITCHES/ SELECTOR SWITCH	6	RE05	RECOM PVT. LTD.	M/S RECOM PVT. LTD.,16A , 2ND FLOOR A, WING RAJ INDUSTRIAL COMPLEX, MILITARY	Mr. Chandrashekar Kamath (MD) : 09820249503 Phone : +91 2114323665 Fax : +91 2114273482	
ES22	CONTROL TRANSFORMER/ WINDING HEATING TRANSFORMER	1	E1009	AUTOMATIC ELECTRIC LTD.	96 AB LONAVLA INDUSTRIAL ESTATE NANGARGAON, LONAVLA-410401	Phone : +91 2114323665 Fax : +91 2114273482	
	CONTROL TRANSFORMER/ WINDING HEATING TRANSFORMER	2	E1066	INDCOIL	PLOT NO. A- 150/ 151, 23RD U ROAD, WAGLE ESTATE, THANE WEST, CST RD, FRIENDS COLONY, HALLOW PUL, KURLA WEST, MUMBAI, MAHARASHTRA 400070	Phone:022 2583 8305	
	CONTROL TRANSFORMER/ WINDING HEATING TRANSFORMER	3	K18	KAPPA ELECTRICALS	KAPPA ELECTRICALS, KAPPA CONSOLIDATED PVT. LTD., 14, CART TRACK ROAD, MADUVANKARAI, CHENNAI - 600 042, INDIA.	PHONE: +91 - 44 - 22454709, 22454516, 22450794, 22450795 FAX: +91 - 44 - 22351662, 22451693 E-MAIL: mira@kappaelectricals.com sales@kappaelectricals.com	
	CONTROL TRANSFORMER/ WINDING HEATING TRANSFORMER	4	E1082	LOGICSTAT	B-160, INDUSTRIAL AREA, C BLOCK RD, OKHLA I, OKHLA INDUSTRIAL AREA, NEW DELHI, DL 110020	011 2681 0032	

**SUB-VENDOR DIRECTORY**

ITEM CODE	ITEM/SERVICE DESCRIPTION	SL NO.	VENDOR CODE	VENDOR NAME	ADDRESS	PHONE	REMARKS
	CONTROL TRANSFORMER/ WINDING HEATING TRANSFORMER	5	E1106	PRECISE ELECTRICALS	47A-49A,CHAKALA ROAD ANDHERI(E),MUMBAI-99 MUMBAI, MAHARASHTRA, INDIA PIN-400 099	022-8323402 / 022-8216433	
	CONTROL TRANSFORMER/ WINDING HEATING TRANSFORMER	6	E1128	UNILEC ENGINEERS PVT. LTD.	PLOT NO: R-247, T.T.C. INDUSTRIAL AREA, M.I.D.C., RABALE, NAVI MUMBAI- 400 701 INDIA	+91-22- 27607787 / 27607927 +91-22- 27607997	
	CONTROL TRANSFORMER/ WINDING HEATING TRANSFORMER	7	NK09	M/s Newtek Electricals	M-90, M.I.D.C, Waluj, Aurangabad 431136, Maharashtra, India	Tel/Fax: +91 240 2551555 E-mail: mkt.north@newtekelectricals.co m, sales@newtekelectricals.com Mr Sanjeev Aggarwal (9958897890)	FOR CONTROL TRANSFORM ER ONLY
<b>ES27</b>	EMER. PORTABLE LTG. SET	1	B05	BAJAJ ELECTRICALS	BAJAJ ELECTRICALS LTD. ENGINEERING & PROJECTS BU (NORTH) 3rd FLOOR, GULMOHARHOUSE, COMMUNITY CENTRE 161/B-4, GAUTAM NAGAR, YUSUF SARAI NEW DELHI – 110049	CONTACT PERSON : Mr. S. SREEMANY. SR. MANAGER (PROJECTS) CONTACT DETAILS : (+91) 9871025705. MAIL ID : srabans@bajajelectricals.com;	
	EMER. PORTABLE LTG. SET	2	B05	BAJAJ ELECTRICALS	BAJAJ ELECTRICALS LTD. ENGINEERING & PROJECTS BU (NORTH) 3rd FLOOR, GULMOHARHOUSE, COMMUNITY CENTRE 161/B-4, GAUTAM NAGAR, YUSUF SARAI NEW DELHI – 110049	SREEMANY. SR. MANAGER (PROJECTS) CONTACT DETAILS : (+91) 9871025705. MAIL ID : srabans@bajajelectricals.com;	
<b>ES28</b>	FUSE BASE	1	E1068	INDO ASIAN	B-24, PHASE - II , NOIDA - 201305, U.P.	120-3042222	
	FUSE BASE	2	G01	GE-POWER	KAMAK TOWER, 3RD FLOOR, PLOT NO. 12- A, TVK INDUSTRIAL ESTATE, EKKADUTHANGAL, GUINDY, CHENNAI- 600032	044-49681447	
	FUSE BASE	3	L01	L&T	32, SHIVAJI MARG, P.O. BOX- 6223, NEW DELHI-110015	011-41419554/59	
	FUSE BASE	4	C01	C&S ELECTRIC LTD.	222, OKHLA IND. ESTATE, PH-III, NEW DELHI- 110020	011-3088 7520-29	
	FUSE BASE	5	S01	SIEMENS	RC-IN I S NR DEL AREA, JIL BUILDING, TOWER-B, PLOT NO. 78, SECTOR 18, GURGAON-122015, INDIA	0124-2842000, 9873424331 ;amit.bhadauria@siemens.com	
	FUSE BASE	6	A24	ABB	14, MATHURA ROAD, FARIDABAD, HARYANA-121003	0129-2567580, 09871799449	
	FUSE BASE	7	S02	SPACEAGE SWITCHGEARS LTD.	68 & 13-A INDUSTRIAL DEVELOPMENT COLONY, MEHRAULI ROAD GURGAON, HARYANA-122001	0124-2302711, 4085091	
	FUSE BASE	8	S03	SCHNEIDER ELECTRIC INDIA PVT. LTD.	9TH FLOOR, BLDG. NO. 10, TOWER-C, DLF CYBER CITY, PH-II, GURGAON-122002	0124-3940400	
	FUSE BASE	9	G01	ALSTOM LTD	A-7, SEC-65, NOIDA	0120-479 0000	
	FUSE BASE	10	E1050	ESSEN DEINKI	FLAT NO. 502, SKYLINE HOUSE 85, NEHRU PLACE NEW DELHI	011-26217060	
<b>ES29</b>	HRC FUSES	1	E1068	INDO ASIAN	B-24, PHASE - II , NOIDA - 201305, U.P.	120-3042222	
	HRC FUSES	2	G01	GE-POWER	KAMAK TOWER, 3RD FLOOR, PLOT NO. 12- A, TVK INDUSTRIAL ESTATE, EKKADUTHANGAL, GUINDY, CHENNAI- 600032	044-49681447	
	HRC FUSES	3	L01	L&T	32, SHIVAJI MARG, P.O. BOX- 6223, NEW DELHI-110015	011-41419554/59	
	HRC FUSES	4	C01	C&S ELECTRIC LTD.	222, OKHLA IND. ESTATE, PH-III, NEW DELHI- 110020	011-3088 7520-29	
	HRC FUSES	5	S01	SIEMENS	RC-IN I S NR DEL AREA, JIL BUILDING, TOWER-B, PLOT NO. 78, SECTOR 18, GURGAON-122015, INDIA	0124-2842000, 9873424331 ;amit.bhadauria@siemens.com	
	HRC FUSES	6	A24	ABB	14, MATHURA ROAD, FARIDABAD, HARYANA-121003	0129-2567580, 09871799449	
	HRC FUSES	7	S02	SPACEAGE SWITCHGEARS LTD.	68 & 13-A INDUSTRIAL DEVELOPMENT COLONY, MEHRAULI ROAD GURGAON, HARYANA-122001	0124-2302711, 4085091	
	HRC FUSES	8	S03	SCHNEIDER ELECTRIC INDIA PVT. LTD.	9TH FLOOR, BLDG. NO. 10, TOWER-C, DLF CYBER CITY, PH-II, GURGAON-122002	0124-3940400	
	HRC FUSES	9	G01	ALSTOM LTD	A-7, SEC-65, NOIDA	0120-479 0000	
	HRC FUSES	10	E1050	ESSEN DEINKI	FLAT NO. 502, SKYLINE HOUSE 85, NEHRU PLACE NEW DELHI	011-26217060	
	IND.POWER & WLDG SOCKETS	1	C02	CROMPTON GREAVES	3RD FLOOR, EXPRESS BUILDING,9-10, BAHADUR SHAH ZAFAR MARG, NEAR ITO CROSSING,NEW DELHI-110002, INDIA	91 11 23460700 - 999 'Sunil.Das@cgglobal.com	

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ITEM CODE	ITEM/SERVICE DESCRIPTION	SL NO.	VENDOR CODE	VENDOR NAME	ADDRESS	PHONE	REMARKS
ES33	IND.POWER & WLDG SOCKETS	2	E1207	CYCLO ELECTRIC DEVICE & SERV.CO.	: A-3, NEAR ANTHEM BIOSCIENCE, KSSIDC INDUSTRIAL AREA, BOMMASANDRA, BOMMASANDRA INDUSTRIAL AREA, BANGALORE, KARNATAKA 560099	Mr. H.Jaishanker +919845039081, 080 - 27833102 , 080 - 27833103 : +91 80 41460985 'cycloelectric@gmail.com	
	IND.POWER & WLDG SOCKETS	3	B04	BCH	20/4, MATHURA ROAD, FARIDABAD - 121006, HARYANA, INDIA	0(129)-4063000, 9015800189(Ramesh Giri) 'ramesh.giri@bhindia.com	
	IND.POWER & WLDG	4	B02	BEST & CROMPTON	Best & Crompton Engineering Ltd	Ph : +91 44 4551 4724 , MRKT	BEST &
	IND.POWER & WLDG SOCKETS	5	A03	AJMERA INDUSTRIES & ENGG. WORKS	AJMERA INDL. AND ENGG. WORKS. AJMERA HOUSE, A-61 / KHAIRANE MIDC. , TTC INDL. AREA, NAVI MUMBAI – 400705.	Tel : 022 27620299 / 97 / 96 'mail@ajmera.net	
ES34	INTERPOSING RELAY	1	A24	ABB	14, MATHURA ROAD, FARIDABAD, HARYANA-121003	0129-2567580, 09871799449	
	INTERPOSING RELAY	2	G01	ALSTOM LTD	A-7, SEC-65, NOIDA	0120-479 0000	
	INTERPOSING RELAY	3	E1075	JYOTI LTD.	JYOTI LIMITED, E&CS DIVISION,3/15, BIDC, GORWA,VADODARA - 390 016, E-MAIL ID: ECS@JYOTI.COM	Ph. No.:+91-265-2281214 , Fax No.:+91-265-2281214	
	INTERPOSING RELAY	4	E1099	OEN INDIA LTD	29/1479, VYTILLA, COCHIN - 682 019 KERALA, INDIA	Phone : +91 484 2301132, 2303709 Fax : +91 484 2302287, 2302221 sales@oenindia.com	
	INTERPOSING RELAY	5	S01	SIEMENS	RC-IN I S NR DEL AREA, JIL BUILDING, TOWER-B, PLOT NO. 78, SECTOR 18, GURGAON-122015, INDIA	0124-2842000, 9873424331 amit.bhadauria@siemens.com	
ES35	INDICATING LAMPS	1	B04	BCH	20/4, MATHURA ROAD, FARIDABAD, HARYANA-121006	0129-4293000	
	INDICATING LAMPS	2	C01	C&S ELECTRIC LTD.	222, OKHLA IND. ESTATE, PH-III, NEW DELHI-110020	6832259,6918834-37	
	INDICATING LAMPS	3	E1050	ESSEN DEINKI	FLAT NO. 502, SKYLINE HOUSE 85, NEHRU PLACE NEW DELHI	011-26217060	
	INDICATING LAMPS	4	E1153	VAISHNO(HOTLINE SWGR.& CONTROL)	G-19, SECTOR - 11, NOIDA - 201301, UTTAR PRADESH, INDIA	8377805157 9818338922	
	INDICATING LAMPS	5	A35	GE-POWER	KAMAK TOWER, 3RD FLOOR, PLOT NO. 12- A, TVK INDUSTRIAL ESTATE, EKKADUTHANGAL, GUINDY, CHENNAI-	9818338922	
	INDICATING LAMPS	6	S01	SIEMENS	RC-IN I S NR DEL AREA, JIL BUILDING, TOWER-B, PLOT NO. 78, SECTOR 18, GURGAON-122015, INDIA	0124-2842000, 9873424331 amit.bhadauria@siemens.com	
	INDICATING LAMPS	7	S03	SCHNEIDER ELECTRIC INDIA PVT. LTD.	9TH FLOOR, BLDG. NO. 10, TOWER-C, DLF CYBER CITY, PH-II, GURGAON-122002	0124-3940400	
	JUNCTION BOXES (NON FLAME PROOF)	1	J01	JASPER ENGINEERES PVT. LTD.	A-23, SECTOR - 8, NOIDA-201301	0120-4033520/533	
	JUNCTION BOXES (NON FLAME PROOF)	2	EC05	Electro Controls & Devices	M/S ELECTRO CONTROLS & DEVICES, F-41, SITE-C, SURAJPUR INDUSTRIAL AREA GREATER NOIDA, UTTAR PRADESH :201308	Mr. Sanjay Sharma (Chief Promoter) 0120-2569487, 2560100,2560300	
	JUNCTION BOXES (NON FLAME PROOF)	3	SRC01	M/s Shrenik & Co.	39A/3, PANCHRATNA INDUSTRIAL ESTATE, SARKHEJ-BAVLA ROAD, CHANGODAR, AHMEDABAD – 382 213	020-026708100	
	JUNCTION BOXES (NON FLAME PROOF)	4	PME-01	M/s PHOENIX MECANO LTD.,	388 BHARE, TALUKA MULSHI, POST GHOTAWADE, PIRANGOOT, INDUSTRIAL AREA, PUNE-412115	Awasthi(09971119006) Tel: ++91 20 6674 5103, Mobile: +91 90499 95985, Fax: ++91 20 6674 5126	
	JUNCTION BOXES (NON FLAME PROOF)	5	ACE01	Adroit Control Engineers Pvt.Ltd.	M/S ADROIT CONTROL ENGINEERS PVT.LTD. PLOT-3, KRISHNA INDL. AREA, SECTOR-25 FARIDABAD – 121004	011-47600700, 0129-4251400	
	JUNCTION BOXES (NON FLAME PROOF)	6	PME-01	M/s PHOENIX MECANO LTD.,	388 BHARE, TALUKA MULSHI, POST GHOTAWADE, PIRANGOOT, INDUSTRIAL AREA, PUNE-412115	Awasthi(09971119006) Tel: ++91 20 6674 5103, Mobile: +91 90499 95985, Fax: ++91 20 6674 5126 contact person : Vishwa bandhu E-mail:d.gupta@pmipl-online.com ;admin@pmipl-	
	JUNCTION BOXES (NON FLAME PROOF)	7	MK01	MIKA ENGINEERS	BRANCH OFFICE : 'D'-101, DHEERAJ HERITAGE RESIDENCY II, SHASTRI NAGAR, SANTACRUZ (W), MUMBAI 400 054.	Director : Mr. Asgar Karimi Email: asgar@mikaengineers.com  E-mail : mika@mtnl.net.inTelfax : 022-26610081/82/83/84Tel : 02527-249066/70 Cell : 099230 74373	TYPE-S ONLY

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ES30	JUNCTION BOXES (NON FLAME PROOF)	8	PME-01	M/s PHOENIX MECANO LTD.,	388 BHARE, TALUKA MULSHI, POST GHOTAWADE, PIRANGOOT, INDUSTRIAL AREA, PUNE-412115	TEL.- +912066745000 Awasthi(09971119006) Tel: ++91 20 6674 5103, Mobile: +91 90499 95985, Fax: ++91 20 6674 5126 contact person : Vishwa bandhu E-mail:d.gupta@pmipl-online.com ;admin@pmipl-online.com	
	JUNCTION BOXES (NON FLAME PROOF)	9	B05	BAJAJ ELECTRICALS	BAJAJ ELECTRICALS LTD. ENGINEERING & PROJECTS BU (NORTH) 3rd FLOOR, GULMOHARHOUSE, COMMUNITY CENTRE 161/B-4, GAUTAM NAGAR, YUSUF SARAI NEW DELHI – 110049	CONTACT PERSON : Mr. S. SREEMANY. SR. MANAGER (PROJECTS) CONTACT DETAILS : (+91) 9871025705. MAIL ID : srbans@bajajelectricals.com;	
	JUNCTION BOXES (NON FLAME PROOF)	10	A03	AJIMERA INDUSTRIES & ENGG. WORKS	AJIMERA INDL. AND ENGG. WORKS. AJIMERA HOUSE, A-61 / KHAIRANE MIDC. , TTC INDL. AREA, NAVI MUMBAI – 400705.	Tel : 022 27620299 / 97 / 96 'mail@ajimera.net	
	JUNCTION BOXES (NON FLAME PROOF)	11	SB02	S.B. ELECTRICAL ENGINEERING CORPORATION	03, SARDAR GRIHA BUILDING, LOHAR CHAWAL, MUMBAI-400002	022- 22069831; 022-66637259	
	JUNCTION BOXES (NON FLAME PROOF)	12	RT13	RITTAL INDIA PVT. LTD.	Espire Building ,Level -1 A-41, Mohan Co-Operative Industrial Estate ,Mathura Road, New Delhi -110044	Amit Bansal Phone: 011-42004000, D: 011-42004033 · Mobile: +91 9717772245 · mailto:amit.b@rittal-india.com www.rittal-india.com	
	JUNCTION BOXES (NON FLAME PROOF)	13	HP08	HPL ELECTRIC AND POWER LTD.	Works Address: Village Shavella, PO:Jabli, Teh-Kasauli, Dist-Solan, Himachal Pradesh-173209	Mr. Ashwani Kumar mailto:'ashwani@hplindia.com' M:9971127370	
ES37	JUNCTION BOXES (FLAME PROOF)	1	SS01	SUDHIR SWITCHGEAR	305/6, APEEJAY HOUSE, 130, BOMBAY SAMACHAR MARG, MUMBAI - 400 023. INDIA	Telephone Nos. : 40460000 (100 lines) Fax Nos. : ++-91-22-22049381 Email : md@sudhirswitchgears.com ; works@sudhirswitchgears.com ;scud@vsnl.com	
ES39	LIGHTING FIXTURES (NON LED)	2	E1206	BALIGA LIGHTING EQPT PVT LTD	63A, CP RAMASWAMY ROAD, PB NO 6910, CHENNAI-600018	44-24995505,22680990-4	
	LIGHTING FIXTURES (NON LED)	3	F04	ELEXPRO ELECTRICALS PVT/ LTD.	C 1/27 & 37 GIDC KABILPORE NAVSARI-396424	02637-265140, Mr. Jssk kumar	
	LIGHTING FIXTURES (NON LED)	4	B05	BAJAJ ELECTRICALS	BAJAJ ELECTRICALS LTD. ENGINEERING & PROJECTS BU (NORTH) 3rd FLOOR, GULMOHARHOUSE, COMMUNITY CENTRE 161/B-4, GAUTAM NAGAR, YUSUF SARAI NEW DELHI – 110049	CONTACT PERSON : Mr. S. SREEMANY. SR. MANAGER (PROJECTS) CONTACT DETAILS : (+91) 9871025705. MAIL ID : srbans@bajajelectricals.com;	
	LIGHTING FIXTURES (NON LED)	5	C02	CROMPTON GREAVES	3RD FLOOR, EXPRESS BUILDING,9-10, BAHADUR SHAH ZAFAR MARG, NEAR ITO CROSSING,NEW DELHI-110002, INDIA	91 11 23460700 - 999 Sunil.Das@cgglobal.com, Mr. Prashant Wewhare 9930095703 (0250) 6458250	
	LIGHTING FIXTURES (NON LED)	6	E1051	EVERGREEN ENGG. CO.	EVERGREEN ENGG COMPANY WORKS-5, PLOT NO. 9,10,11,12, SURVEY NO. 242, CHINCH PADA, VASAI EAST-401208	01244606001, Sharad (+919871150447)	
	LIGHTING FIXTURES (NON LED)	7	P01	PHILIPS	9TH FLOOR,DLF 9B, DLF CYBER CITY, DLF PHASE-III,GURGAON-122002	020-66098700	
	LIGHTING FIXTURES (NON LED)	8	WP01	WIPRO LTD.	WIPRO CONSUMER CARE AND LIGHTING, 5TH FLOOR, GODREJ ETERNIA - C, OLD PUNE-MUMBAI ROAD, SHIVAJINAGAR, PUNE - 411005	mohitsharma@hplindia.com'	
	LIGHTING FIXTURES (NON LED)	9	HP01	M/S HPL ELECTRIC & POWER PVT. LTD	M/S HPL ELECTRIC & POWER PVT. LTD. PLOT NO. 76-B,PHASE-IV, SEC-57, HSIIDC, INDL. AREA , KUNDLI, DIST.- SONEPAT (HARYANA) - 131028	011-25810093 ; 9810071832 (Akhilesh Agrawal ) aagrawal@sroshni.com	
	LIGHTING FIXTURES (NON LED)	10	SR01	SURYA ROSHNI LIMITED	PADMA TOWER, RAJENDRA PLACE, RAJENDRA PLACE NEW DELHI	GIRISH KUMAR SHRIVASTAVA +91-9810528922	
	LIGHTING FIXTURES (NON LED)	11	HI02	HAVELLS INDIA LIMITED	QRG TOWERS , 2D SECTOR-126, NOIDA-201301	Mr. Mohit Gautam 'Tel: +919568152111 'mohit.gautam@halonix.co.in'; 'rahul.singh@halonix.co.in'	
LIGHTING FIXTURES (NON LED)	12	HN13	M/s Halonix Technologies Limited	M/s Halonix Technologies Limited B-31 , Phase –II, Noida Distt. Gautam Budh Nagar (U.P.) Pin- 201305			

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ITEM CODE	ITEM/SERVICE DESCRIPTION	SL NO.	VENDOR CODE	VENDOR NAME	ADDRESS	PHONE	REMARKS
ES40	LIGHTING FIXTURES ( LED)	1	NE01	Neev Luminaries	B-6/3 Okhla Industrial Area   Phase-2  New Delhi   110020	Phone: 011 40604830-31, M:8826995888 Fax: +91 11 4060 4831 info@neeverenergy.in, Jitendra Sahu <jsahu@neeverenergy.com>	
	LIGHTING FIXTURES ( LED)	2	HI01	HAVELLS INDIA LIMITED	QRG TOWERS , 2D SECTOR-126, NOIDA-201301	GIRISH KUMAR SHRIVASTAVA +91-9810528922, girish.srivastava@havells.com\	
	LIGHTING FIXTURES ( LED)	3	B05	BAJAJ ELECTRICALS	BAJAJ ELECTRICALS LTD. ENGINEERING & PROJECTS BU (NORTH) 3rd FLOOR, GULMOHARHOUSE, COMMUNITY CENTRE 161/B-4, GAUTAM NAGAR, YUSUF SARAI NEW DELHI – 110049	CONTACT PERSON : Mr. S. SREEMANY. SR. MANAGER (PROJECTS) CONTACT DETAILS : (+91) 9871025705. MAIL ID : srabans@bajajelectricals.com;	
	LIGHTING FIXTURES ( LED)	4	SR01	SURYA ROSHNI LIMITED		1 011-25810093 ; 9810071832 (Akhilesh Agrawal ) aagrawal@sroshni.com	
	LIGHTING FIXTURES ( LED)	5	P01	PHILIPS	9TH FLOOR,DLF 9B, DLF CYBER CITY, DLF PHASE-III,GURGAON-122002	01244606001, Sharad (+919871150447), Mr. Guruseelan M 8939693949, Mr Ashish Sethi 9007077089	
	LIGHTING FIXTURES ( LED)	6	HP01	M/S HPL ELECTRIC & POWER PVT. LTD	M/S HPL ELECTRIC & POWER PVT. LTD. PLOT NO. 76-B,PHASE-IV, SEC-57, HSIIDC, INDL. AREA , KUNDLI, DIST. - SONENPAT (HARYANA) - 131028	mohitsharma@hplindia.com, Mr. Nitesh Verma 8851036938, Mr Ajay lakra 9560045423	
	LIGHTING FIXTURES ( LED)	7	INS1	INSTA POWER	PLOT NO. - 457 PHASE - V, UDYOG VIHAR, GURGAON - 122016	124-4124000, Mr amit Bhardwar: 8800508090	
	LIGHTING FIXTURES ( LED)	8	PT13	Pyrotech Electronics Pvt. Ltd.	M/s Pyrotech Electronics Pvt. Ltd.(Unit -1) Led Light, Sensor Division F-16A, Road No.3 Mewar Industrial Area, Madri Udaipur -313003, Rajasthan,	Concern Person – Mr. Praveen sisodiya : 9314310042(pisodiya@pyrotechlighting.com) Ms Ritika 9509245814	
	LIGHTING FIXTURES ( LED)	9	HN13	M/s Halonix Technologies Limited	M/s Halonix Technologies Limited B-31 , Phase –II, Noida Distt. Gautam Budh Nagar (U.P.) Pin- 201305	Mr. Mohit Gautam 'Tel: +919568152111 'mohit.gautam@halonix.co.in'; M: 9891868793'rahul.singh@halonix.co.in'	
	LIGHTING FIXTURES ( LED)	10	JA13	M/s JAQUAR & COMPANY PVT. LTD.	M/s JAQUAR & COMPANY PVT. LTD. Plot No.3, Sector M-11, IMT Manesar. Gurgaon- 122050 Haryana	Mr. Dhruv Kumar 'Tel: +919350043727 dhruv.kumar@jaquar.com ; gaurav.bhalla@jaquar.com : 9582950282	
	LIGHTING FIXTURES ( LED)	11	CR13	M/s CROMPTON GREAVES CONSUMER ELECTRICALS LTD.	M/s CROMPTON GREAVES CONSUMER ELECTRICALS LTD.Tower-3, 1st Floor, East Wing Equinox Business Park LBS Marg, Kurla (West), Mumbai-400070	Mr S L Sivakumar 'Sivakumar L' <sivakumar.sl@crompton.co.in> M: 9176609363	
	LIGHTING FIXTURES ( LED)	12	WI13	M/s WIPRO ENTERPRISES PRIVATE LTD.	M/s WIPRO ENTERPRISES PRIVATE LTD. L-8, MIDC Waluj, Aurangabad-431136, Maharashtra, India	Ms Dhanya K K 'dhanya.kk8@wipro.com' M 9891815476, Mr Puneet kalia 'puneet.kalia@wipro.com'	
	LIGHTING FIXTURES ( LED)	13	NI13	M/s Nessa Illumination Technologies Pvt. Ltd.	M/s Nessa Illumination Technologies Pvt. Ltd.36/A Devraj Industrial Park, Opp. Sameep Fabrics, Pipalaj Pirana Road, Piplaj, Ahmedabad	Mr. Dhaval Shah <dhaval@nessa.in> M 9825650354, Mr. Akshat Khare <akshat@nessa.in> M: 9016111723	
	LIGHTING FIXTURES ( LED)	14	FE13	M/s. Forus Electric Pvt. Ltd.	M/s. Forus Electric Pvt. Ltd. B-313, Okhla Industrial Area, Phase-1, New delhi-110020	Mr. Amit Bharadwaj <amit.bharadwaj@foruselectric.com> M 8800508090, Mr. Uttam Goyal <uttam@foruselectric.com> M:	
	LIGHTING FIXTURES ( LED)	15	OE13	M/s. ORIENT ELECTRIC LIMITED.	C- 130, Sector-63, Noida-201301, Uttar Pradesh, D-209, Sector-63, Noida-201301, Uttar Pradesh	Birjendra Kumar Yadav <birjendra.yadav@orientelectric.com> P. +91-120-4894900 , +91-9599848491	
	LIGHTING FIXTURES ( LED)	16	ME13	M/s Mika Engineers	Survey no. 47, shed no. 2, AGHAI, Shahpurwada road, AGHAI Thane, Maharashtra-421601	"deepak" <deepak@mikaengineers.com> MOB: 8976737543	

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ITEM CODE	ITEM/SERVICE DESCRIPTION	SL NO.	VENDOR CODE	VENDOR NAME	ADDRESS	PHONE	REMARKS
	LIGHTING FIXTURES ( LED)	17	KI13	M/s Kalingia Illuminaton Pvt Ltd.	15/3/2 SITE-IV SAHIBABAD INDUSTRIAL AREA GHAZIABAD UP 201010	Bidyut Mandal' <bidyut.mandal@kalingialights.com> (M: 9555367941 / 9315029882), 'Suresh Shiromani' <suresh.shiromani@kalingialigh	
ES41	LIGHTING FIXTURES ( FLAME PROOF)	1	HI01	HAVELLS INDIA LIMITED	QRG TOWERS , 2D SECTOR-126, NOIDA-201301	GIRISH KUMAR SHRIVASTAVA +91-9810528922	
	LIGHTING FIXTURES ( FLAME PROOF)	2	B05	BAJAJ ELECTRICALS	BAJAJ ELECTRICALS LTD. ENGINEERING & PROJECTS BU (NORTH) 3rd FLOOR, GULMOHARHOUSE, COMMUNITY CENTRE 161/B-4, GAUTAM NAGAR, YUSUF SARAI NEW DELHI – 110049	CONTACT PERSON : Mr. S. SREEMANY. SR. MANAGER (PROJECTS) CONTACT DETAILS : (+91) 9871025705. MAIL ID : srabans@bajajelectricals.com;	
	LIGHTING FIXTURES ( FLAME PROOF)	3	E1206	BALIGA ELECTRICALS	63A,CP RAMASWAMY ROAD, PB NO 6910, CHENNAI-600018	44-24995505,22680990-4	
ES42	LIGHTING LAMP (NON LED)	1	WP01	WIPRO LTD.	WIPRO CONSUMER CARE AND LIGHTING, 5TH FLOOR, GODREJ ETERNIA -C, OLD PUNE	020-66098700	
	LIGHTING LAMP (NON LED)	2	E1050	ESSEN DEINKI	FLAT NO. 502, SKYLINE HOUSE 85, NEHRU PLACE NEW DELHI	9818338922	
	LIGHTING LAMP (NON LED)	3	B05	BAJAJ ELECTRICALS	BAJAJ ELECTRICALS LTD. ENGINEERING & PROJECTS BU (NORTH) 3rd FLOOR, GULMOHARHOUSE, COMMUNITY CENTRE 161/B-4, GAUTAM NAGAR, YUSUF SARAI NEW DELHI – 110049	CONTACT PERSON : Mr. S. SREEMANY. SR. MANAGER (PROJECTS) CONTACT DETAILS : (+91) 9871025705. MAIL ID : srabans@bajajelectricals.com;	
	LIGHTING LAMP (NON LED)	4	INS1	INSTA POWER	PLOT NO. - 457 PHASE - V, UDYOG VIHAR, GURGAON - 122016	124-4124000	
	LIGHTING LAMP (NON LED)	5	P01	PHILIPS	9TH FLOOR,DLF 9B, DLF CYBER CITY, DLF PHASE-III,GURGAON-122002	01244606001, Sharad (+919871150447)	
	LIGHTING LAMP (NON LED)	6	HI01	HAVELLS INDIA LIMITED	QRG TOWERS , 2D SECTOR-126, NOIDA-201301	GIRISH KUMAR SHRIVASTAVA +91-9810528922	
	LIGHTING LAMP (NON LED)	7	HP01	HPL	M/S HPL ELECTRIC & POWER PVT. LTD. PLOT NO. 76-B,PHASE-IV, SEC-57, HSIIDC, INDL. AREA , KUNDLI, DIST. - SONEPAT (HARYANA) - 131028	mohitsharma@hplindia.com'	
	LIGHTING LAMP (NON LED)	8	SR01	SURYA ROSHNI LIMITED	PADMA TOWER, RAJENDRA PLACE, RAJENDRA PLACE NEW DELHI	011-25810093 ; 9810071832 (Akhilesh Agrawal ) aagrawal@sroshni.com	
	LIGHTING LAMP (NON LED)	9	HN13	M/s Halonix Technologies Limited	M/s Halonix Technologies Limited B-31 , Phase –II, Noida Distt. Gautam Budh Nagar (U.P.) Pin- 201305	Mr. Mohit Gautam 'Tel: +919568152111 'mohit.gautam@halonix.co.in'; 'rahul.singh@halonix.co.in'	
ES43	LIGHTING LAMP (LED)	1	NE01	Neev Luminaries	D-115 , OKHLA INDUSTRIAL AREA, PHASE-1 NEW DELHI – 110020	Phone: +91 11 4060 4830 Fax: +91 11 4060 4831 info@neevenergy.in	
	LIGHTING LAMP (LED)	2	HI01	HAVELLS INDIA LIMITED	QRG TOWERS , 2D SECTOR-126, NOIDA-201301	GIRISH KUMAR SHRIVASTAVA +91-9810528922	
	LIGHTING LAMP (LED)	3	B05	BAJAJ ELECTRICALS	BAJAJ ELECTRICALS LTD. ENGINEERING & PROJECTS BU (NORTH) 3rd FLOOR, GULMOHARHOUSE, COMMUNITY CENTRE 161/B-4, GAUTAM NAGAR, YUSUF SARAI NEW DELHI – 110049	CONTACT PERSON : Mr. S. SREEMANY. SR. MANAGER (PROJECTS) CONTACT DETAILS : (+91) 9871025705. MAIL ID : srabans@bajajelectricals.com;	
	LIGHTING LAMP (LED)	4	SR01	SURYA ROSHNI LIMITED	PADMA TOWER, RAJENDRA PLACE, RAJENDRA PLACE NEW DELHI	011-25810093 ; 9810071832 (Akhilesh Agrawal ) aagrawal@sroshni.com	
	LIGHTING LAMP (LED)	5	P01	PHILIPS	9TH FLOOR,DLF 9B, DLF CYBER CITY, DLF PHASE-III,GURGAON-122002	01244606001, Sharad (+919871150447)	
	LIGHTING LAMP (LED)	6	HP01	M/S HPL ELECTRIC & POWER PVT. LTD	M/S HPL ELECTRIC & POWER PVT. LTD. PLOT NO. 76-B,PHASE-IV, SEC-57, HSIIDC, INDL. AREA , KUNDLI, DIST. - SONEPAT (HARYANA) - 131028	mohitsharma@hplindia.com	
	LIGHTING LAMP (LED)	7	INS1	INSTA POWER	PLOT NO. - 457 PHASE - V, UDYOG VIHAR, GURGAON - 122016	124-4124000	
	LIGHTING LAMP (LED)	8	PT13	Pyrotech Electronics Pvt. Ltd.	M/s Pyrotech Electronics Pvt. Ltd.(Unit -1) Led Light, Sensor Division F-16A, Road No.3 Mewar Industrial Area, Madri Udaipur -313003, Rajasthan,	Concern Person – Mr. Praveen sisodiya (psisodia@pyrotechlighting.com ) Ankit Kumar Sr. Engineer(North Region -Sales & Marketing) # +91- 7340061769, 8287897309	

**SUB-VENDOR DIRECTORY**

ITEM CODE	ITEM/SERVICE DESCRIPTION	SL NO.	VENDOR CODE	VENDOR NAME	ADDRESS	PHONE	REMARKS
	LIGHTING LAMP (LED)	9	HN13	M/s Halonix Technologies Limited	M/s Halonix Technologies Limited B-31 , Phase-II, Noida Distt. Gautam Budh Nagar (U.P.) Pin- 201305	Mr. Mohit Gautam 'Tel: +919568152111 'mohit.gautam@halonix.co.in'; 'rahul.singh@halonix.co.in'	
E545	LIGHTING SWITCH , SOCKET & S/F UNIT	1	F04	ELEXPLO ELECTRICALS PVT/ LTD.	C 1/27 & 37 GIDC KABILPORE NAVSARI-396424	02637-265140, Mr. Jssk kumar	
	LIGHTING SWITCH , SOCKET & S/F UNIT	2	E1012	ANCHOR	STEEL HOUSE, B WING, PLOT NO. 24, MAHAL INDUSTRIAL ESTATE, MAHAKALI CAVES ROAD, NEAR PAPER BOX, ANDHERI (E), MUMBAI, MAHARASHTRA.- 400093	022-30418888.	
	LIGHTING SWITCH , SOCKET & S/F UNIT	3	E1076	KAYCEE	KAYCEE INDUSTRIES LTD., C/O-CMS COMPUTERS LTD., 35A, REAR BLDG., KLOKARI, NEW DELHI-110014	Rajiv Sharma-9312004687	
	LIGHTING SWITCH , SOCKET & S/F UNIT	4	L01	L&T	32, SHIVAJI MARG, P.O. BOX- 6223, NEW DELHI-110015	011-41419554/59	
	LIGHTING SWITCH , SOCKET & S/F UNIT	5	S01	SIEMENS	RC-IN I 5 NR DEL AREA, JIL BUILDING, TOWER-B, PLOT NO. 78, SECTOR 18, GURGAON-122015, INDIA	0124-2842000, 9873424331 amit.bhadauria@siemens.com	
	LIGHTING SWITCH , SOCKET & S/F UNIT	6	E1068	INDO ASIAN	B-24, PHASE - II , NOIDA - 201305, U.P.	120-3042222	
E551	MCB	1	E1088	MDS SWITCHGEAR LTD	314-317SHAH NAHAR ESTATE	011 - 25793021	
	MCB	2	E1068	INDO ASIAN	B-24, PHASE - II , NOIDA - 201305, U.P.	120-3042222	
	MCB	3	S03	SCHNEIDER ELECTRIC INDIA PVT. LTD.	9TH FLOOR, BLDG. NO. 10, TOWER-C, DLF CYBER CITY, PH-II, GURGAON-122002	0124-3940400	
	MCB	4	E1120	S&S POWER SWITCHGEAR LTD,	NEW NO. 67, OLD NO. 19, DR. RANGA ROAD, MYLAPORE, CHENNAI - 600004	044 - 24988056, 044 - 24988057, 044 - 24988058	
E555	MODULAR SWITCH BOARD	1	E1012	ANCHOR	STEEL HOUSE, B WING, PLOT NO. 24, MAHAL INDUSTRIAL ESTATE, MAHAKALI CAVES ROAD, NEAR PAPER BOX, ANDHERI (E), MUMBAI, MAHARASHTRA.- 400093	022-30418888.	
	MODULAR SWITCH BOARD	2	F04	ELEXPLO ELECTRICALS PVT/ LTD.	C 1/27 & 37 GIDC KABILPORE NAVSARI-396424	02637-265140, Mr. Jssk kumar	
	MODULAR SWITCH BOARD	3	HI01	HAVELLS INDIA LIMITED	QRG TOWERS , 2D SECTOR-126, NOIDA-201301	GIRISH KUMAR SHRIVASTAVA +91-9810528922	
E559	RECEPTACLES - DECORATIVE	1	E1012	ANCHOR	STEEL HOUSE, B WING, PLOT NO. 24, MAHAL INDUSTRIAL ESTATE, MAHAKALI CAVES ROAD, NEAR PAPER BOX, ANDHERI (E), MUMBAI, MAHARASHTRA.- 400093	022-30418888.	
	RECEPTACLES - DECORATIVE	2	F04	ELEXPLO ELECTRICALS PVT/ LTD.	C 1/27 & 37 GIDC KABILPORE NAVSARI-396424	02637-265140, Mr. Jssk kumar	
	RECEPTACLES - DECORATIVE	3	B05	BAJAJ ELECTRICALS	BAJAJ ELECTRICALS LTD. ENGINEERING & PROJECTS BU (NORTH) 3rd FLOOR, GULMOHARHOUSE, COMMUNITY CENTRE 161/B-4, GAUTAM NAGAR, YUSUF SARAI NEW DELHI – 110049	CONTACT PERSON : Mr. S. SREEMANY. SR. MANAGER (PROJECTS) CONTACT DETAILS : (+91) 9871025705. MAIL ID : srabans@bajajelectricals.com;	
	RECEPTACLES - DECORATIVE	4	A03	AJIMERA INDUSTRIES & ENGG. WORKS	AJIMERA INDL. AND ENGG. WORKS. AJIMERA HOUSE, A-61 / KHAIRANE MIDC. , TTC INDL. AREA, NAVI MUMBAI – 400705.	Tel : 022 27620299 / 97 / 96 'mail@ajimera.net	
E561	SWITCH BOX	1	E1012	ANCHOR	STEEL HOUSE, B WING, PLOT NO. 24, MAHAL INDUSTRIAL ESTATE, MAHAKALI CAVES ROAD, NEAR PAPER BOX, ANDHERI (E), MUMBAI, MAHARASHTRA.- 400093	022-30418888.	
	SWITCH BOX	2	F04	ELEXPLO ELECTRICALS PVT/ LTD.	C 1/27 & 37 GIDC KABILPORE NAVSARI-396424	02637-265140, Mr. Jssk kumar	
	SWITCH BOX	3	B05	BAJAJ ELECTRICALS	BAJAJ ELECTRICALS LTD. ENGINEERING & PROJECTS BU (NORTH) 3rd FLOOR, GULMOHARHOUSE, COMMUNITY CENTRE 161/B-4, GAUTAM NAGAR, YUSUF SARAI NEW DELHI – 110049	CONTACT PERSON : Mr. S. SREEMANY. SR. MANAGER (PROJECTS) CONTACT DETAILS : (+91) 9871025705. MAIL ID : srabans@bajajelectricals.com;	
	SWITCH BOX	4	A03	AJIMERA INDUSTRIES & ENGG. WORKS	AJIMERA INDL. AND ENGG. WORKS. AJIMERA HOUSE, A-61 / KHAIRANE MIDC. , TTC INDL. AREA, NAVI MUMBAI – 400705.	Tel : 022 27620299 / 97 / 96 'mail@ajimera.net	
	SWITCH BOX	5	S802	S.B. ELECTRICAL ENGINEERING CORPORATION	03, SARDAR GRIHA BUILDING, LOHAR CHAWAL, MUMBAI-400002	022- 22069831; 022-66637259	
	TERMINAL BLOCKS	1	C01	WAGO-CONTROLS	C 27, GREATER NOIDA, SECTOR 58, C BLOCK, SECTOR 58, NOIDA, UTTAR PRADESH 201307	0120-2580409/10	
	TERMINAL BLOCKS	2	E1038	CONNECT WELL	309A/4, 3RD FLOOR, KALKAJI, OKHLA IND AREA PH-2, GOVINDPURI, NEW DELHI, DL 110019	9811881085 09871419996 011-65908877	

**SUB-VENDOR DIRECTORY**

ITEM CODE	ITEM/SERVICE DESCRIPTION	SL NO.	VENDOR CODE	VENDOR NAME	ADDRESS	PHONE	REMARKS
ES62	TERMINAL BLOCKS	3	E1047	ELMEX CONTROLS PVT. LTD.	12,G.I.D.C.ESTATE,MUKARPURA ROAD,VADODARA-390010	9374631074	
	TERMINAL BLOCKS	4	E1050	ESSEN DEINKI	FLAT NO. 502, SKYLINE HOUSE 85, NEHRU PLACE NEW DELHI	011-26217060	
	TERMINAL BLOCKS	5	E1142	TECHNOPLAST	OPP.I.M.INTER COLLEGE, BEGUM SARAI KHURD ROAD, AMROHA - 244221, U.P.	PH:- 05922 264006 CELL NO:- 9012676000, 9319520799, 9319582467	
	TERMINAL BLOCKS	6	PME-01	M/s PHOENIX MECANO LTD.,	388 BHARE, TALUKA MULSHI, POST GHOTAWADE, PIRANGOOT, INDUSTRIAL AREA, PUNE-412115	TEL. +912066745000 Awasthi(09971119006) Tel: ++91 20 6674 5103, Mobile: +91 90499 95985, Fax: ++91 20 6674 5126 contact person : Vishwa bandhu E-mail:d.gupta@pmipl-online.com ;admin@pmipl-online.com	
	TERMINAL BLOCKS	7	E1050	ESSEN DEINKI	FLAT NO. 502, SKYLINE HOUSE 85, NEHRU PLACE NEW DELHI	011-26217060	
ES67	RECEPTACLE (FLAME PROOF)	1	E1206	BALIGA ELECTRICALS	63A,CP RAMASWAMY ROAD, PB NO 6910, CHENNAI-600018	44-24995505,22680990-4	
	RECEPTACLE (FLAME PROOF)	2	SS01	SUDHIR SWITCHGEAR	305/6, APEEJAY HOUSE, 130, BOMBAY SAMACHAR MARG, MUMBAI - 400 023. INDIA	Telephone Nos. : 40460000 (100 lines) Fax Nos. : ++91-22-22049381 Email : md@sudhirswitchgears.com ; works@sudhirswitchgears.com ; scud@vsnl.com	
	RECEPTACLE (FLAME PROOF)	3	FFP01	FCG FLAME PROOF CONTROL GEAR	A1/53, SHAH & NAHAR INDUSTRIAL ESTATE, SITARAM JADHAV ROAD, LOWER PAREL (W), MUMBAI-400 013	Mr. N. G. Patel CMD Office No: +91-22-43443200 Fax No: +91-22-24960313	
ES68	RECEPTACLE (NON FLAME PROOF)	1	A03	AJMERA INDUSTRIES & ENGG. WORKS	AJMERA INDL AND ENGG. WORKS. AJMERA HOUSE, A-61 / KHAIRANE MIDC. , TTC INDL. AREA, NAVI MUMBAI – 400705.	Tel : 022 27620299 / 97 / 96 'mail@ajmera.net	
	RECEPTACLE (NON FLAME PROOF)	2	C02	CROMPTON GREAVES	3RD FLOOR, EXPRESS BUILDING,9-10, BAHADUR SHAH ZAFAR MARG, NEAR ITO CROSSING,NEW DELHI-110002, INDIA	91 11 23460700 - 999 'Sunil.Das@cgglobal.com	
	RECEPTACLE (NON FLAME PROOF)	3	E1207	CYCLO ELECTRIC DEVICE & SERV.CO.	: A-3, NEAR ANTHEM BIOSCIENCE, KSSIDC INDUSTRIAL AREA, BOMMASANDRA, BOMMASANDRA INDUSTRIAL AREA, BANGALORE, KARNATAKA 560099	Mr. H.Jaishanker +919845039081, 080 - 27833102 , 080 - 27833103 : +91 80 41460985 'cycloelectric@gmail.com	
	RECEPTACLE (NON FLAME PROOF)	4	B04	BCH	20/4, MATHURA ROAD, FARIDABAD - 121006, HARYANA, INDIA	0(129)-4063000, 9015800189(Ramesh Giri) 'ramesh.giri@bchindia.com	
	RECEPTACLE (NON FLAME PROOF)	5	B02	BEST & CROMPTON	BEST & CROMPTON ENGINEERING LTD 28C, AMBATTUR INDUSTRIAL ESTATE (NORTH) AMBATTUR, CHENNAI - 600 098	Ph : +91 44 4551 4724 . MRKT DGM Mr. Vi Raj:- 9840593411 'bestcromptonviraj@gmail.com	
ES69	EMERGENCY LIGHTING UNIT ( FIXED & PORTABLE TYPE)- NON FLAME PROOF	1	B05	BAJAJ ELECTRICALS	BAJAJ ELECTRICALS LTD. ENGINEERING & PROJECTS BU (NORTH) 3rd FLOOR, GULMOHARHOUSE, COMMUNITY CENTRE 161/B-4, GAUTAM NAGAR, YUSUF SARAI NEW DELHI – 110049	CONTACT PERSON : Mr. S. SREEMANY. SR. MANAGER (PROJECTS) CONTACT DETAILS : (+91) 9871025705. MAIL ID : srabans@bajajelectricals.com	
	EMERGENCY LIGHTING UNIT ( FIXED & PORTABLE TYPE)- NON FLAME PROOF	2	PEP05	PROLITE AUTOGLO LIMITED,	PROLITE AUTOGLO LTD 25 SINGH INDUSTRIAL ESTATE NO. 3, RAM MANDIR ROAD., GOREGAON (W), MUMBAI, MAHARASHTRA 400104, INDIA	022-67868100 sales@prolite.com	
ES70	EMERGENCY LIGHTING UNIT ( FIXED & PORTABLE TYPE)- FLAME PROOF	1					
ES71	24V SUPPLY MODULE WITH COMPLETE ACCESSORIES	1	E1103	POWER PACK ENTERPRISES	POWER PACK ENTERPRISES MR. NEHAL SHAH / MR. SHARAD SHAH (PARTNER) NO. 3, JAYSHREE SADAN, 1ST FLOOR, OLD NAGARDAS ROAD, ANDHERI EAST MUMBAI - 400069, MAHARASHTRA, INDIA	Call Us:08447573761 Mobile: +(91)-9821787821 +(91)-9821035604	
	24V SUPPLY MODULE WITH COMPLETE ACCESSORIES	2	E1066	INDCOIL	ADDRESS: PLOT NO. A- 150/ 151, 23RD U ROAD, WAGLE ESTATE, THANE WEST, CST RD, FRIENDS COLONY, HALLOW PUL, KURLA WEST, MUMBAI, MAHARASHTRA 400070	Phone:022 2583 8305	
	24V SUPPLY MODULE WITH COMPLETE ACCESSORIES	3	AIE01	Ames Impex Electricals Pvt. Ltd	C-1B/1207, PHASE IV, GIDC NARODA, AHMEDABAD, GUJARAT 382330	Phone:079 2282 1648	
	RCCB	1	C01	C&S ELECTRIC LTD.	222, OKHLA IND. ESTATE, PH-III, NEW DELHI-110020	011-3088 7520-29	

## SUB-VENDOR DIRECTORY

ITEM CODE	ITEM/SERVICE DESCRIPTION	SL NO.	VENDOR CODE	VENDOR NAME	ADDRESS	PHONE	REMARKS	
ES79	RCCB	2	S03	SCHNEIDER ELECTRIC INDIA PVT. LTD.	9TH FLOOR, BLDG. NO. 10, TOWER-C, DLF CYBER CITY, PH-II, GURGAON-122002	0124-3940400		
	RCCB	3	S01	SIEMENS	RC-IN I S NR DEL AREA, JIL BUILDING, TOWER-B, PLOT NO. 78, SECTOR 18, GURGAON-122015, INDIA	0124-2842000, 9873424331 amit.bhadauria@siemens.com		
	RCCB	4	A35	GE-POWER	KAMAK TOWER, 3RD FLOOR, PLOT NO. 12-A, TVK INDUSTRIAL ESTATE, EKKADUTHANGAL, GUINDY, CHENNAI-600032	044-49681447		
	RCCB	5	L01	L&T	32, SHIVAJI MARG, P.O. BOX- 6223, NEW DELHI-110015	011-41419554/59		
	RCCB	6	CO2	CROMPTON GREAVES	RAIL TRANSPORTATION SYSTEMS,VANDANA BUILDING, 11, TOLSTOY MARG, TOLSTOY MARG, NEW DELHI, DL 110001	011 3041 6300		
ES81	PEDESTAL FAN & CEILING FAN	REPUTED MAKE						
ES82	EXIT SIGN (FLAME PROOF)	REPUTED MAKE						
ES83	EXIT SIGN (NON FLAME PROOF)	REPUTED MAKE						
ES84	LADDER	REPUTED MAKE						
ES87	DICHORIC SPOT LIGHTING FIXTURE	REPUTED MAKE						
ES88	HAND LAMP UNIT	REPUTED MAKE						
ES89	LIGHTING DESIGNER	1	AT13	AVAIDS TECHNOVATORS PVT. LTD.	4A/58, SHANKAR ROAD, NEW DELHI-110060	Mr. Rajendra Panda M: 9910481854 (email: rajendra@avaids.com)		
	LIGHTING DESIGNER	2	BE13	BAJAJ ELECTRICALS LTD.	801 (8th floor), Rustomjee Aspire, Bhanu Shankar Yagnik Marg, Off Eastern Express Highway Sion (E), Mumbai 400022	Mr. S. SREEMANY. SR. MANAGER (PROJECTS) CONTACT DETAILS : (+91) 9871025705. (email: srbans@bajajelectricals.com)		
	LIGHTING DESIGNER	3	KS13	KELSATEK SOLUTIONS PVT. LTD.	50/1 4TH FLOOR, CHURCH STREET, BANGALORE-560001	Mr. S S Mudaliar Sr. VP M: 6380471362 (email: mudaliar@kelsatek.com)		
	LIGHTING DESIGNER	4	SE13	M/s SUMANAM ENGINEERING SERVICES CONSULTANT	1, ADITHYA, KOWDIAR, TRIVANDRUM 695003	Mr. Anshad S Phone: 471-2437588, (email: shaw@sumanam.org)		
	LIGHTING DESIGNER	5	SM13	SPAN MANUFACTURING COMPANY LTD	27 First Floor, Bhiku Building, Murari Ghag Marg, Prabhadevi, Mumbai-400025	Ms Surbhi Jindal M: 9811026321 (email: spanmanufacturing@gmail.com , info@dalighthub.com)	System designer only for FGD, R&M and Hydro	
	LIGHTING DESIGNER	6	CL13	CITELUM INDIA PVT. LTD	Y-14A, GREEN PARK MAIN, NEW DELHI-110016	Mr. Satyabrata Meher M: 8155001095, (email: smeher@citelum.in)	System designer only for FGD, R&M and Hydro	
	LIGHTING DESIGNER	7	SR13	M/s SURYA ROSHNI LTD	Padma Tower 1, Rajendra Place, New Delhi-110008	Mr. Saurabh Gupta 9999433167, (email: saurabh.gupta@surya.in), AKHILESH AGRAWAL (aagrawal@surya.in)		
	LIGHTING DESIGNER	8	HP13	M/s HPL ELECTRIC & POWER PVT. LTD.	WINDSOR BUSINESS PARK, B-1D, SECTOR-10 NOIDA-201301 (UP)	Name : Mr. Mahesh Sharma Designation: Sr. GM (HOD Projects) Email : msharma@hplindia.com Contact : 9818282236 Ashwani Kumar Mob-9971127370 Email: ashwani@hplindia.com		
	LIGHTING DESIGNER	9	ME13	M/s MIKA ENGINEERS.	Survey No.-47,Shed No.-2,Aghai,Shahapur-Wada Road, Village-Aghai, THANE , Pin 421601; MAHARASHTRA	Name : Mr. Deepak Kumar Nayak Email : deepak@mikaengineers.com Contact : 8976737543 Mr. Asgar B Karimi Mob-9820019739 Email: asgar@mikaengineers.com		
	LIGHTING DESIGNER	10	FED13	M/s. Forus Electric Pvt. Ltd.	M/s. Forus Electric Pvt. Ltd. B-313, Okhla Industrial Area, Phase-1, New delhi-110020	Mr. Amit Bharadwaj <amit.bharadwaj@foruselectric.com> M 8800508090, Mr. Uttam Goyal <uttam@foruselectric.com> M: 8527652687		

Makes of sub-vendor and equipment/components (excluding luminaires) mentioned in this list are indicative and shall be subject to NTPC/BHEL approval. The bidder may propose name of additional sub-vendors makes based on their experience, which will be subject to NTPC/BHEL approval.



**DOCUMENTATION REQUIREMENT**

**DRAWINGS & DOCUMENTS TO BE SUBMITTED BY ALL THE BIDDERS ALONG WITH THE BID**

Sl. No.	DOCUMENT TITLE
1	PQR CREDENTIALS
2	COMPLIANCE SHEET

**DRAWINGS & DOCUMENTS TO BE SUBMITTED BY SUCCESSFUL BIDDER AFTER AWARD OF CONTRACT ALONG WITH SUBMISSION SCHEDULE**

Sl. No.	DOCUMENT TITLE	SUBMISSION SCHEDULE				CATEGORY	BHEL DRG. NO.	NTPC DRG. NO.
		Vendor submission (Days)*	BHEL Comment (Days)	Vendor submission (Days)#	BHEL & Customer comment/ approval (Days)			
1	DATASHEET and GA Drawing of Lighting Fixtures and Misc. Items (VENDOR SPECIFIC)	21	8	8	18	PRIMARY	PE-V0-497-558-E032	4540-001-215-PVE-B-118
2	QUALITY PLAN of Lighting Fixtures DULY SIGNED & STAMPED	21	8	8	18	PRIMARY	PE-V0-497-558-E911	4540-001-215-QVE-Q-210
3	QUALITY PLAN of Misc. items DULY SIGNED & STAMPED	21	8	8	18	PRIMARY	PE-V0-497-558-E912	-
4	Mounting arrangement of Lighting Fixtures	21	8	8	18	SECONDARY	PE-V0-497-558-E034	4540-001-215-PVE-C-129
5	Mounting arrangement of Misc. items	21	8	8	18	SECONDARY	PE-V0-497-558-E035	-
6	Type test report of Lighting Fixtures	Within 2 months from PO/ within 1 week of type test				SECONDARY	PE-V0-497-558-E051	4540-001-215-PVE-W-617
7	Type test report of Misc. items	21	8	8	18	SECONDARY	PE-V0-497-558-E052	4540-001-215-PVE-W-618
8	LDC & LLO FOR TG GROUND FLOOR	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E101	-
9	LDC & LLO FOR TG MEZZANINE FLOOR	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E102	-
10	LDC & LLO FOR TG OPERATING FLOOR	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E103	-
11	LDC & LLO FOR TG DEAERATOR FLOOR	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E104	-
12	LDC & LLO FOR AHU ROOM	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E105	-
13	LDC & LLO FOR SWAS ROOM	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E106	-
14	LDC & LLO FOR BATTERY ROOM	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E107	-
15	LDC & LLO FOR MV SWITCHGEAR ROOM	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E108	-
16	LDC & LLO FOR BELOW MV SWGR ROOM	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E109	-
17	LDC & LLO FOR LV SWITCHGEAR ROOM	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E110	-
18	LDC & LLO FOR BELOW LV SWITCHGEAR ROOM	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E111	-
19	LDC & LLO FOR BOILER SWITCHGEAR ROOM	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E112	-
20	LDC & LLO FOR BELOW BOILER SWGR ROOM	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E113	-
21	LDC & LLO FOR MAIN COMMON CONTROL ROOM	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E114	-
22	LDC & LLO FOR BELOW CONTROL ROOM	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E115	-
23	LDC & LLO FOR ESP cum FGD CONTROL ROOM	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E116	-
24	LDC & LLO FOR ESP PLATFORM (4 nos. platform)	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E117	-
25	LDC & LLO FOR ID and PA fan area drawing (upto chimney)	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E118	-
26	LDC & LLO FOR BOILER PLATFORMS	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E119	-



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27	LDC & LLO FOR TRANSFORMER YARD	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E120	-
28	LDC & LLO FOR 33 KV SWGR ROOM	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E121	-
29	LDC & LLO FOR COMPRESSOR HOUSE	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E122	-
30	LDC & LLO FOR F/O UNLOADING & PR. PUMP HOUSE INCL. MCC	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E123	-
31	LDC & LLO FOR AUX. BOILER & MCC	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E124	-
32	LDC & LLO FOR FIRE WATER PUMP HOUSE	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E125	-
33	LDC & LLO FOR FIRE FIGHTING - FOAM PUMP HOUSE	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E126	-
34	LDC & LLO FOR FIRE FIGHTING FIRE WATER BOOSTER PUMP HOUSE	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E127	-
35	LDC & LLO FOR CW PUMP HOUSE & MCC	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E128	-
36	LDC & LLO FOR CW TREATMENT PLANT	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E129	-
37	LDC & LLO FOR CW CLO2 PLANT	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E130	-
38	LDC & LLO FOR PT PLANT & MCC	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E131	-
39	LDC & LLO FOR CLARIFIED WATER PUMP HOUSE	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E132	-
40	LDC & LLO FOR DM PUMP HOUSE	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E133	-
41	LDC & LLO FOR CHEMICAL LAB	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E134	-
42	LDC & LLO FOR DM PLANT	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E135	-
43	LDC & LLO FOR ETP EFFLUENT TREATMENT PLANT & MCC	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E136	-
44	LDC & LLO FOR FIRE FIGHTING - FIRE STATION/DRILL TOWER	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E137	-
45	LDC & LLO FOR ADMIN BUILDING	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E138	-
46	LDC & LLO FOR GATE COMPLEX & CISF OFFICE	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E139	-
47	LDC & LLO FOR CANTEEN BUILDING	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E140	-
48	LDC & LLO FOR O&M WORKSHOP	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E141	-
49	LDC & LLO FOR FIRST AID CENTRE	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E142	-
50	LDC & LLO FOR FQA LAB	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E143	-
51	LDC & LLO FOR MISC. SERVICE BUILDING & PARKING	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E144	-
52	LDC & LLO FOR WORKERS REST ROOM (6 No.)	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E145	-
53	LDC & LLO FOR CIVIL QUALITY LAB	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E146	-
54	LDC & LLO FOR RAW WATER PUMP HOUSE & MCC	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E147	-



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55	LDC & LLO FOR CST PUMP SHED	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E148	-
56	LDC & LLO FOR CENTRAL LUBE OIL BUILDING	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E149	-
57	LDC & LLO FOR CSSP - CLARIFIER & TREATMENT PLANT	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E150	-
58	LDC & LLO FOR FGD ABSORBER	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E151	-
59	LDC & LLO FOR GHP GYSPUM DEWATERING BUILDING	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E152	-
60	LDC & LLO FOR LHP - BALL MILL BLDG	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E153	-
61	LDC & LLO FOR STP SEWAGE TREATMENT PLANT-1	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E154	-
62	LDC & LLO FOR STP SEWAGE TREATMENT PLANT-2	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E155	-
63	LDC & LLO FOR STP SEWAGE TREATMENT PLANT-3	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E156	-
64	LDC & LLO FOR CPU REGEN	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E157	-
65	LDC & LLO FOR GAS CYLINDER STORAGE SHED	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E158	-
66	LDC & LLO FOR WATCH TOWER	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E159	-
67	LDC & LLO FOR ROADS	Within 2 weeks from the date of BHEL input drawing	8	8	18	SECONDARY	PE-V0-497-558-E160	-
68	CONDUIT LAYOUT DRAWING FOR TG GROUND FLOOR	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E201	-
69	CONDUIT LAYOUT DRAWING FOR TG MEZZANINE FLOOR	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E202	-
70	CONDUIT LAYOUT DRAWING FOR TG OPERATING FLOOR	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E203	-
71	CONDUIT LAYOUT DRAWING FOR TG DEAERATOR FLOOR	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E204	-
72	CONDUIT LAYOUT DRAWING FOR AHU ROOM	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E205	-
73	CONDUIT LAYOUT DRAWING FOR SWAS ROOM	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E206	-
74	CONDUIT LAYOUT DRAWING FOR BATTERY ROOM	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E207	-
75	CONDUIT LAYOUT DRAWING FOR MV SWITCHGEAR ROOM	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E208	-
76	CONDUIT LAYOUT DRAWING FOR BELOW MV SWGR ROOM	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E209	-
77	CONDUIT LAYOUT DRAWING FOR LV SWITCHGEAR ROOM	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E210	-
78	CONDUIT LAYOUT DRAWING FOR BELOW LV SWITCHGEAR ROOM	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E211	-
79	CONDUIT LAYOUT DRAWING FOR BOILER SWITCHGEAR ROOM	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E212	-
80	CONDUIT LAYOUT DRAWING FOR BELOW BOILER SWGR ROOM	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E213	-
81	CONDUIT LAYOUT DRAWING FOR MAIN COMMON CONTROL ROOM	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E214	-
82	CONDUIT LAYOUT DRAWING FOR BELOW CONTROL ROOM	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E215	-
83	CONDUIT LAYOUT DRAWING FOR ESP cum FGD CONTROL ROOM	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E216	-
84	CONDUIT LAYOUT DRAWING FOR ESP PLATFORM (4 nos. platform)	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E217	-
85	CONDUIT LAYOUT DRAWING FOR ID and PA fan area drawing (upto chimney)	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E218	-
86	CONDUIT LAYOUT DRAWING FOR BOILER PLATFORMS	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E219	-
87	CONDUIT LAYOUT DRAWING FOR TRANSFORMER YARD	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E220	-
88	CONDUIT LAYOUT DRAWING FOR 33 KV SWGR ROOM	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E221	-
89	CONDUIT LAYOUT DRAWING FOR COMPRESSOR HOUSE	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E222	-



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90	CONDUIT LAYOUT DRAWING FOR F/O UNLOADING & PR. PUMP HOUSE INCL. MCC	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E223	-
91	CONDUIT LAYOUT DRAWING FOR AUX. BOILER & MCC	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E224	-
92	CONDUIT LAYOUT DRAWING FOR FIRE WATER PUMP HOUSE	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E225	-
93	CONDUIT LAYOUT DRAWING FOR FIRE FIGHTING - FOAM PUMP HOUSE	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E226	-
94	CONDUIT LAYOUT DRAWING FOR FIRE FIGHTING FIRE WATER BOOSTER PUMP HOUSE	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E227	-
95	CONDUIT LAYOUT DRAWING FOR CW PUMP HOUSE & MCC	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E228	-
96	CONDUIT LAYOUT DRAWING FOR CW TREATMENT PLANT	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E229	-
97	CONDUIT LAYOUT DRAWING FOR CW CLO2 PLANT	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E230	-
98	CONDUIT LAYOUT DRAWING FOR PT PLANT & MCC	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E231	-
99	CONDUIT LAYOUT DRAWING FOR CLARIFIED WATER PUMP HOUSE	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E232	-
100	CONDUIT LAYOUT DRAWING FOR DM PUMP HOUSE	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E233	-
101	CONDUIT LAYOUT DRAWING FOR CHEMICAL LAB	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E234	-
102	CONDUIT LAYOUT DRAWING FOR DM PLANT	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E235	-
103	CONDUIT LAYOUT DRAWING FOR ETP EFFLUENT TREATMENT PLANT & MCC	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E236	-
104	CONDUIT LAYOUT DRAWING FOR FIRE FIGHTING - FIRE STATION/DRILL TOWER	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E237	-
105	CONDUIT LAYOUT DRAWING FOR ADMIN BUILDING	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E238	-
106	CONDUIT LAYOUT DRAWING FOR GATE COMPLEX & CISF OFFICE	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E239	-
107	CONDUIT LAYOUT DRAWING FOR CANTEEN BUILDING	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E240	-
108	CONDUIT LAYOUT DRAWING FOR O&M WORKSHOP	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E241	-
109	CONDUIT LAYOUT DRAWING FOR FIRST AID CENTRE	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E242	-
110	CONDUIT LAYOUT DRAWING FOR FQA LAB	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E243	-
111	CONDUIT LAYOUT DRAWING FOR MISC. SERVICE BUILDING & PARKING	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E244	-
112	CONDUIT LAYOUT DRAWING FOR WORKERS REST ROOM (6 No.)	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E245	-
113	CONDUIT LAYOUT DRAWING FOR CIVIL QUALITY LAB	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E246	-
114	CONDUIT LAYOUT DRAWING FOR RAW WATER PUMP HOUSE & MCC	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E247	-
115	CONDUIT LAYOUT DRAWING FOR CST PUMP SHED	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E248	-
116	CONDUIT LAYOUT DRAWING FOR CENTRAL LUBE OIL BUILDING	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E249	-
117	CONDUIT LAYOUT DRAWING FOR CSSP-CLARIFIER & TREATMENT PLANT	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E250	-
118	CONDUIT LAYOUT DRAWING FOR FGD ABSORBER	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E251	-
119	CONDUIT LAYOUT DRAWING FOR GHP GYPSUM DEWATERING BUILDING	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E252	-
120	CONDUIT LAYOUT DRAWING FOR LHP - BALL MILL BLDG	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E253	-
121	CONDUIT LAYOUT DRAWING FOR STP SEWAGE TREATMENT PLANT-1	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E254	-
122	CONDUIT LAYOUT DRAWING FOR STP SEWAGE TREATMENT PLANT-2	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E255	-
123	CONDUIT LAYOUT DRAWING FOR STP SEWAGE TREATMENT PLANT-3	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E256	-
124	CONDUIT LAYOUT DRAWING FOR CPU REGEN	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E257	-
125	CONDUIT LAYOUT DRAWING FOR GAS CYLINDER STORAGE SHED	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E258	-
126	CONDUIT LAYOUT DRAWING FOR WATCH TOWER	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E259	-
127	CONDUIT LAYOUT DRAWING FOR ROADS	Within 1 week from approval of LLO	8	8	18	SECONDARY	PE-V0-497-558-E260	-

**NOTES:**

- a) \* 1st submission within indicated days from date of purchase order.
- b) # Submission (within indicated days) after incorporating all BHEL comments.



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- c) Primary documents shall be considered for Delay analysis
- d) Inputs will be provided in staggered manner at contract stage (to be finalized during kick-off meeting) and a maximum of 20 input drawings will be furnished to vendor within a week for preparation of LDC and LLO drawings
- e) The list of LDC/LLO/CLO drawings mentioned above is tentative and can change during detailed engineering. (LDC- Lighting Design Calculation, LLO- Lighting Layout Drawing, CLO- Conduit Layout Drawing)



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<b>DRAWINGS &amp; DOCUMENTS TO BE SUBMITTED AS FINAL/AS-BUILT DOCUMENT</b>	
<b>Sl. No.</b>	<b>DOCUMENT TITLE</b>
1	APPROVED DOCUMENTS
2	Field Quality Plan of lighting fixtures



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**COMPLIANCE CERTIFICATE**

1	It is hereby confirm that the technical specification (sheet 1 to 62 ) has been read, understood. We confirm compliance to the tender specification including any clarification and amendments without any deviation.
2	It is hereby declared that any technical submittals which was not specifically asked for in NIT shall stand withdrawn.

Signature of authorised Representative :

Name and Designation :

Name & Address of the Bidder :

Date



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**UNPRICED SCHEDULE**

Sr. No.	Item code	Item description	Unit	Order Quantity	UNIT PRICE (EX-WORKS) (Rs)	TOTAL PRICE (EX-WORKS) (Rs)	REMARKS
1	558-12118-A	Luminaire Type FC06 (LED)	Nos.	4773			
2	558-12120-A	Luminaire Type FC81 (LED)	Nos.	492			
3	558-12195-A	Luminaire Type FC07 (LED)-DC	Nos.	552			
4	558-12196-A	Luminaire Type FC33 (LED)-DC	Nos.	133			
5	558-12197-A	Luminaire Type FC34 (LED)-DC	Nos.	518			
6	558-12201-A	Luminaire Type SF63 (LED)	Nos.	129			
7	558-12203-A	LUMINAIRES TYPE SF66(LED)	Nos.	32			
8	558-12198-A	Luminaire Type SB11 (LED)	Nos.	316			
9	558-12199-A	Luminaire Type SB02 (LED)	Nos.	839			
10	558-12200-A	Luminaire Type SB03 (LED)	Nos.	220			
11	558-12122-A	Luminaire Type SS62 (LED)	Nos.	1054			
12	558-12123-A	Luminaire Type SS63 (LED)	Nos.	385			
13	558-12205-A	Luminaire Type SW41 (LED)	Nos.	7050			
14	558-12206-A	Luminaire Type SW42 (LED)	Nos.	2902			
15	558-12140-A	Luminaire Type FC30 (LED)	Nos.	2033			
16	558-12207-A	LUMINAIRES TYPE MW96(LED)	Nos.	320			
17	558-12225-A	LUMINAIRE DIMABLE DOWNLIGTER 15-18W(LED)	Nos.	28			
18	558-12224-A	LUMINAIRES TYPE DOWNLIGHTER 15-18W(LED)	Nos.	630			
19	558-12228-A	COVE LIGHT - LED (5m strip)	Nos.	530			
<b>Switch boxes for individual control of circuits</b>							
20	558-12014-A	Type SWB1 Decorative	Nos.	84			
21	558-12015-A	Type SWB2 Decorative	Nos.	170			
22	558-12016-A	Type SWB3 Decorative	Nos.	15			
23	558-12099-A	Type SWB4 Decorative	Nos.	117			
24	558-12100-A	Type SWB5 Decorative	Nos.	5			
<b>Junction boxes</b>							
25	558-12026-A	Type JB-F	Nos.	21031			
26	558-12027-A	Type JB-FE	Nos.	557			
<b>Receptacles</b>							
27	558-12079-A	Type RA	Nos.	583			
28	558-12080-A	Type RA (Flame proof)	Nos.	2			
29	558-12081-A	Type RB	Nos.	805			
30	558-12082-A	Type RC	Nos.	336			
31		Type RC (Flame proof)	Nos.	2			
32	558-12083-A	Type RD	Nos.	2			
<b>Fans</b>							
33	558-12010-A	Ceiling fan 1200 mm sweep	Nos.	20			
34	558-12094-A	Pedestal fan	Nos.	10			
<b>Emergency lighting Units</b>							
35	558-12018-A	With Ni-Cd battery and 2 X 9W fluorescent lamp	Nos.	50			
<b>24V supply module &amp; lamp unit complete with all</b>							
36	558-12002-A	Fixed type 24V supply modules	Nos.	78			
37	558-12003-A	Portable type 24V supply modules	Nos.	11			
38	558-12009-A	Portable halogen lamp unit	Nos.	11			
39	558-12105-A	5A, 24V industrial type sockets	Nos.	178			
40	558-12019-A	EXIT SIGN	Nos.	139			
41	558-12139-A	OCCUPANCY SENSOR	Nos.	100			
42	558-12102-A	LIGHTING DIMMER SYSTEM	Nos.	1			
<b>Drivers-Lighting Luminaires</b>							
43	558-12231-A	Driver-Luminaire Type FC06 (LED)	Nos.	20			
44	558-12235-A	Driver-Luminaire Type FC07 (LED)-DC	Nos.	10			

		TECHNICAL SPECIFICATION LIGHTING FIXTURES, LAMPS & MISC. ITEMS 2X660MW TALCHER THERMAL POWER PROJECT, STAGE-III				PE-TS-497-558-E001	
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						Rev. No. 00	
						Date : 20.04.2024	
45	558-12236-A	Driver-Luminaire Type FC33 (LED)-DC	Nos.	10			
46	558-12237-A	Driver-Luminaire Type FC34 (LED)-DC	Nos.	10			
47	558-12250-A	Driver-Luminaire Type FC30 (LED)	Nos.	15			
48	558-12233-A	Driver-Luminaire Type FC81 (LED)	Nos.	10			
49	558-12241-A	Driver-Luminaire Type SB11 (LED)	Nos.	10			
50	558-12242-A	Driver-Luminaire Type SB02 (LED)	Nos.	10			
51	558-12243-A	Driver-Luminaire Type SB03 (LED)	Nos.	10			
52	558-12238-A	Driver-Luminaire Type SF63 (LED)	Nos.	10			
53	558-12244-A	Driver-Luminaire Type SS62 (LED)	Nos.	10			
54	558-12245-A	Driver-Luminaire Type SS63 (LED)	Nos.	10			
55	558-12246-A	Driver-Luminaire Type SW41 (LED)	Nos.	20			
56	558-12247-A	Driver-Luminaire Type SW42 (LED)	Nos.	15			
57	558-12240-A	Driver- LUMINAIRES TYPE SF66(LED)	Nos.	10			
58	558-12251-A	Driver- LUMINAIRES TYPE DOWNLIGHTER 15-18W(LED)	Nos.	10			
59	558-12253-A	FLEXIBLE CONDUIT, TERNE COATED	Mtr.	35622			
60	558-12022-A	Free standing ladder (adjustable 5m to 10m)	Nos.	1			
61	558-12104-A	Step ladder (portable aluminium)	Nos.	1			
62	558-12086-A	SUPERVISION OF E&C	LOT	1			
		CHARGES PER VISIT	VISIT	X	20000		REFER NOTE-1, 2, 3 & 4
		MANDAYS CHARGES	DAYS	Y	5000		REFER NOTE-1, 2, 3 & 4
NOTES							
1	FOR SUPERVISION OF E&C, X VISITS AND Y MANDAYS TO BE CONSIDERED. THE PRICES SHALL BE INCLUSIVE OF CHARGES OF AIRFARE (TO & FRO), BOARDING, LODGING, VISA, MEDICAL, INSURANCE ETC.						
2	AMOUNT PAYABLE PER VISIT = VISIT CHARGES AS PER SL. NO. 11.1 ABOVE (+) UNIT PRICE FOR MANDAYS CHARGES AS PER SL. NO. 11.2 ABOVE (x) NO. OF MANDAYS AT SITE (TO BE CERTIFIED BY BHEL SITE)						
3	UNIT RATE FOR 11.1 AND 11.2 ARE INR 20000/- AND INR 5000/- RESPECTIVELY AND SAME IS FIRM. SUPERVISION OF E&C RATE SHALL NOT BE CONSIDERED FOR PRICE EVALUTION.						
4	NOS. OF VISIT FOR SUPERVISION OF E&C MAY INCREASE BASED ON PROJECT REQUIREMENT.						
5	CONTAINERS AS PER SPECIFICATION ARE TO BE SUPPLIED ALONG WITH FIRST SUPPLIES. THE PRICE OF CONTAINER IS DEEMED TO BE INCLUDED IN PACKAGE PRICE. NO SEPARATE CHARGES SHALL BE PAYABLE.						
6	THE MATERIAL SHALL BE SUPPLIED IN LOTS. LOTS SHALL BE RELEASED PROGRESSIVELY BASED ON APPROVED CONDUIT LAYOUT DRAWINGS OF DIFFERENT AREAS AND PROJECT REQUIREMENT.						
7	LIGHTING SYSTEM DESIGN CHARGES ARE DEEMED TO BE INCLUDED IN THE PRICE OF ABOVE ITEMS. NO SEPARATE CHARGES FOR DESIGN ACTIVITY WILL BE PAYABLE.						
8	TYPE TESTS CHARGES ARE DEEMED TO BE INCLUDED IN THE PRICE OF ABOVE ITEMS. NO SEPARATE CHARGES FOR TYPE TESTING WILL BE PAYABLE.						
9	DURING SUPPLY OF MATERIAL, CONTAINER NUMBERS SHALL BE VERIFIED WITH RECEIPTED LR FOR MAKING PAYMENT ALONG WITH ENGINEERING CONCURRENCE.						

	TECHNICAL SPECIFICATION LIGHTING FIXTURES, LAMPS & MISC. ITEMS 2X660MW TALCHER THERMAL POWER PROJECT, STAGE-III	PE-TS-497-558-E001
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		Date : 20.04.2024

## PRE QUALIFICATION REQUIREMENT (TECHNICAL)

	<b>2 X 660 MW NTPC TALCHER</b>	PE-PQ-497-558-E001
	<b>PRE-QUALIFICATION REQUIRMENTS FOR LIGHTING FIXTURES, LAMPS &amp; MISC. ITEMS</b>	REVISION NO. 00 DATE 20/04/2024
		SHEET NO. 1 of 2

**ITEMS :** Lighting Fixtures, Lamps, Junction boxes, Miscellaneous Items.

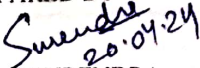
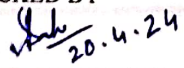
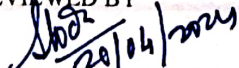
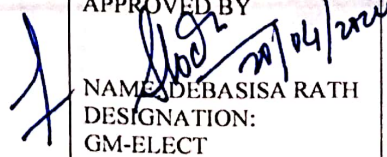
**SCOPE:**


Supply (Including Design) : YES  
 Erection & Commissioning : No  
 Services : YES (Supervision of E&C)

1.0	<u>Manufacturing Capability</u> LED Lighting fixture manufacturer as per sub-vendor list (refer technical specification) or i) Vendor should be a Manufacturer of LED lighting fixture. ii) Availability of type test reports conducted at independent Lab or witnessed by third party of LED fixture as per relevant standard. iii) Availability of routine & acceptance test reports of LED lighting fixture to establish in-house capability at manufacturer's works to carry out routine & acceptance tests as per relevant standard. iv) Vendor should have supplied LED lighting fixtures to power plant/ industrial installations.
2.0	<u>Lighting System Design Capability</u> Lighting designer as per sub-vendor list (refer technical specification). or The vendor / agency should have engineered / prepared Minimum 33 number drawings including Lighting Design calculations (Minimum 10 No.), Lighting layout Drawings (Min. 10 No.), Conduit layout drawings (Minimum 10 No.), Power distribution schemes (Minimum 2 no.) and lighting single line diagrams (Minimum 1 No.) for power stations or refineries and Petro-Chemical plants/process plants/ other industrial installations. Drawings should be customer approved.

**Notes:**

1. In case vendor is able to meet criteria at Sl. No. 1 only and not Sl. No. 2 above, vendor can tie-up with any lighting designer (herein termed associate) who is meeting all criteria mentioned in S. No. 2 & submit the credentials of associate if required. Vendor to submit MOU on non-judicial stamp paper of Rs. 100 /- with associate at bidding stage.
2. In case vendor is able to meet criteria at Sl. No. 2 only and not Sl. No. 1 above, vendor can tie-up with any lighting manufacturer (herein termed associate) who is meeting all criteria mentioned in S. No. 1 & submit the credentials of associate. Vendor to submit MOU on non-judicial stamp paper of Rs. 100 /- with associate at bidding stage.
3. Bidder to note that MOU on non-judicial stamp paper once offered to BHEL cannot be changed till the execution of the project.

PREPARED BY  NAME: SURENDRA MATHARU DESIGNATION: MANAGER	CHECKED BY  NAME: AYAN SAHA DESIGNATION: DGM	REVIEWED BY  NAME: SANDEEP LODH DESIGNATION: AGM	APPROVED BY  NAME: DEBASISA RATH DESIGNATION: GM-ELECT
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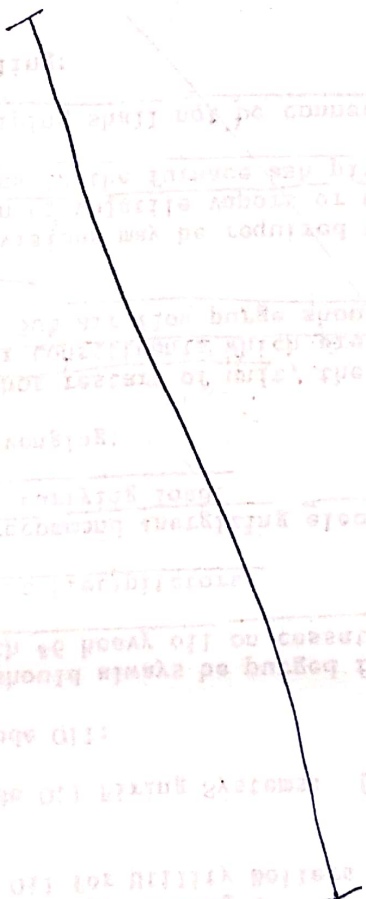
	<b>2 X 660 MW NTPC TALCHER</b>	PE-PQ-497-558-E001
	<b>PRE-QUALIFICATION REQUIRMENTS FOR LIGHTING FIXTURES, LAMPS &amp; MISC. ITEMS</b>	REVISION NO. 00 DATE 20/04/2024
		SHEET NO. 2 of 2

**General Points of PQR:**

1. Cut-off date for credentials shall be considered same as date of techno-commercial bid opening.
2. **Consideration of offer shall be subject to customer's approval of bidders.**
3. Bidder to submit all supporting documents in English. If documents submitted by bidder are in language other than English, a self-attested English translated document should also be submitted.
4. Notwithstanding anything stated above, BHEL reserves the right to assess the capabilities and capacity of the bidder to perform the contract, should the circumstances warrant such assessment in the overall interest of BHEL.
5. After satisfactory fulfilment of all the above criteria/ requirement, offer shall be considered for further evaluation as per NIT and all other terms of the tender.

DND/MS/2024

NO-120-1222



PREPARED BY <i>Surendra</i> 20/04/24 NAME: SURENDRA MATHARU DESIGNATION: MANAGER	CHECKED BY <i>Ayan</i> 20.4.24 NAME: AYAN SAHA DESIGNATION: DGM	REVIEWED BY <i>Sandeep</i> 20/04/2024 NAME: SANDEEP LODH DESIGNATION: AGM	APPROVED BY <i>Debasisa</i> 20/04/2024 NAME: DEBASISA RATH DESIGNATION: GM-ELECT
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