



# सेन्ट्रल फाउंड्री फोर्ज प्लांट

Central Foundry Forge Plant

भारत हेवी इलेक्ट्रिकल्स लिमिटेड

Bharat Heavy Electricals Limited

Ref No:FF/15-16/LED/01

## Specification for Requirement of High bay 120 W LEDs

Sl. No.	Details	Requirement from vendor	Vendor Response
	Vendor must confirm/specify details as demanded against each clause of this specification. Inadequate / incomplete, ambiguous, or unsustainable information against any of the clauses of the specifications/requirements shall be treated as non-compliance.		
1.0	<b>OBJECTIVE:</b>		
1.1	<p>This specification governs the requirement of <b>compact Industrial Integral Wide beam (90 deg &amp; with optical spread lens) LED High Bay light with complete wiring &amp; operational electrical components on SITC basis (Supply, Installation, Testing &amp; Commissioning) in CFFP.</b></p> <p>The scope of work includes</p> <p><b>Supply</b> of LED High Bay Light &amp; all electrical components including cable.</p> <p><b>Electrification</b> ie. Mounting of MCB in MCB box, laying of conduits and wire, making terminal connections, making arrangement for mounting of LED high bay light on Truss, making electrical connections with connectors.</p> <p><b>Installation/erection testing and commissioning</b> of High Bay light.</p>	Vendor to confirm	
2.0	<b>PRE-QUALIFICATION CRITERIA:</b>		
2.1	Experience, of having successfully completed industrial <b>LED electrification work</b> (experience of working at heights) during last 7 years ending on tender opening date, as falling under one or more categories of the following:		

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	a) <b>Three (3)</b> completed electrification works costing not less than <b>20 Lacs</b> . OR b) <b>Two (2)</b> completed electrification works costing not less than <b>25 Lacs</b> . OR c) <b>One (1)</b> completed electrification works costing not less than <b>40 Lacs</b>	Vendor to confirm. (Purchase orders copy/ies)	
2.2	Bidder has to submit copy of following certificate, of LED High bay Model quoted, from <b>NABL approved laboratories</b> only, for Luminaire: <b>LM 79 (IS 16106:2012)</b> having values for. The qualifying values should be as mentioned in <b>Clause 4.1 to 4.14</b> a. Measured total luminous flux (lm) b. Input Voltage (V) c. Current (A) d. Power (W) e. Luminous efficacy, f. Luminous intensity distribution, g. Correlated Colour Temperature CCT h. Colour Rendering Index CRI, & i. Chromaticity Coordinates (x,y)	Vendor to confirm (Attach test report of model quoted)	
3.0	<b><u>SCOPE OF SUPPLY</u></b>		
3.1	Wiring for High bay fixture light point, fitting/mounting of conduits, clamps, joints and bends, laying of cables, making terminal connections with connectors, making arrangement for mounting of LED High bay Light on Truss ,Carrying of LED high bay Light to top, erection/installation and commissioning of Led High bay light on Truss	Vendor to confirm	

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	<b><i>The height of Truss will be between 12-16 meters</i></b>		
3.2	Supply of material (MCB, Conduit, 2C 2.5 sq. mm Cu Wire, MCS Box, clamps, joints, hooks, connectors etc) for electrification of one LED Light circuit point.	Vendor to confirm	
3.3	Supply of <b>COMPLETE LED HIGH BAY LIGHT</b> as per specification and technical requirements <b>Make accepted : Philips/GE/Cree/Trilux only</b>	Vendor to confirm	
4.0	<b><u>TECHNICAL REQUIREMENTS:</u></b>		
	<b><u>Parameters</u></b>	<b><u>Desired Values for PQC</u></b>	
4.1	Rated input power (in W)	<=120W	Vendor to specify
4.2	Rated luminous flux (in lm)	>12000	Vendor to specify
4.3	LED luminaire efficacy (in lm/W)	>100	Vendor to specify
4.4	Correlated Colour Temperature (CCT in K)	4000-7000K	Vendor to specify
4.5	Rated Colour Rendering Index (CRI)	>70	Vendor to specify
4.6	Rated life (in h) of the LED module (> 30000 Hr) and the associated rated lumen maintenance (Lx) > 80 %	>30000 Hr > 80%	Vendor to specify
4.7	Failure fraction (Fy), corresponding to the rated life of the LED module (including all components) in the luminaire including mechanical.	<30 (30%)	Vendor to specify

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4.8	Ambient temperature for a luminaire in Centigrade	1 deg C to 60 deg C	Vendor to specify	
4.9	Power Factor	>0.95	Vendor to specify	
4.10	Drive Current	<1.5A	Vendor to specify	
	Optical Risk (Risk on eyes and skin from the exposure to LED radiation) Risk Group 0 Exempt Risk Group 1 Low Risk Group 2 Moderate Risk Group 3 High	Risk group 0	Vendor to specify	
4.11	IK Rating Protection against mechanical Impact (2 joules).	>=IK 07	Vendor to specify	
4.12	Heat Sink Arrangement for appropriate heat dissipation	Must be provided	Vendor to confirm	
4.13	Solder point temperature deg C	< 70 deg C	Vendor to specify	
4.14	Material for board	MCPCB (Metal Core Printed Circuit Board)	Vendor to confirm	
5.0	<b><u>GENERAL REQUIREMENTS:</u></b>			
5.1	Protection	IP65 or greater	Vendor to specify	
5.2	Mounting	Roof mounting with Single point mounting arrangement With eye bolt / J-Hook/vertical hangers. All	Vendor to specify	

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		items required for Mounting to be supplied by the party.	
5.3	Vibration	Fittings should be so installed and arrangements provided so that they should withstand the vibrations caused due to Crane movements.	Vendor to confirm
5.4	Optics	Wide beam suitable optics	Vendor to specify
5.5	Protection	Short Circuit, Over voltage, Under voltage	Vendor to confirm and specify
5.6	Operating voltage range	150V to 270V , 50Hz,Single Phase AC	Vendor to specify & confirm
5.7	Working Temperature (Ambient temperature at shops)	0 to 50 deg. C	Vendor to note
5.8	Wire	PVC insulated, 2.5Sqmm,2 core, copper wire of <b>Finolax, Polycab, Lapp, Icus</b> make only	Vendor to specify
5.9	Conduit	18 Gauge, MS pipe.	Vendor to confirm
5.10	MCB	2pole, 2A of <b>Schneider, Siemens, and Legrand</b> make only.	Vendor to specify
6.0	<b>Special Terms &amp; Conditions of Supply , Installation and commissioning</b>		
6.1	The wiring will be of Phase and Neutral control through 2P MCB, of 2A each such that each MCB will control maximum two Led high bay lights.	Vendor to confirm	
6.2	The MCB along with boxes have to be mounted appropriately at the base of column for operating the LED lights as per requirement and suitability of site.	Vendor to confirm	

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6.3	There should not be electrical joints (wire joints) between the LED high bay light and the control MCB, except the tapping for second LED light which is being controlled from this common MCB.	Vendor to confirm	
6.4	More than two cables should not be used in one conduit pipe.	Vendor to confirm	
6.5	Minimum acceptable LUX at floor level should be greater than 35 LUX from the height of 16 meter where it will be fitted.	Vendor to confirm	
6.6	The standard guarantee for complete LED High bay light fitting will be <b>36 months</b> from the date of commissioning	Vendor to confirm	
6.7	One sample of quoted LED high bay light of L1 vendor may be mounted (at 16meter high roof approx.) and tested for desired LUX level (Minimum 35 Lux). The lights will be technically accepted subject to proving of required LUX at floor level.	Vendor to confirm	
6.8	The L1 vendor who qualifies technical (document verification) will be informed to deliver their LED high bay Light <b>sample (one number) for testing</b> . The vendor will have to deliver his sample at BHEL, CFFP through a returnable gate pass within 15 days of information. The sample lights will be returned within a period of one week	Vendor to confirm	
6.9	The cost/mode for delivery and collecting the light will have to be arranged and borne by the vendor. BHEL will not be responsible for cost/damage/defect to the LED light inside the plant or during transit	Vendor to confirm	
6.10	Any delay in delivery/non delivery of sample for testing within the prescribed duration will be sufficient ground for technical rejection of bid	Vendor to confirm	

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6.11	The vendor has to submit <b>Performance Bank Guarantee</b> of 10% of work order value valid for 36 months from the date of commissioning in the format provided.	Vendor to confirm	
6.12	The defective lights have to be replaced/repared/made functional within the period of 15 (fifteen days) days of reporting. No response/delayed response than stipulated period in attending the problem for even one light will be sufficient ground for revoking the complete bank guarantee	Vendor to confirm	
6.13	During the period of guarantee it will be the responsibility of the vendor to dismantle/repair/replace/mount the light fitting from its present mounting location	Vendor to confirm	
6.14	70% payment of material cost along with taxes and duties against delivery and acceptance of material within 30 days of delivery.30% material cost and installation/erection and commissioning charges after successful commissioning	Vendor to confirm	
6.15	Delivery of material should be within 90 days from the date of work order. Early delivery is also acceptable. A Penalty of 0.5% of work order value per week will be levied in case of late delivery subject to maximum of 10% of work order value	Vendor to confirm	
6.16	The total work contract period is <b>120 Days</b> from the date of work order	Vendor to confirm	
6.17	The work order will only be issued subject to approval of LED high bay light sample	Vendor to confirm	
6.18	Vendor should inspect the site before quoting the rates	Vendor to confirm	
6.19	Service tax will be charged on labour charges only	Vendor to confirm	
6.20	Vendor shall submit a <b>certificate from the authorised dealer of the LED High bay light manufacturer,</b>	Vendor to confirm	

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	confirming the quantity and genuineness of the product supplied		
6.21	In case of difference in rates quoted in form of words and numbers, rates in words will accepted as final quoted rates	Vendor to confirm	
6.22	All other terms and conditions as per BHEL works policy	Vendor to confirm	
7.0	<b><u>PACKING</u></b>		
7.1	The components should be supplied in suitable packing to avoid any damage during handling, transit and storage.	Vendor to specify and confirm	
8.0	<b><u>INSPECTION, DEVIATION AND REPLACEMENT</u></b>		
9.1	BHEL reserves the <b>right to inspect components at vendor's place before dispatch</b> . The supplier shall be given prior intimation in such case. However <b>inspection at BHEL shall be final</b> . The supplier shall offer BHEL representative all reasonable test facilities without charge to satisfy the latter that the components are being furnished in accordance with this specification.	Vendor to note and confirm	
9.2	The components may be tested at CFFP, BHEL and will be <b>binding on supplier</b> . If the components (Light, wire, connection components) received at CFFP is not found in accordance with the requirements, it shall be rejected.	Vendor to note and confirm	

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