

***TENDER***

***FOR***

***ELECTRICAL WORKS IN ADDITIONAL FLOORS OF***

***NEW BUILDING AT AKKULAM FACTORY OF HLL,***

***THIRUVANANTHAPURAM***

**PART-III**  
**PRICE BID**

**TENDER NO. HLL/ID / 14/27**  
**MARCH 2014**



**INFRASTRUCTURE DEVELOPMENT DIVISION**  
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## **1 COMMERCIAL CONDITIONS**

1.0.1 The tendered rate shall inter alia be deemed to include for the provision of all materials, process, operation and special requirements detailed in the particular specification irrespective of whether these are mentioned in the description of equipment schedule and Bill of quantities or not. It is an express condition of the contract that the tendered rates for various items in the Bill of Quantities shall be deemed to include for the full, entire and final condition of the contractor respective items of the works in accordance with the provision of the contract.

**1.0.2** The tendered rate shall include for all taxes, duties, etc. as applicable and shall be quoted on the works contract basis for **Electrical works in Additional floors of New building at Akkulam factory of HLL, Thiruvananthapuram.**

1.0.3 The tendered rate shall remain firm and free from variation due to rise in the cost of materials/equipment, labour or any other reasons whatsoever during the contract period and valid extension on the case may be.

1.0.4 The quantum of excise duty included in the tendered price, the rate at which they were assumed etc. shall be indicated in the tender.

### **1.1 UNIT RATES**

1.11 Only approved work will be measured on completion and priced as per rates quoted against the respective items.

### **1.2 BRIEF DESCRIPTION OF PRICING**

1.2.1. Unforeseen difficulties for which provision has not been made in the tender will in no way relieve the successful tenderer from the full execution of the work.

1.2.2 The price quoted shall be the final amount for this finished work.

### **1.3 INCOME TAX**

Any payment to the contractor as per contract, will be made after deducting income tax as per the rules and regulations.

#### **1.4 SALES TAX AND EXCISE DUTY**

The tenderer shall clearly indicate sales tax, service tax in case of proprietorship, Excise and other duties as applicable in his offer for carrying out this work.

#### **1.6. SUBMISSION OF BILL**

1.6.1. The contractor shall from time to time prepare and submit interim bills of the work executed and on completion of the contract, he shall prepare and submit the final bill. The measurements sheets in support of the interim and final bills shall be prepared by the contractor on the basis of measurements taken by him jointly with the project engineer and the said measurement sheets shall be submitted by him with the relevant bill.

#### **1.7. EXTRA ITEMS**

The contractor is bound to carry out any items of work necessary for the completion of the job even though such items may not have been included in the schedule of probable quantities or rates, such items being necessary or essential for completing the job. Variation order in respect of such additional items and their quantities will be issued in writing by the employer.

1.7.1 All shavings, cuttings and other rubbish as it accumulates from time to time during the progress of work and on completion including that of the sub-contractors and special tradesman and all materials condemned by the project engineer shall be cleared and removed from the site by the contractor without any extra charge.

1.7.2 All measuring steel taps, scaffolding, ladders instruments and tools that may be required for taking measurements shall be supplied by the contractor.

#### **1.8. OVER TIME WORK**

If the contractor is required to work night or on holidays in order to maintain the time schedule he shall take prior approval from the Engineer-in-charge. He should also

provide and maintain at his own cost sufficient lights as may be necessary to enable the work to proceed satisfactorily during the night.

- 1.8.1. The contractor shall give full facilities to all other contractors working on site. He shall also arrange his programme of work so as not hinder the progress of other trades. The decision of the Engineer-in-charge on any point of dispute between the various parties shall be final and binding.
- 1.8.2. It is specifically pointed out that the contractor shall not be entitled to any compensation whatsoever on account of delay in procurement or supply of controlled materials and the rates quoted in the contract are fixed till the completion of the contract.
- 1.8.3. The contractor shall co-operate with other agencies appointed by the owners for the work to proceed smoothly with the least possible delay and to the satisfaction of the owners, architects and the consultants.
- 1.8.4. The owners shall provide a source for power supply at one convenient point at site. The contractor shall at his own cost install a separate meter at the said source and lay additional cables from the said source also at his own cost. For the electricity consumed by the contractor he shall pay the owner the actual cost at the rate charged by the local authority for power for constructional purposes. The contractor shall also obtain the necessary permit for utilizing power for constructional purposes.

## **2 SPECIAL CONDITIONS**

### **2.1. EXECUTION WORK**

2.1.1. The whole of the work as described in the contract (including bills of materials, specification and all drawings pertaining thereto) and as advised by the Engineer-in-charge from time is to be carried out and completed in all parts to the entire satisfaction of the Employer. Any minor details of construction which are obviously and fairly intended, or which may not have been definitely referred to in this contract, but which are usual construction practice and essential to the work, shall be included in this contract.

### **2.2. CERTIFICATE OF COMPLETION**

2.2.1 The contractor shall intimate to the Engineer-in-charge in writing as and when the works are completed and put into beneficial use in order to enable the consultants to check certify to the owners to take over the plants.

2.2.2 The work shall not be considered as completed and put into beneficial use until the consultants have certified in writing that the same has been completed and put into beneficial use.

2.2.3 The defects liability period of one year shall commence from date of such completion or any specific date mentioned therein.

**APPROVED VENDORS LIST FOR ELECTRICAL SYSTEM**

<b>S.No.</b>	<b>MATERIALS</b>	<b>PREFERED MAKE</b>
1	LT UG cables	Gloster / Torrent / Havells / Polycab
2	LT cable gland, lugs	Comet / Dowell / Jainson / Hex
3	MCCB	L&T / Siemens / Schneider / GE
4	SDFU, Isolators	L&T / Siemens / Schneider / GE
5	Relays	L&T / GE / Schneider / Siemens.
6	Resin cast CTs	Kappa / Intrans / Resitech / PGR Powertech
7	Measuring Instruments	AE / Conserv / Rishab / Schneider / L&T
8	Starters /Contractor /Bi metal Relay	L&T / Siemens / Schneider / GE / Beluk
9	Push Button /Indicating Lamps (LED Type)	Siemens / L&T / Schneider
10	Control Fuse Base with HRC Fuse	L&T / GE / Siemens / Schneider
11	Light fitting	Philips / Wipro / GE
12	Ceiling fan, Wall, Exhaust fans	Crompton / Usha / Bajaj
13	Industrial Exhaust fan, Wall fan	Almonard / Crompton / Bajaj
14	MCBs, DBs, Industrial plugs	Legrand / Schneider / Siemens
15	PVC wires (Copper)	RR Kables / Finolex / Panasonic / Lapp Kabel
16	Cat 6 UTP, telephone, co-axial cable	Finolex / RR Kabel / Panasonic / Belkin
17	Modular Switches	Legrand-Arteor / MK-Aspect / Panasonic-Vision / Crabtree - Murano
18	PVC Conduit & accessories, Casing & capping	Precision / Avon Plast / /Konseal / Balco
19	Cable tray	Profab / Patny / Indiana / Elcon
20	Lamps	Philips / Wipro / GE / Osram
21	Capacitor	Universal / Sprague / L&T / Siemens

# **BILL OF QUANTITIES**

## **ABSTRACT**

<b>SEC.</b>	<b>DESCRIPTION OF ITEM</b>	<b>AMOUNT (Rs.)</b>
<b>1</b>	<b>Electrical Works</b>	
	<b>GRAND TOTAL</b>	

**ELECTRICAL WORKS FOR ADDITIONAL TWO FLOORS AT AFT**

<b>Sl. No</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Rate (Rs. in words &amp; in fig.)</b>	<b>Amount (Rs. in words &amp; in fig.)</b>
<b>I. A. LT Wiring</b>					
1	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FR PVC insulated copper conductor single core cable in recessed medium class PVC conduit, with modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm. FR PVC insulated copper conductor single core cable etc as required.				
1.1	Group C	Each	225		
2	Wiring for twin control light point with 1.5 sq.mm FR PVC insulated copper conductor single core cable in surface / recessed steel conduit, 2 way modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm. FR PVC insulated copper conductor single core cable etc as required.	Each	4		
3	Wiring for circuit/submain wiring along with earth wire with the following sizes of FR PVC insulated copper conductor, single core cable in surface medium class PVC conduit as required.				
3.1	2 x 1.5 sq.mm + 1 x 1.5 sq.mm earth wire	m	110		

Sl. No	Description	Unit	Qty	Rate (Rs. in words & in fig.)	Amount (Rs. in words & in fig.)
3.2	2 x 2.5 sq.mm + 1 x 2.5 sq mm earth wire	m	460		
3.3	2 x 4.0 sq.mm + 1 x 4.0 sq mm earth wire	m	510		
3.4	4 x 6 sq. mm + 2 x 6 sq. mm earth wire	m	220		
3.5	4 X 10 sq. mm + 2 X 10 sq. mm earth wire	m	60		
3.6	4 X 16 sq. mm + 2 X 16 sq. mm earth wire	m	80		
4	Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.				

Sl. No	Description	Unit	Qty	Rate (Rs. in words & in fig.)	Amount (Rs. in words & in fig.)
4.1	20 mm	m	85		
4.2	25 mm	m	125		
5	Supplying and drawing 2 pair 0.5 sq mm FR PVC insulated annealed copper conductor, unarmored telephone cable in the existing surface/ recessed steel/ PVC conduit as required.	m	220		
6	Supplying and fixing Telephone socket outlet on the existing modular plate & switch box including connections but excluding modular plate etc. as required.	Each	25		
7	Supplying and fixing stepped type electronic fan regulator-modular on the existing modular plate switch box including connections but excluding modular plate etc. as required.	Each	30		

<b>Sl. No</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Rate (Rs. in words &amp; in fig.)</b>	<b>Amount (Rs. in words &amp; in fig.)</b>
8	Supply and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	Each	50		
9	Supplying and fixing following size / modules, PVC box alongwith modular base & cover for modular telephone/ data sockets in recess / surface etc as required.				
9.1	1 or 2 module	Each	25		
10	Supplying and fixing suitable size PVC box with modular plate and cover in front on surface or in recess, including providing and fixing 3 pin 5/6 amps modular socket outlet and 5/6 amps modular switch, connection etc. as required.	Each	40		
11	Supplying and fixing suitable size PVC box with modular plate and cover in front on surface or in recess, including providing and fixing 6 pin 5/6 & 15/16 amps modular socket outlet and 15/16 amps modular switch, connection etc. as required.	Each	30		
12	Supplying and fixing 3 pin, 5 amp ceiling rose on the existing junction box/ wooden block including connection etc as required.	Each	30		

<b>Sl. No</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Rate (Rs. in words &amp; in fig.)</b>	<b>Amount (Rs. in words &amp; in fig.)</b>
13	Supplying and fixing brass batten/ angle holder including connection etc. as required.	Each	8		
14	Installation, testing and commissioning of pre-wired, fluorescent fitting / compact fluorescent fitting of all types, complete with all accessories and tube etc. directly on ceiling/ wall, false ceiling with chain and hook including connection with 1.5 sq. mm FR PVC insulated, copper conductor, single core cable and earthing etc. as required.	Each	45		
15	Installation, testing and commissioning of ceiling fan, including wiring the down rods of standard length (upto 30 cm) with 1.5 sq. mm FR PVC insulated, copper conductor, single core cable etc. as required.	Each	30		
16	Installation of exhaust fan in the existing opening, including making good the damage, connection, testing, commissioning etc. as required.				
16.1	Upto 450 mm sweep	Each	20		

Sl. No	Description	Unit	Qty	Rate (Rs. in words & in fig.)	Amount (Rs. in words & in fig.)
17	Supplying and fixing extra conduit down rod of 20 cm length G.I. pipe 15 mm dia, heavy gauge including painting etc. as required. (Note : More than 5 cm length shall be rounded to the nearest 10 cm and 5 cm or less shall be ignored)	Each	20		
	<b>Total Amount in Rs</b>				
<b>B. MCBs, DBs and Cable Trays</b>					
1	Supplying and fixing following way prewired vertical type TP&N MCB distribution board of steel sheet for 415 volts on surface/ recess complete with loose wire box of sheet steel, dust protected, duly powder painted, inclusive of 200 amps tinned copper bus bar, common neutral link, earth bar, din bar for mounting MCB's, terminal connectors for all incoming and outgoing circuits, duly prewired with adequate size of FR PVC insulated copper conductor upto the terminal connector/ neutral link, earthing etc as required (But without MCB/ RCCB/ Isolator). (Note : Prewired vertical type MCB TPDB is normally used where 3 phase outlets are required.)				
1.1	8way, Double door	Each	1		

Sl. No	Description	Unit	Qty	Rate (Rs. in words & in fig.)	Amount (Rs. in words & in fig.)
2	Supplying and fixing following way prewired TP&N MCB distribution board of steel sheet for 415 volts on surface/ recess complete with loose wire box, terminal connectors for all incoming and outgoing circuits, duly prewired with suitable size FR PVC insulated copper conductor up to terminal blocks, tinned copper bus bar, neutral link, earth bar, din bar, detachable gland plate, interconnections, powder painted including earthing etc. as required.(But without MCB/ RCCB/ Isolator)				
2.1	4 way, Double door	Each	1		
2.1	6 way, Double door	Each	2		
2.3	8 way, Double door	Each	1		

<b>Sl. No</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Rate (Rs. in words &amp; in fig.)</b>	<b>Amount (Rs. in words &amp; in fig.)</b>
3	Supplying and fixing following rating, four pole, 415 volts, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
3.1	40 amps	Each	2		
3.2	63 amps	Each	2		
4	Supplying and fixing following rating, four pole, (three phase and neutral), 415 volts, residual current circuit breaker (RCCB), having a sensitivity current upto 300 milliamperes in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
4.1	25 amps	Each	1		
4.2	40 amps	Each	2		

<b>Sl. No</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Rate (Rs. in words &amp; in fig.)</b>	<b>Amount (Rs. in words &amp; in fig.)</b>
4.3	63 amps	Each	2		
5	Supplying and fixing 5 amps to 32 amps rating, 240/415 volts, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
5.1	Single pole	Each	60		
5.2	Triple pole	Each	10		
5.3	Triple pole and neutral	Each	4		

<b>Sl. No</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Rate (Rs. in words &amp; in fig.)</b>	<b>Amount (Rs. in words &amp; in fig.)</b>
6	Supplying and fixing single pole blanking plate in the existing MCB DB complete etc as required.	Each	40		
7	Supply and fixing TP sheet steel enclosure on surface recess along with 16/25/32/ amps 415V "C" curve TP MCB complete with connections, testing and commissioning etc as required.	Each	17		
8	Supplying and fixing 20 amps, 240 volts, SPN industrial type, socket outlet, with 2 pole and earth, metal enclosed plug top alongwith 20 amps "C" curve, SP, MCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket outlet and complete with connections, testing and commissioning etc. as required.	Each	15		
9	Supplying and fixing 30 amps, 415 volts, TPN industrial type, socket outlet, with 4 pole and earth, metal enclosed plug top alongwith 30 amps "C" curve, TPMCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket outlet and complete with connections, testing and commissioning etc. as required.	Each	3		

<b>Sl. No</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Rate (Rs. in words &amp; in fig.)</b>	<b>Amount (Rs. in words &amp; in fig.)</b>
10	Supply and installing 150mm x 50 mm depth x 1.6mm thick perforated GI cable trays with perforations not more than 17.5% in convenient sections, joined with connectors, GI suspenders including nuts and bolts, bends, tees etc as required	m	30		
11	Supply and installing 300mm x 50 mm depth x 1.6mm thick perforated GI cable trays with perforations not more than 17.5% in convenient sections, joined with connectors, GI suspenders including nuts and bolts, bends, tees etc as required	m	35		
<b>Total Amount in Rs</b>					
<b>C. Earthing</b>					
1	Earthing with G.I earth pipe 4.5 meter long ,40mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangements and watering pipe etc .with charcoal and /coke and salt as required.	Set	14		
2	Earthing with GI earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	Each	4		

<b>Sl. No</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Rate (Rs. in words &amp; in fig.)</b>	<b>Amount (Rs. in words &amp; in fig.)</b>
3	Earthing with Copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	Each	4		
4	Supply and laying 25mm x 5mm copper strip at 0.5m below ground as strip earth electrode, including connection / terminating with nut, bolt, spring, washer etc as required (Jointing shall be done by overlapping and with 2 sets of brass nut bolt & spring washer spaced 50mm).	m	20		
5	Supply and laying 25mm x 5mm GI strip at 0.5m below ground as strip earth electrode, including connection / terminating with nut, bolt, spring, washer etc as required (Jointing shall be done by overlapping and with 2 sets of GI nut bolt & spring washer spaced 50mm).	m	30		
6	Providing and fixing 25 mm X 5 mm Copper strip on surface or in recess for connections etc. as required.	m	80		

Sl. No	Description	Unit	Qty	Rate (Rs. in words & in fig.)	Amount (Rs. in words & in fig.)
7	Providing and fixing 25 mm X 5 mm GI strip on surface or in recess for connections etc. as required.	m	80		
8	Providing and fixing 8 SWG dia G.I. wire on surface or in recess for loop earthing as required.	m	120		
9	Providing and fixing 4mm dia copper wire on surface or in recess for loop earthing as required.	m	80		
<b>Total Amount in Rs</b>					
<b>D. Lighting Conductor</b>					
1	Providing and fixing of lightning conductor finial, made of 25 mm dia 300mm long, Copper tube, having single prong at top, with 85mm dia 3mm thick copper base plate including holes etc. complete as required.	Each	2		

<b>Sl. No</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Rate (Rs. in words &amp; in fig.)</b>	<b>Amount (Rs. in words &amp; in fig.)</b>
2	Providing and fixing GI tape of 20 mm x3mm thick on parapet or surface of wall for lightning conductor complete as required (For horizontal run).	m	110		
3	Providing and fixing GI tape of 20 mm x3mm thick on parapet or surface of wall for lightning conductor complete as required (For vertical run)	m	150		
4	Providing and fixing testing joint made of 20mm x3mm thick GI strip 125mm long , with 4 nos of G.I bolts ,nuts, chuch nuts and spring washers etc.complete as required.	m	4		
5	Providing and laying G.I tape 32mm x 6mm from earth electrode directly in ground as required.	m	125		
	<b>Total Amount in Rs</b>				
<b>E. MV Cable laying and Termination</b>					

<b>Sl. No</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Rate (Rs. in words &amp; in fig.)</b>	<b>Amount (Rs. in words &amp; in fig.)</b>
1	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing masonry open duct as required.				
1.1	Upto 35 sq. mm	m	205		
1.2	Above 35 sq. mm and upto 95 sq. mm	m	100		
2	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on wall surface as required.				
2.1	Upto 35 sq. mm (clamped with 1mm thick saddle)	m	200		
2.2	Above 35 sq. mm and upto 95 sq. mm (clamped with 25x3mm MS flat clamp)	m	100		

<b>Sl. No</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Rate (Rs. in words &amp; in fig.)</b>	<b>Amount (Rs. in words &amp; in fig.)</b>
3	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on cable tray as required.				
3.1	Upto 35 sq. mm (clamped with 1mm thick saddle)	m	200		
3.2	Above 35 sq. mm and upto 95 sq. mm (clamped with 25x3mm MS flat clamp)	m	50		
4	Supplying and making cable route marker with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size ) of size 60 cm X 60 cm at the bottom and 50 cm X 50 cm at the top with a thickness of 10cm including inscription duly engraved as required.	Each	20		
5	Supplying and making end termination with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.				

<b>Sl. No</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Rate (Rs. in words &amp; in fig.)</b>	<b>Amount (Rs. in words &amp; in fig.)</b>
5.1	3.5 x 95 sqmm cable	Each	4		
5.2	3.5 x 70 sqmm cable	Each	2		
5.3	3.5 x 35 sqmm cable	Each	8		
5.4	3.5 x 25 sqmm cable	Each	8		

<b>Sl. No</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Rate (Rs. in words &amp; in fig.)</b>	<b>Amount (Rs. in words &amp; in fig.)</b>
5.5	4 x 16 sqmm cable	Each	16		
5.6	4 x 10 sqmm cable	Each	4		
5.7	4 x 6 sqmm cable	Each	20		
6	Providing, laying and fixing following dia G.I. pipe (medium class) in ground complete with G.I. fittings including trenching (75 cm deep)and re-filling etc as required				
6.1	50 mm dia	m	50		

Sl. No	Description	Unit	Qty	Rate (Rs. in words & in fig.)	Amount (Rs. in words & in fig.)
7	Providing, laying and fixing of 150 mm dia RCC pipe NP2 class (light duty) in ground complete with RCC collars, jointing with cement mortar 1:2 (1 cement : 2 fine sand) including trenching (75 cm deep) and refilling etc as required.	m	20		
<b>Total Amount in Rs</b>					
<b>II</b>					
<b>A. LT Panel Board and Accessories</b>					
1	Supply, Installation, Testing & Commissioning of cubicle type Main LT panel board, made out of 2mm thick CRCA sheet, totally enclosed, IP42, free standing, floor mounting, dust and vermin proof, powder coated, indoor, compartmentalised, suitable for operation on 3 phase and neutral, 415 V, 50Hz AC system, including internal wiring with suitable size wires, rotary handle, spreaders etc. The panel shall include supply & installation of following switchgears, metering instruments and accessories as per specification.				
	<b>Incomer</b>				
	1 no. 400A, 35kA, TP+NL MCCB having isolation duty with E/F release, adjustable thermal magnetic release for O/L & SC protection.				
	<b>Busbar</b>				
	1 Set of 500 Amp TPN busbars of high conductivity electrolytic quality Aluminium alloy.				
	1 Set of 25 x 3 mm copper busbars of high conductivity electrolytic quality shall be provided throught out the panel for its earthing.				
	<b>Instruments</b>				

Sl. No	Description	Unit	Qty	Rate (Rs. in words & in fig.)	Amount (Rs. in words & in fig.)
	1 No 3 phase Digital Multi function meter to read V, A, F with Acc class 1.				
	1 No 3 phase 4 wire CT operated energy meter, 5-10A, Acc. Class 1.				
	1 Set of phase indicating lamps, LED type, RYB.				
	1 Set of 2A 10kA C curve SP control MCB				
	1 Set of 400/5A, Class 1.0, 10VA, Cast Resin CT for metering.				
	1 Set of 400/5A, Class 1.0, 10VA, Cast Resin CT for APFC relay.				
	3 nos Ammeter (0-400A), Acc class 1 with 240 deg., defl. Scale.				
	<b>Outgoing</b>				
	2 nos. 160A, 25kA, TP+NL MCCB with, adjustable thermal magnetic release for O/L & SC protection.				
	3 nos. 125A, 25kA, TP+NL MCCB with, adjustable thermal magnetic release for O/L & SC protection.				
	6 nos. 63A, 16kA, TP+NL MCCB with, adjustable thermal magnetic release for O/L & SC protection.	Job	1		
2	Supply, Installation, Testing & Commissioning of Second Floor panel, cubicle type, made out of 2mm thick CRCA sheet, totally enclosed, IP42, free standing, floor mounting, dust and vermin proof, powder coated, indoor, compartmentalised, suitable for operation on 3 phase and neutral, 415 V, 50Hz AC system, including internal wiring with suitable size wires, rotary handle, spreaders, 3mm thick gland plate, hinged type door with neoprene gasket etc. The panel shall include supply & installation of following switchgears, metering instruments and accessories as per specification.				

Sl. No	Description	Unit	Qty	Rate (Rs. in words & in fig.)	Amount (Rs. in words & in fig.)
	<b>Incomer</b>				
	125A TP+NL 25kA MCCB with thermal magnetic release with adjustable OL, SC protection - 1 no.				
	<b>Busbar</b>				
	1 Set of 150 A TPN busbars of high conductivity electrolytic quality Aluminium alloy.				
	1 Set of 25 x 3 mm copper busbars of high conductivity electrolytic quality shall be provided through out the panel for its earthing.				
	<b>Instruments</b>				
	2A, C curve SP MCB - 3 nos.				
	RYB indication lamp, LED type - 3 nos.				
	1 No 3 phase Digital Multi function meter to read V, A, F Acc class 1.				
	125/5A 10VA class 1 resin cast CT - 1 set				
	3 phase 4 wire CT operated, (5-10) A electronic type energy meter, Acc. Class 1 - 1 no.				
	<b>Outgoing.</b>				
	63A TPN C curve MCB - 1 no				
	40A TPN C curve MCB - 2 nos.				
	32A TPN C curve MCB - 4 nos.				
	25A TPN C curve MCB - 2 nos.	Job	1		

Sl. No	Description	Unit	Qty	Rate (Rs. in words & in fig.)	Amount (Rs. in words & in fig.)
3	Supply, Installation, Testing & Commissioning of Third Floor panel, cubicle type, made out of 2mm thick CRCA sheet, totally enclosed, IP42, free standing, floor mounting, dust and vermin proof, powder coated, indoor, compartmentalised, suitable for operation on 3 phase and neutral, 415 V, 50Hz AC system, including internal wiring with suitable size wires, rotary handle, spreaders, 3mm thick gland plate, hinged type door with neoprene gasket etc. The panel shall include supply & installation of following switchgears, metering instruments and accessories as per specification.				
	<b>Incomer</b>				
	160A TP+NL 25kA MCCB with thermal magnetic release with adjustable OL, SC protection - 1 no.				
	<b>Busbar</b>				
	1 Set of 200 A TPN busbars of high conductivity electrolytic quality Aluminium alloy.				
	1 Set of 25 x 3 mm copper busbars of high conductivity electrolytic quality shall be provided through out the panel for its earthing.				
	<b>Instruments</b>				
	2A, C curve SP MCB - 3 nos.				
	RYB indication lamp, LED type - 3 nos.				
	1 No 3 phase Digital Multi function meter to read V, A, F Acc class 1.				
	160/5A 10VA class 1 resin cast CT - 1 set				
	3 phase 4 wire CT operated, (5-10) A electronic type energy meter, Acc. Class 1 - 1 no.				
	<b>Outgoing.</b>				
	63A TPN C curve MCB - 2 nos.				
	40A TPN C curve MCB - 2 nos.				

Sl. No	Description	Unit	Qty	Rate (Rs. in words & in fig.)	Amount (Rs. in words & in fig.)
	32A TPN C curve MCB - 5 nos.				
	25A TPN C curve MCB - 2 nos.	Job	1		
4	Supply, Installation, Testing & Commissioning of 50kVAR APFC panel, cubicle type, made out of 2mm thick CRCA sheet, totally enclosed, IP42, free standing, floor mounting, dust and vermin proof, powder coated, indoor, compartmentalised, suitable for operation on 3 phase and neutral, 415 V, 50Hz AC system, including internal wiring with suitable size wires, rotary handle, spreaders etc. The panel shall include supply & installation of following switchgears, metering instruments and accessories as per specification.				
	<b>Incomer</b>				
	125A TP+NL 25kA MCCB with thermal magnetic release with adjustable OL, SC protection - 1 no.				
	<b>Busbar</b>				
	1 Set of 150 Amp TPN busbars of high conductivity electrolytic quality Aluminium alloy.				
	<b>Instruments</b>				
	1 No 3 phase Digital Multi function meter to read V, A, F with Acc class 1.				
	1 Set of phase indicating lamps, LED type, RYB.				
	1 Set of 2A 10kA C curve SP control MCB				
	1 Set of 125/5A, Class 1.0, 10VA, Cast Resin CT for metering.				
	1 no. 6 stage microprocessor based APFC relay				
	5 set On, Off push button				

Sl. No	Description	Unit	Qty	Rate (Rs. in words & in fig.)	Amount (Rs. in words & in fig.)
	5 set On, Off LED type indication lamp				
	1 set Auto / manual selector switch.				
	<b>Outgoing</b>				
	4 No 32A, TPN, C curve MCB.				
	2 No 25A, TPN, C curve MCB.				
	4 Nos. 10kVAR MPP heavy duty capacitor with capacitor duty contactor.				
	1 Nos. 5kVAR MPP heavy duty capacitor with capacitor duty contactor.				
	1 No. 5kVAR MPP heavy duty capacitor directly connected.	Each	1		
	<b>Total Amount in Rs</b>				
<b>B. LT Cables</b>					
1	Supply of the following size 1.1kV grade XLPE insulated PVC sheathed, armoured Aluminium conductor power cable confirming to IS 7098 (part 1) ammended upto date.				
1.1	3.5 x 95 sqmm cable	m	95		

<b>Sl. No</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Rate (Rs. in words &amp; in fig.)</b>	<b>Amount (Rs. in words &amp; in fig.)</b>
1.2	3.5 x 70 sqmm cable	m	65		
1.3	3.5 x 35 sqmm cable	m	45		
1.4	3.5 x 25 sqmm cable	m	85		
1.5	4 x 16 sqmm cable	m	230		
1.6	4 x 10 sqmm cable	m	50		

Sl. No	Description	Unit	Qty	Rate (Rs. in words & in fig.)	Amount (Rs. in words & in fig.)
1.7	4 x 6 sqmm cable	m	240		
<b>Total Amount in Rs</b>					
<b>C. Light Fixtures</b>					
1	Supply of 1x28W fluorescent tube fitting, powder coated CRCA steel channel complete with all electrical accessories like electronic ballast, lamp holder, 28W T5 lamp etc complete as required. (Philips TMS122M IxTL-528W EBT / Wipro WIF 90128 SG / GE GET CI 1x28 C/S HF)	Each	20		
2	Supply and installation of recess mounted type 2x36W CFL clean room light fitting with option of rear opening / front opening in robust CRCA housing, glass cover with all electrical accessories like electronic ballast, lamp holder, 36W CFL lamps, mounting chain, hook etc complete as required. (Philips FCS650 2xPL-L36W EBP FOP GT / Wipro WIP 43236 SGA / GE CRP 236CFL BO)	Each	40		
3	Supply of 1x36W surface mounting mirror optic luminaire with paralite P5 louvers with all electrical accessories like electronic ballast, lamp holder, 36W CFL lamps etc complete as required. (Wipro WVP 25136 SGW / GE GE CFL 2x18W MOP)	Each	10		

<b>Sl. No</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Rate (Rs. in words &amp; in fig.)</b>	<b>Amount (Rs. in words &amp; in fig.)</b>
4	Supply and installation of 2x36W recess mounted direct - indirect downlight luminaire, with translucent acrylic diffuser, powder coated CRCA housing complete with all electrical accessories like electronic ballast, lamp holder, 36W CFL lamp, mounting chain, hook etc complete as required. (Philips FBS580 2xPL-L36W IC OD DF-WH / Wipro WVP 76236 SGA)	Each	40		
5	Supply and installation of LED Ltg, recess type, downlighter with special frosted diffuser. Wipro LD46-006-XXX-WH-XX / Philips BBS180 1xDLED-5000 PSU WH / GE GDR006 4050)	Each	20		
6	Supply & installation of recess mounted 1x18 watts down light fixture, with aluminium reflector, CRCA sheet housing, fresnel lens, complete with all accessories like ballast, 18W CFL lamp etc complete as required. (Wipro WCP 34118 SG / Philips FBH150 M 1xPL-C/4P 18W HFM / GE GECCFL1x18 DN)	Each	20		
7	Supply of 1x18W surface mounted luminaire with opal acrylic diffuser complete with all electrical accessories like electronic ballast, lamp holder, 18W T8 lamps etc. complete with all mounting accessories etc as required. (Philips TMS520/ 118 / Wipro WRF 21118 / GE TRI 118)	Each	15		

Sl. No	Description	Unit	Qty	Rate (Rs. in words & in fig.)	Amount (Rs. in words & in fig.)
8	Supply of ceiling fan 1200 mm sweep, double ball bearing, approved colour and quality with original down rod, suspension shackle, canopy etc without regulator complete with all accessories as required. (Usha Sonata max /Crompton High Breeze)	Each	30		
9	Supply and installation of 400 mm sweep, wall fan, swinging type with speed control, necessary adapter, of approved colour, for single phase 230 volt, 50Hz AC supply complete with motor, capacitor all accessories as required complete. (Usha Helix High speed or Equi).	Each	10		
10	Supply of heavy duty exhaust fan 300 mm sweep, 900 rpm, metal blades of approved colour, for single phase 230 volt, 50Hz AC supply complete with motor, capacitor and all accessories as required complete.	Each	10		
11	Supply of 250mm sweep, 1250 rpm, louvered ventilating fan suitable for single phase 230 volt, 50Hz AC supply complete with motor, capacitor, louvers/shutters and all accessories as required complete. (Make : Usha Crisp Air or equivalent)	Each	10		
	<b>Total Amount in Rs</b>				
<b>C. Telephone &amp; Networking</b>					

Sl. No	Description	Unit	Qty	Rate (Rs. in words & in fig.)	Amount (Rs. in words & in fig.)
1	Supply and Installation of 10 pair MDF box, back mount frame and original krone connectors with all accessories.	Each	4		
2	Supply and laying 10 pair 0.5 sqmm FR PVC insulated annealed copper conductor, un armoured telephone cable in surface / through pipe / including all accessories as required.	m	150		
3	Supply & fixing modular type computer outlet (RJ-45) with modular base and cover plate, GI box complete with all accessories, connection etc. complete as required.	Each	20		
4	Supply and laying 4 pair CAT 6 UTP cable in the existng surface / recessed steel / PVC conduit as required.	m	400		
<b>Total Amount in Rs</b>					
<b>D. Miscellaneous</b>					
1	Supplying and fixing following rating, 415 Volts, "C" series, miniature circuit breaker suitable for power loads of following poles in the existing MCB DB complete with connections, testing				

Sl. No	Description	Unit	Qty	Rate (Rs. in words & in fig.)	Amount (Rs. in words & in fig.)
	and commissioning etc as required.				
1.2	40A TPN MCB	Each	4		
1.3	63A TPN MCB	Each	4		
2	Supply and fixing FP sheet steel enclosure on surface recess along with 40 / 63 amps 415V FP Isolator complete with connections, testing and commissioning etc as required.	Each	5		
3	Supply and providing 6 mm thick & 1 m wide electrical grade chequered type rubber mat to withstand 3.3 KV dielectric strength conforming to IS 5429/ 1969.	m	10		
4	Supply, fabrication and fixing 3 nos MS Fire buckets on suitable fabricated MS angle iron stand with hook, painting with red paint & filled with dry sand as required with all required accessories.	Set	4		

<b>Sl. No</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Rate (Rs. in words &amp; in fig.)</b>	<b>Amount (Rs. in words &amp; in fig.)</b>
5	Supply and providing First Aid Chart duly framed and placed in a conspicuous location for clear vision.	Each	4		
6	Preparation, submission of drawings and applications for the installation and service connection to Electrical Inspectorate / KSEB and obtaining Power allocation, sanction and energising of the installation, including obtaining sanction from the authorities complete Including providing necessary assistance to the client for obtaining sanctions.	Job	1		
	<b>Total Amount in Rs</b>				