

Project : SONY OFFICE, Hyderabad					
Subject : Electrical LT BOQ					
Date : 07.07.2021					
S.No.	DESCRIPTION OF WORK	UNIT	QTY	RATE	AMOUNT
PREAMBLE:					
a	Whether explicitly mentioned under each item or not, technical / general specifications accompanying this BOQ shall be followed for both material description as well as for the method of installation / execution.				
b	All the items of work shall be treated as supply, installation, testing and commissioning unless otherwise mentioned explicitly				
c	Incase of any discrepancy between the technical specifications, drawings or the BOQ, BOQ shall prevail.				
d	Incase of lack of sufficient description either for the material or for the installation, description in BIS shall prevail.				
e	The configuration of panel board shall be linear or "L" shape or "C" shape to suit availability of space in the panel room. Change of configuration shall not attract any price variation.				
f	Panel are designed for block set type.				
g	Panel boards shall be designed to suit cable entry either from top / bottom as per site conditions.				
Note :					
1	All Meters shall be Digital type with BMS compatibility				
2	Releases in breakers shall be as follows Incomers :- MCCB : O/L, S/C & E/F Outgoings & feeders :- MCCB's : O/L, S/C				
3	Releases type in breakers shall be as follows UPS Panels : Microprocessor based without communication port All Other Panels : Thermal Magnetic based outgoing feeders / Micro processor based for incomers				
4	Neutral Link / busbar rating on UPS supply distribution panels shall be of 2 times phase & shall be same as phase in other panels.				
5	RCBO shall be of SI / HPI type				
6	MCB feeders in UPS panels shall be of ' D ' curve.				
7	Insulated shrouding shall be provided for live parts				
8	FRLS PVC copper wires shall be used for control wiring				
9	CTs shall be provided with shorting terminals				
10	The dual source PDUs for Server/Hub room shall be of different				
11	Supply, erection, testing and commissioning of 415Volts, 3Ph., 50Hz., Wall / Floor Mounted LT panels with 1.6mm thick CRCA Sheet steel, modular type construction, single front as per Specification and Single Line Diagram. The erection cost shall include base frame made out of required angles / channels and including all other accessories as required.				
1.1	Main Panel as per SLD	Each	1		
1.2	30KVA UPS	Each	1		
Total C/O to Summary					

S.No.	DESCRIPTION OF WORK	UNIT	QTY	RATE
2.0	MCB DISTRIBUTION BOARDS			
	MCB Distribution boards			
	<p>Wall mounted MCB DBs with MS wire way box on top / bottom & on sides. MCBs shall be rated for 10kA with current limiting feature.</p> <p>Dummy ways to be covered with blank plates. All out going ways shall be labelled & laminated.</p> <p>Enclosure: 1.2mm CRCA Sheet Steel, Powder Coated</p> <p>Door : Double Door</p> <p>Protection : IP 42</p> <p>Cable Entry : Top & Bottom</p> <p>For UPS distribution ELCB's shall be harmonic resistant (SI Series)</p> <p>Bus bar : Shall be tinned Copper and 200% rating for UPS DB</p> <p>Neutral Link</p> <p>MCB's : 10kA 'C' Curve for Lighting & Raw power, 10kA 'D' Curve for UPS Distribution.</p>			
	<p>Note:</p> <ol style="list-style-type: none"> 1) Separate Earth bus/Neutral bus for each phase 2) Each Circuit shall have yellow ferrules with circuit number. 3) Accessories required for installation of DB's on Wall/Column/Gyp Board shall be considered 4) DB's shall be covered with powder coated (paint should match with DB Color) wire ways all around and up to ceiling to receive incoming circuits, how ever raceway shall be considered as a separate items 5) Laminated A3 OR A4 size SLD copy shall be pasted inside DB door 6) Safe shroud for Neutral link shall be provided 			
2.1	MCB DB - Vertical / horizontal double door type			
	Incomer - 63A, TPN, MCB			
	Outgoing - 10/16A, SP, MCB "C" - 36 No's	No	RO	
2.2	MCB DB - Vertical / horizontal double door type (UPS DB)			
	Incomer - 63A, TPN, MCB			
	Outgoing - 10/16A, SP, MCB "C" - 24 No's	No	2	
2.3	MCB DB - Vertical / horizontal double door type (UPS DB)			
	Incomer - 63A, TPN, MCB			
	Outgoing - 10/16A, SP, MCB "C" - 18 No's	No	3	
2.4	MCB DB - Vertical / horizontal double door type (Power DB)			
	Incomer - 63A, TPN, MCB			
	Outgoing - 10/16A, SP, MCB "C" - 18 No's	No	2	

S.No.	DESCRIPTION OF WORK	UNIT	QTY	RATE
2.5	MCB DB - Vertical / horizontal double door type (Lighting DB)			
	Incomer - 63A, TPN, MCB			
	Outgoing - 10/16A, SP, MCB "C" - 18 No's	No	2	
	MCB DB - Vertical / horizontal double door type (Cafeteria DB)			
	Incomer - 63A, TPN, MCB			
	Outgoing - 10/16A, SP, MCB "C" - 12 No's	No	1	
2.6	MCB DB - Vertical / horizontal double door type (Emergency DB)			
	Incomer - 40A, DP, ELCB 30mA			
	Outgoing - 10/16A, SP, MCB - 10No's	No	1	
2.7	MCB ACDB - Vertical / horizontal double door type (Floor VTPN DB)			
	Incomer - 100A, TPN, MCCB			
	Outgoing - 40A, DP, MCB - 3No's			
	Outgoing - 63A, TPN, MCB - 5No's	No	1	
Total C/O to Summary				
3.0	POWER AND CONTROL CABLES :			
	Supply, Laying and testing of 1.1 KV Grade PVC insulated XLPE Al. / Cu. Conductor, steel armoured Power Cables (XLPE A2XFY/YWY/YFY) as per specification. The rates quoted for laying shall include laying of cables either in cable trays or under ground cable trenches (indoor/outdoor).			
3.1.1	3.5 Core x 95 Sqmm Aluminium Armoured Cable	Mtr	80	
3.1.2	3.5 Core x 50 Sqmm Aluminium Armoured Cable	Mtr	RO	
3.1.3	4 Core x 16 Sqmm Aluminium Armoured Cable	Mtr	500	
3.1.4	4 Core x 10 Sqmm Aluminium Armoured Cable	Mtr	300	
3.1.5	3 Core x 6 Sqmm Copper Armoured Cable	Mtr	250	
3.1.6	1 Core x 16 Sqmm Copper Flexible Cable	Mtr	50	
3.1.7	1 Core x 10 Sqmm Copper Flexible Cable	Mtr	RO	
3.2	CABLE TERMINATIONS :			
	Supply and erection of 1.1 KV Grade PVC insulated cables cable terminations with Al. / Cu. lugs, double compression type cable glands, PVC insulation tapes and all other accessories as required.			
3.2.1	3.5 Core x 95 Sqmm Aluminium Armoured Cable	No	2	
3.2.2	3.5 Core x 50 Sqmm Aluminium Armoured Cable	Mtr	RO	
3.2.3	4 Core x 16 Sqmm Aluminium Armoured Cable	Mtr	16	
3.2.4	4 Core x 10 Sqmm Aluminium Armoured Cable	No	4	
3.2.5	3 Core x 6 Sqmm Copper Armoured Cable	No	12	
3.2.6	1 Core x 16 Sqmm Copper Flexible Cable	No	4	

S.No.	DESCRIPTION OF WORK	UNIT No	QTY RO	RATE
3.2.7	1 Core x 10 Sqmm Copper Flexible Cable			
Total C/O to Summary				
4.0	SUBMAINS / CIRCUIT MAINS / POWER WIRING :			
	Wiring of Submains / circuit mains shall be concealed or surface conduit system in conduits. 1100 V grade FRLS copper flexible wires for Phase, neutral & earth etc., complete. Circuit mains using 1.1kV grade PVC insulated copper conductor (FRLS) wires / PVC insulated wires drawn in 2mm thick rigid MS/PVC conduit. Rates quoted shall include supply of conduits, wires & other conduiting accessories. Circuit mains shall be measured from respective DB to the nearest control switch / socket board & sub mains reckoned for looping from switch / socket to another switch / socket board. Colour coding shall be used for conduits to differentiate lighting, RP, UPS, emergency lighting circuits & point wiring. All circuit terminations shall be provided with solder less crimping type copper sockets / lugs & ferrules indicating source code on load side & load code on source side. There shall not be any joints in the circuits, only loopin is allowed in terminal blocks & in switches / socket outlets.			
	Note :			
	There is no sub-circuit measurements.			
	19 / 25 mm dia, 2mm thick rigid MS/PVC Conduit shall be used wherever conduits are specified			
4.1	32 mm dia, PVC conduit with all accessories	Mtr	RO	
4.2	25 mm dia, PVC conduit with all accessories	Mtr	1500	
4.3	3 C x 2.5 sq.mm (YY) PVC insulated PVC sheathed multi strand copper conductor cable in conduit /existing raceway.	Mtr	5000	
4.4	3 C x 4 sq.mm (YY) PVC insulated PVC sheathed multi strand copper conductor cable in conduit /existing raceway.	Mtr	3200	
4.5	Supply and running of 3R x 4.0Sq.mm FRLS PVC insulated copper wire Including 19mm dia conduit with terminations on either side and all other accessories as required.	Mtr	2500	
4.6	Supply and running of 3R x 2.5Sq.mm FRLS PVC insulated copper wire Including 19mm dia conduit with terminations on either side and all other accessories as required.	Mtr	3500	
Total C/O to Summary				
5.0	POWER RECEPTACLES.			

S.No.	DESCRIPTION OF WORK	UNIT	QTY	RATE
	The quoted rate for power sockets outlets shall include : Socket outlets - round / round cum flat / flat multi pin, switches, 14SWG metal boxes with knockout on all sides, front plate of required colours with accessories. The front plate edges to be curved. All switch / sockets shall be provided with printed labels / stickers indicating source code.			
	Colour code for UPS socket plates :as per Client requirement. Colour code for RP socket plates : Black / Grey / as per			
	All switch / sockets including fnt plate & frame which shall be mounted on the metal boxes and same shall have removable film coat to pTECT fm scratches & paint during installation.			
5.1	2 x 6A Universal Socket outlet controlled by 2x6A Switch for Workstations UPS power (workstation)	No	165	
5.2	1 Nos 6/16A Universal socket outlet controlled by 16A switch for UPS power (Projector)	No	11	
5.3	1 No 16A 5pin switched socket outlet controlled by 1 No 16A switch for Raw power (Maintenance)	No	65	
5.4	25A, 3pin single phase shuttered switched socket outlet with 2 Module box and indicator lamp type 25A switch at separate location in Module box as required including termination of wires. (A/C)	No	60	
Total C/O to Summary				
6.0	POINT WIRING : FOR LIGHTS			
	Wiring with 3R x 1.5Sq.mm PVC insulated 1100V grade FRLS copper wire in including PVC conduit & Flexible conduit as per specification. The rate shall include all wiring materials, switches, sockets, switch box complete.			
	NOTE: The wiring drawn from DB to first switch box & power points in a room shall be measured under the heading circuit			
6.1	Single light point controlled by a 6A switch	No	50	
6.2	Two light point controlled by a 6A switch	No	20	
6.3	Three light point controlled by a 6A switch	No	15	
6.4	Four to Six light point controlled by a 6A switch/MCB	No	10	
6.5	Seven to Ten light points controlled by a 6A switch/MCB	No	5	
6.6	Supply Installation Testing & Commissioning of Wall Mounted Celng Fan Point along with 6A one way switch & 2Module stepped electronic regulator in G.I box with 3R 1.5Sqmm HFFR insulated copper wire in 1.8mm thick PVC conduit along with plate etc complete associated accessories as per the site conditions etc.excluding supply of fan	No	30	
Total C/O to Summary				
7.0	INDOOR LIGHTING FIXTURES WITH LAMPS			

S.No.	DESCRIPTION OF WORK	UNIT	QTY	RATE
	NOTE: All fittings shall be with electronic ballasts only. All the LED fixtures shall be provided with PF improvement condenser compulsorily. Tubes shall be of colour 84 (cool day light). Also the rates quoted shall also include the cost of Lamps, ball & socket suitable for 25mm dia conduits, round blocks, PVC holders, 25mm dia GI pipe drops for suspending the fixtures, fans., all complete as required.			
7.1	Supply, Erection, Testing & Commissioning of 12.3W Recess Mounted Circular down LED Light and all other fixing accessories as required.	No	75	
7.2	Supply, Erection, Testing & Commissioning of 8W Recess Mounted Circular down LED Light and all other fixing accessories as required.	No	30	
7.3	Supply, Erection, Testing & Commissioning of 2'x2' 29W LED Light Fixture in False Ceiling as per the Arch Design	No	110	
Total C/O to Summary				
8.0	CABLE TRAYS			
8.1	Supply and Installation of the following sizes of Cable trays suspended from the ceiling or Along the wall or in trench or on floor, Refer standard: IS 1079 & 513 Material: Mild steel Finish: Pre Galvanized for indoor & Hot dip galvanized for Outdoor. Thickness: 2.5mm Type: Ladder or Perforated Rung Spacing:300mm Rung width: 3 5mm Supports: Up to 300mm wide using Hi-tech Rod and above 300mm wide using MS angle supports with anticorrosive paint at an intervals of 500mm. Accessories: Couplers, Bends, Reducers, Tees & Cross junctions shall be considered. The trays installed on floor shall be mounted on C clamp Note: The trays used inside the office area for power cabling shall be only perforated.			
	Ladder type			
8.1.1	450 mm x 50 mm	Mtr	100	
8.1.2	300 mm x 50 mm	Mtr	RO	
	Perforated type with top cover			
8.2.1	450 mm x 50 mm	Mtr	250	
8.2.2	300 mm x 50 mm	Mtr	800	
8.2.3	150 mm x 50 mm	Mtr	350	
8.2.4	100 mm x 75 mm	Mtr	150	
Total C/O to Summary				
9.0	RACEWAYS			

S.No.	DESCRIPTION OF WORK	UNIT	QTY	RATE
	<p>Supply & Installation of following size Aluminium raceway wire way with cover, made out of 16 SWG GI for body and 14 SWG GI for cover.</p> <p>Junction boxes to be provided with enough supports inside the box.</p> <p>Raceway installed above false ceiling/floor shall include necessary mounting supports, junction boxes and accessories to fix it firmly to the ground/ ceiling.</p> <p>The raceways shall be fixed to the floor with GI (25mm x 3mm) strips so that there is no movement of the channels when civil work (pouring of cement concrete) is being done.</p> <p>Rate includes necessary floor cutting and chipping with machine of minimum 75mm depth, removal of debris out of site and neatly finished with M15 grade concrete up to the finished floor level. Race ways to be covered with Chicken mesh before concreting. Curing compound to be applied after initial setting of the concrete.</p> <p>All edges, cut faces shall be free of burrs & shall be smooth.</p> <p>The channels shall be earthed at the boxes and at the joints with 14 SWG bare copper wire with screws so that earth is continuous.</p> <p>Jointing of the race ways to be done with welding.</p>			
9.1	2 mm thick raceway / wire way			
9.2	400 x 40 mm	Mtr	RO	
9.3	300 x 40 mm	Mtr	RO	
9.4	200 x 40 mm	Mtr	RO	
9.5	150 x 40 mm	Mtr	RO	
9.6	100 x 40 mm	Mtr	RO	
	Junction boxes made out of 2 mm thick CRCA sheet duly hot dip galvanized.			
9.7	450 x 450 x 50 mm	No	RO	
9.8	350 x 350 x 50 mm	No	RO	
9.9	250 x 250 x 50 mm	No	RO	
9.1	200 x 200 x 50 mm	No	RO	
9.11	150 x 150 x 50 mm	No	RO	
	Total C/O to Summary			
10.0	EARTHING			
	Supply and Providing of Safe Earthing Earth pits / Cu. Plate earth stations as per specification and IS 3043.			

S.No.	DESCRIPTION OF WORK	UNIT	QTY	RATE	
10.1	Supply & Providing 2.5 mtrs long 50 mm dia. G.I. Pipe electrode earth station for Body Earthing including construction of brick masonry, providing meshed funnel, High density cover Suitable for 40Ton Load and other civil Engineering works, spreading a homogenous mixture of salt, charcoal around the pipe and all required accessories completely as per IS 3043, 1987 or latest revision..(450mm x 450mm x 300mm chamber.(Earth strip to be left upto the Earthpit for Connection)	No	4		
10.2	Supply and Providing Copper Earth Station, with 600x600x3.15mm Copper plate at 2500mm depth including construction of brick pedestal, providing meshed funnel, High density cover Suitable for 40Ton Load and other civil Engineering works, spreading a homogenous mixture of salt, charcoal around the pipe and all required accessories completely as per IS 3043, 1987 or latest revision.	No	4		
10.3	Supply, Providing, Testing and Commissioning of Cu.bonded maintenance free electrode earth station with 3000mm long, 17.2mm outer dia,250micron molecular copper bonded low carbon steel rod earth electrode with safe carbon back fill compound including construction of brick pedestal, High density CI cover Suitable for 40Ton Load and other civil engineering works, spreading a homogenous mixture of back filling compound around the pipe and all required accessories completely as per IS 3043 latest revision. The rate shall include excavation of earth, filling with water tight back fill compound, inclusive of earth pit marker.	Ro			
10.2	Earth Strips				
10.2.1	75 x 6 mm GI Strip	Mtr	100		
10.2.2	50 x 6 mm GI strip	Mtr	150		
10.2.3	25 x 6 mm GI. strip	Mtr	50		
10.2.4	8SWG GI Wire	Mtr	150		
	Cu. Strip				
10.2.5	50 x 6 mm Cu Strip	Mtr	100		
10.2.6	25 x 6 mm Cu Strip	Mtr	80		
10.2.7	8SWG GI Wire	Mtr	100		
Total C/O to Summary					
11.0	TV, TEL & LAN DISTRIBUTION SYSTEM:				
	Supply, installation, testing and commissioning of modular TV Socket along with front plate and G.I box along with required chasing and all others complete as required.	No	5		
11.1	Supply & laying of RG-6 cable from existing PVC conduits including the termination of wires.	Mtr	200		

S.No.	DESCRIPTION OF WORK	UNIT	QTY	RATE
11.2	Supply, installation, testing and commissioning of modular intercome Socket (RJ-11) along with front plate and G.I box along with required chasing and all others complete as required.	No	20	
11.3	Supplying and laying of anealed tinned electrolytic copper conductor PVC insulated unshielded twisted flexible telephone wires (2 pair - 0.61 mm) in existing and making connection on both the ends.(JB-Points)	Mtr	500	
11.4	Supply, installation, testing and commissioning of clip type Lan Socket (RJ-45) along with front plate and G.I box along with required chasing and all others complete as required.	No	230	
11.5	Supplying and laying of CAT 6 (Data) cable excluding PVC Conduit and necessary fixing accessories like screws etc., complete as required including the termination of wires.(Shaft to CJB to points)	Mtr	5000	
	2 WAY TALK BACK & PA SYSTEM (EVS)			
11.6	Supplying, installing, testing and commissioning of 74 zone selector P.A. console and with CRCA sheet housing and control desk(rack) as required. Console shall have all call / call back facility complete with battery back up and it should also work on AC single phase power. (For 6 watt wall mounted speakers)	No	1	
11.7	Supplying, installing, testing and commissioning solid state Amplifier of 500 W RMS out put in rack, including necessary control wires, jocks etc. complete.	No	2	
11.8	Supplying, installing, testing and commissioning 6W wall mounted type speakers with talk back facility (PUSH TO TALK), in CRCA sheet fabricated housing, complete.		10	
11.9	Note: wall mounted speaker to be interfcd together. (6 watt Near stairaces)	No	20	
11.10	Supplying, installing, testing and commissioning of 4 core X 1.5 sq. mm, PVC(FRLS)insulated copper armoured cable confirming to IS standards and specifications.	Rmt	2500	
11.11	Supplying, installing, testing and commissioning approved make PVC FRLS conduits on ceiling / wall / floor etc. complete with accessories like, Junction boxes, Collars, Bends etc.			
11.1.1	32 mm dia.	Rmt	200	
11.1.2	25 mm dia.	Rmt	200	
11.1.3	20 mm dia.	Rmt	RO	

S.No.	DESCRIPTION OF WORK	UNIT	QTY	RATE
	Total C/O to Summary			
	D.G. SET			
12.0	D.G. Sets with Accoustic enclosure			
	Supply , loading , unloading and installation as desired by			
	Alternator insulation shall be class 'H' suitable to withstand			
	The Alternator shall be compatible to be synchronised to the Main LT Panel through controllers of approved make.			
	The D.G. sets shall be inclusive of but not limited to the following standard accessories:			
	Radiator Fan Cooled system			
	Fly Wheel to suit flexible/rigid coupling.			
	Fly wheel housing complete with starter gear ring and coupling.			
	Fuel hoses.			
	Electronic Governor.			
	Air Cleaner with Vacuum Indicator.			
	Fuel and Lub Oil Filter.			
	By pass filter			
	Fuel Pump PT Type.			
	Water Pump.			
	Lub Oil Pump.			
	Standard size in built fuel tank (2mm thick)			
	Drip Tray for fuel tank			
	Drip Tray below engine crank case			
	Electric Starter 24 Volts DC.			
	Battery Charging Alternator with Built-in-regulator - 24 Volts, 30 Amps and battery stand .Batteries with battery leads			
	Silencer including baffle plates and 75mm thick LRB rock wool (64 Kg/m ³ density) insulation clad with 26 SWG aluminium sheet cladding.			
	i) Expansion bellow			
	ii) Flue pipe of required size from DG set FLUE OUTLET upto			
	Safety Control against low lub oil pressure, over speed and high cooling water temperature along with tripping.			
	Lub Oil Cooler.			
	Flexible Pipe joints for Silencer.			
	Anti Vibration Pads.			
	Any other item not specifically mentioned but required for proper performance and safe working of the system.			

S.No.	DESCRIPTION OF WORK	UNIT	QTY	RATE
	Rotor temperature detector and bearing temperature detector			
	Differential CT's			
	Control Panel with Synchronisation and load sharing option equivalent to Cummins GCU or Equivalent.			
12.1	63kVA DG Set with Accoustic Enclouser	Each	1	
2.0	EXHAUST SYSTEM :			
	Note:			
	The system shall comply with the norms of PCB/ other statutory bodies.			
	5mm thick MS pipes as per IS 3589 shall be supplied. The exhaust system including the silencer must be sized to ensure that back pressure on system does not exceed the back pressure recommended by engine manufacturer. Design calculation in support shall be:			
	Pipe shall be thoroughly cleaned of rust and painted with heat resistant paint after fabrication and erection.			
	Exhaust piping and silencer shall be thermally insulated and clad with aluminum sheet.Silencer portion shall be measured double .			
	Silencers and Horizontal runs shall be supported on spring supports fixed to ceiling. Vertical runs to have expansion bellows where length exceeds 25 M.			
	Flexible expansion joint of multiple corrugated stainless steel shall be provided between engine exhaust manifold and exhaust piping including necessary Bellow for exhaust piping			
	Earthing, Weather cowl at the top and aviation lights are to be provided.			
	Dia of pipe to be used shall be indicated in the tender. If			
	Inspection chamber shall be provided at the top as per pollution control board standard			
	Design and engineering for the support structure for exhaust			
	Quantity and sizes to be confirmed by the vendor			
2.1	100mm Dia Exhaust Pipe with Glass wool insulation thickness of (64kg/m3) with Aluminium cladding (For 63kVA)	Mtr	20	
12.2	CONTROL CABLING :			
	Supply, laying, testing and commissioning of 1100 V grade, Cu Conductor, PVC insulated, PVC sheathed, unarmoured Control cables of size as below . Qty shall be reconfirmed by DG vendor			
12.2.1	12C x 2.5 Sq.mm Ar.Copper cable	Mtr	50	
12.2.2	4C x 2.5 Sq.mm Ar.Copper cable	Mtr	50	

