



NIQ NO.- PSCL/HS/NIQ-02/2021

Dated: 16.01.2021

REQUEST FOR QUOTATION

Patna Smart City Limited (PSCL) invites quotations from manufacturers/supplier/stockiest for non-schedule items assessed within the scope of works related to Development of 325m road from JP Golamber to DM's residence as Happy Street in Patna, Bihar. Quotation to be submitted for items mentioned in table in table below with complete name and address of the firm submitting the quotation:

S. No.	Components	Description	Quantity
1	LED Screen (5m x 3m)	Supply, installation, testing & commissioning of LED outdoor signage with 3 years OEM warranty. The technical details are as follows: <ul style="list-style-type: none"> • Minimum Screen Size: 5m x 3m • Pitch Name: P7 • Encapsulation Bonding Wire: Gold • Pixel Configuration: 3 in 1 SMD LED Package • Pixel Pitch(mm): 6-7 mm • Pixel Density: 20700 pixels/sqm or more • Weight per sqm: 20 kg or less • Unit Case material: Magnesium or Aluminium • Service access: Rear • Min. Brightness (After Calibration): 5000 nit • Color Temperature: 3500 - 9000 • Visual Viewing Angle (Horizontal): 160 degree or more • Visual Viewing Angle (Vertical): 130 degree or more • Brightness Uniformity: 0.97 • Color Uniformity: +0.003Cx Cy • Contrast Ratio: 6000 or more • Processing Depth (bit): 14 or more • Power Consumption (W/Unit, Max.): 330 • Power Consumption (W/Unit, Avg.): 110 • Power Consumption (W/m², Max.): 660 • Power Supply (V): 100 to 240 • Frame Rate (Hz): 50/60 • Refresh Rate (Hz): 3840 or more • Operating Temperature: -20 to +50 • Operating Humidity: 0 to 99% RH • IP rating Front: IP65 • IP rating Rear: IP65 • Controller: LED Controller to make screen working • Loading Capacity: 1920*1200 @ 60Hz 	1 no.

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S. No.	Components	Description	Quantity
		<ul style="list-style-type: none"> Maximum Width: 2560pixels, Maximum Height: 1200 pixels Output Resolution: 2,304 million pixels Input Interface: HDMI, DVI Output Ethernet: 4 channels Sensor interface Brightness Adjustment Chroma Adjustment Cascading Regulatory Compliance (both for LED wall and controller): IEC 60950-1 / EN 60950-1 / UL 60950-1, CE / KC, BIS, RoHS Video wall controller and screen should be of same make Installation and fabrication (8 m high rise mounting fixture with covered cabinet). Design, Supply, installation, testing and commissioning of structural steel structure to house the above said LED outdoor signage as per site location mentioned in the location plan, including foundation etc with all accessories complete as required. All structural calculation, drawings, foundation details have to be approved by the Engineer-in-charge/ consultant prior to installation. 	
2	LED Screen (10m x 6m)	<p>Supply, installation, testing & commissioning of LED outdoor signage with 3 years OEM warranty. The technical details are as follows:</p> <ul style="list-style-type: none"> Minimum Screen Size: 10m x 6m Pitch Name: P10.4 Encapsulation Bonding Wire: Gold Pixel Configuration: 3 in 1 SMD Pixel Pitch(mm): 10.5 or less Weight per Square Meter (kg/m^2): 20 kg or less Physical Pixel Density (pixels/m^2): 20736 Flatness of Unit Case (mm): +0.5 Unit Case material: Magnesium or Aluminium Service access: Rear Min. Brightness (After Calibration): 5000 nit Color Temperature: 3500 - 9000 Visual Viewing Angle (Horizontal): 160 degree or more Visual Viewing Angle (Vertical): 120 degree or more Brightness Uniformity: 0.97 Color Uniformity: +0.003Cx Cy Contrast Ratio: 10000 or more Processing Depth (bit): 14 bit or more Power Consumption (W/Unit, Max.): 330 Power Consumption (W/Unit, Avg.): 110 Power Consumption (W/m^2, Max.): 660 Power Supply (V): 100 to 240 Frame Rate (Hz): 50/60 	1 no.

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S. No.	Components	Description	Quantity
		<ul style="list-style-type: none"> Refresh Rate (Hz): 3840 or more Operating Temperature: -20 to +50 Operating Humidity: 10% to 99% RH IP rating Front: IP65 IP rating Rear: IP65 Controller: LED controller to make screen working Loading Capacity: 1920*1200 @ 60Hz Maximum Width: 2560pixels, Maximum Height: 1200 pixels Output Resolution: 2.304 million pixels Input Interface: HDMI, DVI Output Ethernet: 4 channels Sensor interface Brightness Adjustment Chroma Adjustment Cascading Regulatory Compliance (both for LED wall and controller): IEC 60950-1 / EN 60950-1 / UL 60950-1, CE / KC, BIS, RoHS Video wall controller and screen should be of same make Design, Supply, installation, testing and commissioning of structural steel structure to house the above said LED outdoor signage as per site location mentioned in the location plan, including foundation etc. with all accessories complete as required. All structural calculation, drawings, foundation details have to be approved by the Engineer-in-charge/ consultant prior to installation. 	
3.	Outdoor Feeder Panel	<p>Supplying, designing, manufacturing, installation, testing and commissioning in correct alignment position, effecting proper connection of all incomer and outgoing of outdoor type cubical feeder pillar of suitable size not less than 30 cm and up-to 45 cm deep made out of M.S. sheet 2 mm thick (14 SWG) duly compartmentalized, double door with locking arrangement (IP-54), duly fixed on MS angle iron frame work of suitable size, earthing with two nos. earth studs, powder coated with rain shed structure etc as reqd. All inter connections shall be made with 2.5, 4 & 6 Sq mm PVC Cu. wire.</p> <p>Incomer 1 no- 200A, 415V, 4P, 36kA MCCB with thermo-magnetic based released type with O/L, S/C protection with adjustable current with spreader links and extended rotary handle.</p> <p>Outgoings 4 nos-MCCB, TPN, 60A, 25kA for street lighting 2 nos-MCB, TPN, 40A, for street lighting Digital Am-meter, three phases Digital Volt-meter, three phases 3 nos-Phase indicating light shall be protected by 2 Amps SP MCB's for incomer. Make-L& T./ AE/ Schneider.</p>	1 no.

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S. No.	Components	Description	Quantity
		Bus Bar 300A, 415V, 3Ph, 50 Hz, TPN High Conductivity electrolytic Aluminium bus bar of suitable length, insulated by heat shrinkable sleeves. The current density of bus bar shall be minimum 1.0 Sq mm / Amp. Provision for 3 phase LT metering arrangement with all accessories	
4.	Decorative Poles - CI (6m height)	Supplying Ornamental Cast Iron Pole with single arm bracket, of total height 6000 mm nominal above the foundation top level fabricated with cast iron embellishment, joints, column sections etc. reinforced internally with a pipe inside. The pole shall have inbuilt junction box weather proof flush door & locking arrangement for housing at bottom of the pole to accommodation with one No 10 Amp. SPMCB, one No 32 Amp. 4-way heavy duty connector and earth stud etc. complete for loop in loop out. The pole should be painted with polyurethane paint of approved colour finish.	40 nos.
5.	Decorative Poles-GI (6m height)	Supplying, Erection & testing of 6.0 mtr. (6000 mm) height Hot dip Galvanized Decorative pole made of mild steel tube confirming to IS 1161, PU painted grey / Black colour, suitable for single LED street light fitting/ Decorative suspended luminaire. The bottom portion should be with >100 mm dia., 3.0mm thick pipe and the top portion with >70mm dia., 3mm thick pipe & should have arrangement to fix ornamental bracket. The pole has a service window at the bottom Section comprising four-way 25 Amp. Connector terminal and a MCB, the base plate of pole should be minimum 250mmX250mm duly welded with pole complete etc. as required.	40 nos.
6.	LED Solar Streetlight (90W)	Supply of suspension type decorative street light fitting, made of spun aluminium housing, polycarbonate diffuser protector with IP 65 protection for optical compartment with 90 W LED system.	40 nos.
7.	LED Solar Streetlight (26W)	Supply of all-in-one integrated LED solar streetlight consists of solar photovoltaic module, battery, battery management system, control electronics, LED driver, inter-connecting cables and pole mounting piece integrated into the luminaire as a single unit. Solar street light with IP65 ingress protection having a system wattage of 26W with 4500 lumen output, 60Wp high efficiency monocrystalline solar panel, highly efficient MPPT based charge controller and 12.8 V, 30 Ah IP68 Lithium Ferro Phosphate (LiFePO ₄) battery with proper battery management system. LED lumen efficacy shall be at least 175lm/W and LED driver should have >90% efficiency. Typical correlated colour temperature should be 5700K with CRI>70. It should ensure battery optimization with help of a suitable dimming profile. The luminaire shall have inbuilt Hybrid power supply option that can charge the battery during non-sunny days automatically from the grid. The luminaire should be housed in IK 08 impact resistance certified aluminum pressure diecast housing with anti-corrosive coating and must have a UV stabilized polycarbonate cover. The luminaire shall have a specially designed pole mounting piece that enables lateral as well as post top mounting and installation at varying tilts from 0 to 15 degrees for optimal light distribution.	40 nos.
8.	LED Solar Streetlight	Supply of all-in-one integrated LED solar streetlight consists of solar photovoltaic module, battery, battery management system, control	40 nos.

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S. No.	Components	Description	Quantity
		electronics, LED driver, inter-connecting cables and pole mounting piece integrated into the luminaire as a single unit. Solar street light with IP65 ingress protection having a system wattage of 35W with 6000 lumen output, 60Wp high efficiency monocrystalline solar panel, highly efficient MPPT based charge controller and 12.8 V, 30 Ah IP68 Lithium Ferro Phosphate (LiFePO4) battery with proper battery management system. LED lumen efficacy shall be at least 175lm/W and LED driver should have >90% efficiency. Typical correlated colour temperature should be 5700K with CRI>70. It should ensure battery optimization with help of a suitable dimming profile. The luminaire shall have inbuilt hybrid power supply option that can charge the battery during non-sunny days automatically from the grid. The luminaire should be housed in IK 08 impact resistance certified aluminum pressure diecast housing with anti-corrosive coating and must have a UV stabilized polycarbonate cover. The luminaire shall have a specially designed pole mounting piece that enables lateral as well as post top mounting and installation at varying tilts from 0 to 15 degrees for optimal light distribution.	
9.	LED Streetlight	SITC of posttop with maximum wattage of 70w and minimum 7000lm. The efficacy of the luminaire should be minimum 100lm/w at system level. The CCT of the luminaire should be 5700K. The throw angle of the luminaire should be 57deg and spread should be 35deg minimum. The CRI of the luminaire should be >70. The Maintenance of lumen L 70 (hrs) should be >60K hrs. The operating temp of the luminaire should be 0 to 50 deg. The type of optics of the luminaire should be SLMR lens and the material should be glass. The maximum dimension in (mm) (LxBxH) of the luminaire should be 780x 420x300. The max weight of the luminaire should be 7.5Kg. The IP rating of the luminaire should be 66, IK rating of 08 and the luminaire should be class I. The power factor of the luminaire should be >0.95 and driver efficiency >90%. The luminaire should have internal surge protection of 4KV and THD<10%. The voltage range of the luminaire should be 120-277V. The luminaire should comply to IEC 60598, IS10322 etc. The necessary report like LM-79, TTC should be from a govt acc lab/NABL acc lab.	40 nos.
10.	Feeder Panel	Supply of Feeder Panel for Remote Management, Switching and Monitoring of Floodlights using GSM based control systems to be supplied considering 1 feeder pillar cabinet for 30-40 Nos of LED Floodlights depending on the geography in group management system. Lighting cabinets / feeder pillar to be connected independently to lighting management system server through a non-proprietary and professional network such as G.P.R.S. / Ethernet with open internet providing with a) Automatic (with a timer), remote (with GPRS / GSM) and manual switching option. b) Remote energy measurement, c) Near real time monitoring, d) Alarms and report generation, e) Emergency override – locally and remotely, f) Web based user interface with integrated visual maps, g) Data security and secured system access, h) Prevent unauthorized physical access to the street light control box, i) secured 128 Bit encrypted communication between server and street light feeder panel. (Buying of M2M SIM Card is in contractor's scope). Software as a Service and Data Hosting Charges considering 1 feeder pillar cabinet for 30-40 Nos of LED Street Light	1 Nos.

S. No.	Components	Description	Quantity
11.	Flood lights	Supply, Installation, Testing and Commissioning of architectural floodlighting luminaire for display effect Built-in (self-ballasted LED module), 4000K, 55Watt, Degree of ingress protection- IP66, shock rated protection-IK06, Housing: Aluminum casting, ultra-dark grey RAL 10714 painted, RAL colors should be available. Universal bracket: galvanized steel laser cutting. Front Cover: air tempered flat glass, thermally hardened, 4 mm thick optical lenses set: clear glass with an anti-reflection coating, CRI 80, Surge protection 10 kV, External DALI driver possible: 4-poles connector Class II only (-D+/D- with NTC thermal protection), Fixation configuration: mast adaptor D60 mm; wall bracket or longer bracket.	6 nos.
12.	LED Bollard	Supply and fitting of 10W LED bollard in rectangular shaped Victorian design/decorative mushroom shape/cylindrical shape with opal acrylic diffuser and IP65 protection, resistant to impact corrosion.	60 nos.
13.	LED Bush and Spike Light	Supply and fitting of 10W LED Step light with die cast aluminium housing designed for rugged outdoor usage and IP65 protection.	20 nos.
14.	LED Uplight	Supply and fitting of 10W LED uplighter with die cast aluminium housing designed for rugged outdoor usage and IP65 protection.	40 nos.
15.	LED Step Light	Supply and fitting of 4W LED step light with powder coated cast aluminium housing designed for rugged outdoor usage and IP54 protection.	10 nos.
16.	LED Post Top Light	Supply and fitting of 45W LED post top light with decorative circular design compliant to dark sky norms with polycarbonate opal diffuser and IP 65 protection.	20 nos.
17.	Outdoor Feeder Panel	Supplying, designing, manufacturing, installation, testing and commissioning in correct alignment position, effecting proper connection of all incomer and outgoing of outdoor type cubical feeder pillar of suitable size not less than 30 cm and up-to 45 cm deep made out of M.S. sheet 2 mm thick (14 SWG) duly compartmentalized, double door with locking arrangement (IP-54), duly fixed on MS angle iron frame work of suitable size, earthing with two nos. earth studs, powder coated with rain shed structure etc as reqd. All inter connections shall be made with 2.5, 4 & 6 Sq mm PVC Cu. wire. Incomer MCCB, 4P, 200A, 35kA Outgoings MCCB, 4P, 63A, 25kA - 4 nos MCB, 4P, 40A - 2 nos Enclosure- Enclosure to be fabricated out of CRCA steel sheet, 16 SWG sheet thickness, with 7 tank treatment powder coated paint, paint shed Siemens gray (RL -7032), floor mounted cubical type as per required size. AL Bus bar of continuous rating 300A for main supply Mechanical items: - Nuts, bolts, washer's door lock etc. Electrical Items: Copper wires & cables, sleeves, insulator, cable tie, wires, terminal etc. +labour charges etc. Provision for 3 phase LT metering arrangement with all accessories	1 no.
18.	RGB LED Wall Mounted Flood Light	Supply of 50 W Color Changing RGB Flood Lights. Surface/Pole mounted luminaire for outdoor application. Luminaire optic consists of highly efficient, UV and temperature-resistant lens systems. Symmetric distribution with glass cover, clear/powder coated. Luminaire luminous flux range 2000-2250 Lm, Luminaire should Controlled through DMX/Ethernet protocol using Data formatting device and Controller,	40 nos.

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S. No.	Components	Description	Quantity
		Controller can achieve 16.7M colors. Rated input supply of AC 100 – 270V (50-60Hz). Operating Voltage of 12/24VDC with inbuilt BIS Approved LED Driver. Light colour RGB, LED Make: CREE / LUMILEDS / OSRAM / NICHIA. The luminaire should have versatile optics: 24°-120°, Mean rated service life LM70 (tq 25° C) = 50,000 h. Luminaire body of aluminium die cast with aluminium component with flush-fitting cover and integral LED unit. Colour of luminaire body Grey/Silver, highly weather resistant, powder-coated. Safety class: Class 1, Surge protection 10 kV, Ingress protection rating: IP66, impact resistance level should be suitable to site condition. The luminaire should be provided with Electrical safety class I. Power Efficiency: >85%, Operating Temperature: -10°C to +55°C, Operating Humidity: 0%-95%, Housing to have adjustable base bracket for angle adjustment so that the light direction can be adjusted to illuminate desired structural elements. All these luminaires have to be individually accessible and can be remotely controlled, also the remote access website needs to be future proof, so that it can be integrated at a later stage with the Smart City dashboard.	
19.	Dynamic IC Integrated Pixel RGB Lights	Supply of 0.7-1W Dynamic IC Integrated Pixel RGB Lights, Small sized pixel modules having diameter less than 40 mm, 16.7 million additive RGB colors, Completely waterproof, suitable for outdoor application, having IP rating IP68, LED Make : CREE / OSRAM / NICHIA/LUMILEDS, Completely enclosed in transparent optical grade PVC material, UV resistant grade : Class 4, Fire retardant grade : V-0, Supports control by offline pixel controller (with SD card) to show RGB color or with computer to perform online timely transfer color patterns, chasing colors, etc. Safety approvals : CE/ FCC/UL, Mean rated service life L70 (tq 25 °C) = 50,000 hours, Pixel controller supports 256 – 65536 level gray control, Built-in LCD display to show controller parameters, Inbuilt provision for SD card so that programs/scenes can be changed easily, Two or more controllers can be able to work properly in cascade, Profile Size : L1000, minimum 10 pixels should be used in every 1 meter, Pixel Module Wattage : 0.72W-1W, Operating Voltage : DC12V, Light Angle : 120-180°, Electrical Grade : Class I, Surge protection 5kV, IP Protection Grade : IP68, Flame Retardant Grade : V-0, The Control Mode : Serial control. All these luminaires have to be individually accessible and can be remotely controlled, also the remote access website needs to be future proof, so that it can be integrated at a later stage with the Smart City dashboard	1500 m
20.	RGBWW Linear LED Luminaire	Supply of 48-50 W Color Changing RGBWW Linear luminaire suitable for façade lighting. Pivotal fixing bracket for suspended and vertical mounting with rotationally symmetrical wide light distribution. Luminaire luminous flux range 1920-2160 Lm, Luminaire should Controlled through DMX/Ethernet protocol using Data formatting device and Controller, Controller can achieve 16.7M colors. Rated input supply of AC 100 – 270V (50-60Hz). Operating Voltage of 12/24VDC with inbuilt BIS Approved LED Driver. Light colour RGBWW, LED Make: CREE / LUMILEDS / OSRAM / NICHIA. The luminaire should have versatile optics: 5°-80°, mean rated service life LM70 (tq 25 °C) = 50,000 h. Luminaire body of aluminium die cast with aluminium component	100 nos.

S. No.	Components	Description	Quantity
		with flush-fitting cover and integral LED unit. Colour of luminaire body Grey/Silver, highly weather resistant, powder-coated. Safety class: Class 1, Surge protection 10 kV, Ingress protection rating: IP66, impact resistance level should be suitable to site condition. The luminaire should be provided with Electrical safety class I. Power Efficiency: >85%, Operating Temperature: -10°C to +55°C, Operating Humidity: 0%-95%, Housing to have adjustable base bracket for angle adjustment so that the light direction can be adjusted to illuminate desired structural elements. All these luminaires have to be individually accessible and can be remotely controlled, also the remote access website needs to be future proof, so that it can be integrated at a later stage with the Smart City dashboard	
21.	WW LED wall mounted Flood Light	Supply of 120-140 W Pole mounted LED luminaire suitable for Monument Lighting. Surface-mounted luminaire for outdoor applications. Luminaire optic consists of highly efficient, UV and temperature-resistant lens systems. Symmetric distribution. With glass cover, clear/powder coated. Luminaire luminous flux range 12000-144000 Lm. Rated input supply of AC 100 – 270V. Light colour RGBWW, LED Make: CREE / LUMILEDS / OSRAM / NICHIA. The luminaire should have versatile optics: 24°-120°, Mean rated service life LM70 (tq 25 °C) = 50,000 Burning hour. Luminaire body of aluminium die cast with aluminium component with flush-fitting cover and integral LED unit. Colour of luminaire body Grey/Silver, highly weather resistant, powder-coated. Safety class: Class 1, Surge protection 10 kV Ingress protection rating: IP65, impact resistance level should be suitable to site condition. The luminaire should be provided with Electrical safety class I. Power Efficiency: >85%, Operating Temperature: -10°C to +55°C, Operating Humidity: 0%-95%, Housing to have adjustable base bracket for angle adjustment so that the light direction can be adjusted to illuminate desired structural elements. All these luminaires have to be individually accessible and can be remotely controlled, also the remote access website needs to be future proof, so that it can be integrated at a later stage with the Smart City dashboard	30 nos.
22.	DMX Controller System	Supply of DMX Controller System with Standalone interfaces, Input connector: Mini USB - Mini USB cable included, Output connector: XLR 3 (XLR 5 is optional) 1:Ground, 2:Data+, 3:Data, Number of DMX Input/Output: 512 or 1024 (PC + Stand Alone), PC DMX IN triggers: Yes, Standalone DMX IN triggers: Only with 1024 interfaces, External triggers: x4 contacts (5V.) multiplexed to 15 contacts max (20m max cable length), Master/Slave connection: Yes, 3 wires for 16 connected interfaces max (20m max cable length), Infra-red connection: Yes via an external IR module (PCB) and 3 connection wires (max 15m away), Infra-red remote: Optional, DMX Speed: 1 to 45 Hz, MaB, Bk, Stand Alone mode : Yes, 512 or 1024 channels per interface, Internal Clock (RTC): Yes, Internal calendar: Yes, Backups of the internal clock: Yes, 3 weeks without power, Internal memory: Yes (4 MB), Memory Capacity: 4000 steps with 512 channels, 100000 steps with 16 channels, Input power voltage: 5 V. via USB(USB power supply included), Input current: 80 to 200 mA, Power: 2W, Display of signal states: DMX LED + USB, LED CPU technology: 32 bit, Internal memory: Yes, Data	1 No.

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S. No.	Components	Description	Quantity
		display: 7 segments LED display, External triggers : x4 dry contacts for up to 15 multiplexed contacts Contact, Input Voltage: 100-270 V AC, Dimensions: H: 40 mm (1,57 in) / W: 110 mm(4,33 in) / D: 120 mm (4.72 in), Weight: 0,180 Kgs, Color: Black / Red, Operating Temperature: -25 to +70 C°, DMX Compatibility: 8 and 16 bit DMX fixtures, System Compatibility: Windows XP, Vista, 7, 8, 8.1, 10, MAC OS X (10.6 and +), Linux.	
23.	DMX Decoder	Supply of DMX Decoder with the standard RDM remote device management protocol, supports Master DMX Controller signal bi-directional communication, achieves remote management of reading and writing DMX address (DMX master controller must recognize the RDM protocol). Equipped with DMX standard 3-pin XLR, RJ45, green terminal interface. Realize 0-100% dimming or different lighting effect; workable with single color, bi-color, RGB Light fixture.	1 No.
24.	LED CV Power Repeater	Supply of LED CV Power Repeater for RGB Luminaires suitable for power-output power expansion, it accepts PWM control, the control quantity of LED lights would be twice as much by adding one more power repeater, unlimited quantity of power repeater to be connected theoretically. Input Signal: CV/CC PWM, Input Voltage: 5-24VDC, Max Current Load: 8Ax3CH Max 24A, Output Power 576W (24V).	60 Nos.
25.	Signal Amplifier	Supply of Signal Amplifier, should be specially design for signal shaping amplification for DMX Master controller signal which attenuated after a long-distance transmission, realize extending the signal transmission distance. Increase DMX Signal amplifier to distribute multi-channel control. should have Photoelectricity insulation of 1KV between input and output terminal, should operate on 12-24V DC. Working temperature (-30 to 55 Deg Cel).	4 Nos.
26.	Cabling	Supply and Laying of power Cables for all luminaires, Supply and Laying of CAT5/CAT6 for DMX System, Installation of Pixel RGB Lights, RGB Wall Washers, RGB and WW flood lights with necessary mounting arrangement, Feeder Panel, Weatherproof Junction Boxes for DMX Components with necessary mounting arrangements, DMX Software & Programing for required Facade Lighting Themes and other electrical components as per site requirement all complete (for item 18-25)	1 Job
27.	110 W RGB LED Flood Light	Supply of High power architectural RGB LED flood light with housing material of Die-cast aluminium, dark grey powder-coated finish, system wattage not exceeding 110W and system lumen output of not less than 3500 lumens. Fixture shall be available with architectural optics with choice of beam angles of narrow 10° medium 20° or wide 40° beam angles. Suitable for DMX/Ethernet. Fixture shall operate in a temperature range of -10°C to 55°C. Fixture shall have input voltage for 220 - 240 VAC. Lifetime should be at least 50,000 burning hours at L70 with total IP66 protection. Fixture shall be equipped with mechanical impact of minimum IK06.	36 Nos.
28.	140 W RGB LED Flood Light	Supply of long-throw exterior RGB LED floodlight with housing material of Die-cast aluminium, powder-coated finish, system wattage not exceeding 140W and system lumen output of not less than 5500 lumens with native lens, Fixture should be available with architectural optics with	12 Nos.

S. No.	Components	Description	Quantity
		choice of beam angles of narrow (Ranges 7° -15°), medium (Ranges 20° -25°) or wide (Ranges 40° -50° or 60° - 70°) and asymmetric (5°-10° x 15°-20° lens). Suitable for DMX/Ethernet. Fixture shall operate in a temperature range of 10°C to 55°C. Fixture shall have input voltage for 100 – 277 VAC. Lifetime should be at least 50,000 burning hours at L70 with total IP66 protection. Luminaire Connections Integral male/female waterproof connectors. Fixture shall be equipped with mechanical impact of minimum IK06.	
29.	280 W RGB LED Flood Light	Supply of long-throw exterior RGB LED floodlight with housing material of Die-cast aluminium, powder-coated finish, system wattage not exceeding 280W and system lumen output of not less than 11000 lumens with native lens. Fixture should be available with architectural optics with choice of beam angles of narrow (Ranges 7° -15°), medium (Ranges 20° -25°) or wide (Ranges 40° -50° or 60° - 70°) and asymmetric (5°-10° x 15°-20° lens). Suitable for DMX/Ethernet. Fixture shall operate in a temperature range of 0°C to 40°C. Fixture shall have input voltage for 100-277 VAC. Lifetime should be at least 50,000 burning hours at L70 with total IP66 protection. Luminaire Connections Integral male/female waterproof connectors. Fixture shall be equipped with mechanical impact of minimum IK06.	10 Nos.
30.	Direct View 25 Watt	Supply of daylight-visible, exterior-rated RGB LED point of light ideally suited for a range of direct- view applications with housing material of Die-cast aluminium, powder-coated finish, system wattage not exceeding 25W and system lumen output of not less than 700 lumens with clear lens. Luminance in Nits 25,150 cd/m². Fixture should be available with Viewing 125°. Suitable for DMX/Ethernet. Fixture shall operate in a temperature range of -10°C to 55°C. Fixture shall have input voltage for 100-277 VAC. Lifetime should be at least 50,000 burning hours at L70 with total IP66 protection. Luminaire Connections Integral male/female waterproof connectors. Fixture shall be equipped with mechanical impact of minimum IK10.	14 Nos.
31.	Data Formatting Device	Supply of Data formatting device specifically designed for luminaires operates on the same technology[single-cable line voltage operation] suitable for Power I / p - 100-240V AC, 50-60 Hz, Max connected load-20A, Internal loss not to exceed -20W, Heat dissipation should be in the order of 10W max, Ambient temperature - 0°C- 50°C, Data i/p interface - DMX / Ethernet, Protection rating - IP 66 (Suitable for humid / raining locations), Input Voltage 100 – 277 VAC, auto-ranging, 50 / 60 Hz, Maximum Input Current 16.5 A, maximum load Current 16 A, Construction -Cast aluminum enclosure with slots for surface mounting.	8 Nos.
32.	Lighting Protocol Converter	Supply of lighting protocol converter, which performs a range of lighting protocol conversions, including Ethernet lighting protocol to DMX512, DMX512 to Ethernet and RS232 to Ethernet. Suitable for Wall-mounted, convert DMX-based power / data supplies with any Ethernet-based device. Protocol Converter works with the PoE-compliant switch or PoE injector offered by any OEM, or with any PoE-compliant switch or injector. Easy to use — Protocol Converter uses standard RJ45 connectors	1 No.

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S. No.	Components	Description	Quantity
		to connect to both DMX-based power/data supplies from Ethernet/DMX and PoE- compliant switches. Ultra-compact design-Protocol Converter weight should be ~ 0.2 kg and has a form factor of not more than 40 x 120 x 90 mm, Compatible with other PoE-compliant devices. Control-Ethernet:10BASE-T from any PoE- or IEEE 802.3af compliant Ethernet switch. PoE injector required for use with non-IEEE 802.3af-compliant switches. Network Protocol: Bi-directional Ethernet /DMX512 communication Data Connector: RJ45 connectors for KiNET input and DMX512 output Operating Temperature: -10 to 55 °C, Humidity: 0 to 95%, non-condensing Certification: Class A, CE Certified Environment: Dry/Damp Location, IP40	
33.	Content Program Controller	Supply of Content Program Controller specifically designed for author, configure, and control intricate LED light shows in multiple zones. Input Power- 100 to 240 VAC, auto-ranging, 50/60 Hz, Power Consumption 200 W maximum, Minimum supported LED Nodes 10,000, Network Data - Ethernet protocol, Housing- Aluminium enclosure, Connector/Cable (2) RJ45 ports, shielded Cat. 5e or better data cable.	1 No.
34.	Cabling	Supply and Laying of power Cables for all luminaires, Supply and Laying of CAT5/CAT6 for DMX System, Installation of all luminaires with necessary mounting arrangement, Feeder Panel, Weatherproof Junction Boxes for DMX Components with necessary mounting arrangements, DMX Software & Programing for required Facade Lighting Themes and other electrical components as per site requirement all complete (for item no. 27-33)	1 Job
35.	Automatic Bollards	Supply, installation and commissioning of automatic bollards across carriageway at JP Golamber (56 m width), Junction of Bank Road and Gandhi Maidan (20 m width) and St. Xavier's School (60 m width) with following specifications: <ul style="list-style-type: none"> • Dynamical System: Electromechanical Drive • Rising/Fall time: 5/3 sec • Power: 400 W • Treatment: Sandblasting + Automotive paint treatment • Exterior: Customizable • Impact Resistance: $\geq 579000J$ • Withstand pressure: $\geq 50 T$ • Protection Class: IP 67 • Width: 500 mm; Depth: 1100 mm • Hand operated wireless device • Spacing: 800-1500 mm 	140 m
36.	LED Tree Uplighter	Supply, installation and commissioning of 10-12 W narrow Beam LED In-ground/Buried Lights for trees Lighting, Housing to be made in pressure die-cast Aluminium with color coated as per desired color. To ensure proper heat dissipation, Optical lens/Reflector for proper light distribution, Lampshade adopts high strength toughened glass, resist the impact and friction. High brightness COB/SMD LED light source. Rated input supply of AC 100 – 270V (50-60Hz). Operating Voltage of 12/24VDC with inbuilt BIS Approved LED Driver. The luminaire	50 nos.

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S. No.	Components	Description	Quantity
		should have versatile optics, Mean rated service life LM70 (tq 25 °C) = 50,000 h. Luminaire body of aluminium extruded with aluminium component with flush-fitting cover and integral LED unit. Colour of luminaire body Grey/Silver, highly weather resistant, powder-coated. Safety class: Class 1, Surge protection 10 kV, Ingress protection rating: IP66, impact resistance level should be suitable to site condition. The luminaire should be provided with Electrical safety class I. Power Efficiency: >85%, Operating Temperature: -10°C to +55°C, Operating Humidity: 0%-95%, Housing to have adjustable base bracket for angle adjustment so that the light direction can be adjusted to illuminate desired structural elements.	
37.	LED Tree Uplighter	Supply, installation and commissioning of Flood LP (45W) & MP (72W) is a reliable and cost-effective color-changing light fixture for exterior use. Designed for creating fixed or dynamic colorful lighting effects, Flood LP & MP RGB is ideal for flood, wash and accent lighting applications. Integrated power and DMX-512 control make this product easy to use with DMX controllers.	50 nos.
38.	Color Changing RGBWW Narrow Beam luminaire	Supply of 180-200 W Color Changing RGBWW Narrow Beam luminaire suitable for Statue Lighting. Surface/Pole mounted luminaire for outdoor applications. Luminaire optic consists of highly efficient, UV and temperature-resistant lens systems. Symmetric distribution with glass cover, clear/powder coated. Luminaire luminous flux range 8000-9000 Lm, Luminaire should Controlled through DMX/Ethernet protocol using Data formatting device and Controller, Controller can achieve 16.7M colors. Rated input supply of AC 100 – 270V (50-60Hz). Operating Voltage of 12/24VDC with inbuilt BIS Approved LED Driver. Light colour RGBWW, LED Make: CREE / LUMILEDS / OSRAM / NICHIA. The luminaire should have versatile optics: 10°-15°, Mean rated service life L70 (tq 25 °C) = 50,000 burning hour. Luminaire body of aluminium die-cast with aluminium components. With flush-fitting cover. Colour of luminaire body Grey/Silver, highly weather resistant, powder-coated. Safety class: Class 1, Surge protection 10 KV, Ingress protection rating: IP66, impact resistance level should be suitable to site condition. The luminaire should be provided with Electrical safety class I. Power Efficiency: >85%, Operating Temperature: -10°C to +55°C, Operating Humidity: 0%-95%, Housing to have adjustable base bracket for angle adjustment so that the light direction can be adjusted to illuminate desired structural elements.	16 Nos.
39.	Color Changing RGBWW Linear luminaire	Supply of 50 W Color Changing RGBWW Linear luminaire. Surface mounted luminaire for outdoor application. Luminaire optic consists of highly efficient, UV and temperature-resistant lens systems. Symmetric distribution with glass cover, clear/powder coated. Luminaire luminous flux range 2000-2250 Lm, Luminaire should Controlled through DMX/Ethernet protocol using Data formatting device and Controller, Controller can achieve 16.7M colors. Rated input supply of AC 100 – 270V (50-60Hz). Operating Voltage of 12/24VDC with inbuilt BIS	12 Nos.

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S. No.	Components	Description	Quantity
		Approved LED Driver. Light colour RGBWW, LED Make: CREE / LUMILEDS / OSRAM / NICHIA. The luminaire should have versatile optics: 10°-60°, Mean rated service life LM70 (tq 25 °C) = 50,000 h. Luminaire body of aluminium die cast with aluminium component with flush-fitting cover and integral LED unit. Colour of luminaire body Grey/Silver, highly weather resistant, powder-coated. Safety class: Class 1, Surge protection 10 kV, Ingress protection rating: IP66, impact resistance level should be suitable to site condition. The luminaire should be provided with Electrical safety class I. Power Efficiency: >85%, Operating Temperature: -10°C to +55°C, Operating Humidity: 0%-95%, Housing to have adjustable base bracket for angle adjustment so that the light direction can be adjusted to illuminate desired structural elements.	
40.	Cabling	Supply and Laying of power Cables for LED Luminaires, Supply and Laying of CAT5/CAT6 for DMX System, Installation of luminaires with necessary mounting arrangement, Feeder Panel, Weatherproof Junction Boxes for DMX Components with necessary mounting arrangements, DMX Software & Programing for required Facade Lighting Themes and other electrical components as per site requirement all complete (for item 37-38)	1 Job.
41.	Dustbins	Supply and installation of twin bin stainless steel dustbins with following specifications: <ul style="list-style-type: none"> • Material SS202 grade • Capacity: 60 litres • Weight: 40 kgs • Dimensions: 14" x 28" 	10 nos.
42.	Seating benches	Supplying and installation of FRP seating benches of 3-person capacity with cast iron side support <ul style="list-style-type: none"> • Material FRP • Capacity: 3 persons 	10 nos.
43.	Compact Substation (200 KVA)	Supply, installation, testing and commissioning SCADA compatible 11/415 kV, Outdoor type Package/ compact Sub-Station (in compliance IEC 62271-202) shall be consisting of following HT Switchgear: - 630 Amps, 11 kV, 21 kA SF6 insulated, Ring Main Unit outdoor type, consisting of SCADA compatible Two Nos. Load Break Switches and One Number SF6 insulated vacuum Circuit Breaker Manual/Motorized for remote operation. The breaker unit shall robotically welded conform to Ingress protection IP67 in SF6 encapsulated stainless steel enclosure of thickness 2 mm or above, with series trip, self-powered microprocessor based 3 Ph numerical over current relay (IDMTL + Inst.) protection, CT of ratio-40/1A 2.5VA 5P10... 3 nos, gas pressure gauge with digital indication etc. It should have metering unit complete with CTs, PTs, etc. Transformer: - Three Phase, 50 Hz, Core type, two winding, 11 kV/433V DYn11 oil immersed hermetically sealed type transformer.	1 no.


S. No.	Components	Description	Quantity
		<p>The transformer be copper wound and class A insulated. The transformer shall be suitable for operation at full rated power on all tapings without exceeding the applicable temperature rise. It should be possible to operate the transformer satisfactorily, with the loading guide specified in relevant IS code. There shall be no limitations imposed by bushings, tap changers, auxiliary equipment to meet this requirement.</p> <p>LT Panel (Inside CSS): - Consisting of Three phase and Neutral ACB/MCCB as Incomer, Aluminium Busbars, four no. outgoing ACB/MCCB MFM with communication port. Encloser fabrication using 1.5 mm or above CRCA sheet steel indoor type, complete with internal wiring etc. consisting of following.</p> <p>Incomer: - Three Phase 415V, Amp. as per required, 4P 50Hz 50 kA manual and motorised for remote operation through SCADA, ACB/MCCB with microprocessor-based overcurrent, short circuit & earth fault Release, having SCADA communication facility for the status and ON/OFF. the accuracy class 0.5, complete with required CTs, PTs, Multi-function meter of accuracy class.5 with communication port etc.</p> <p>Busbar: -Three phase aluminium busbar 100% for Phase and 50% for Neutral, Current Density of AL- 0.8 Amp/sq mm complete with all necessary accessories</p> <p>Outgoings 4 way:- Three phase 415V, Amp. as per required 3P 50Hz 36 kA, TPN MCCB/MCB four number with microprocessor based over current and magnetic, short circuit, earth fault release. having SCADA communication facility.</p> <p>Outdoor Enclosure: - Outdoor type enclosure having construction of Galvanized Sheet Steel of thickness 2mm or above. Base plate should be 4 mm thick. The Enclosure shall have IP 54 degree of protection for HT & LT switchgear compartment & IP 23 degree of protection for Transformer compartment. The enclosure exterior shall be Powder coated. Each compartment will be provided with the door and pad locking arrangement. The Compartment illumination lamp with door operated switch shall be provided for each compartment. It should be internal arc test compliant for 21 kA for 3 sec.</p> <p>Interconnection & Earthing: -Interconnection Between HT switchgear & Transformer using Cu bus bar or XLPE Single core cu cable & Interconnection between Transformer & LT switchgear using Al. Bus bars. Internal earthing connections by using GI Strips.</p>	

TERMS OF QUOTATION:

1. Quotation submitting firm may submit the unit price rate for all/selected items. The quantities mentioned against each item are indicative requirements as per the scope of the project.
2. Quotation must be in letter head with GST No. and complete address of the firm addressed to the Managing Director, Patna Smart City Limited.
3. Quotation submitted by the bidder shall be valid for 180 days.
4. Price Quotation must be inclusive of GST.
5. PSCL reserves all right to except/reject any or all offers received at sole discretion without assigning any reasons whatsoever.
6. Last Date of Submission of Quotation: 28-01-21 (upto 17:00 hrs)



7. Quotation must be submitted either by email/hand/ post / Courier upto 5 pm till the date of submission (28.01.2021) at PSCL, 5th Floor, Biscamaun Bhawan, Gandhi Maidan, Patna – 800001.
8. PSCL will not be responsible for any loss, delay or non-receipt of quotation sent by email/ Post /Courier.


**Managing Director,
Patna Smart City Limited, Patna.**