

General Explanatory Note

Name of the work: Electrical work for facade lighting arrangement for DIGHA and BETNOTI Station under Amrit Station development work.

Srl. No.	Item	Description and Explanatory Note
1	Supply, Installation, Testing & Commisioning of 48W Dynamic color changing Linear light fixture suitable for outdoor facade lighting applications as per specifications mentioned in explanatory note.	<p>Supply, Installation, Testing & Commisioning of Dynamic color changing Linear light fixture suitable for outdoor facade lighting applications. The luminaries must have highly efficient LED from CREE/OSRAM/LUMILEDS/NICHIA/ SEOUL with L70 of 50,000hrs minimum. Power Consumption shall be min 48W. Luminaries optics shall be highly efficient, UV and temperature-resistant lens systems. Optional lenses to achieve beam angles 15°/20°/30°/45° or as per site requirement with Light output color: RGBW. Rated input supply of 100-277V AC, 50-60Hz. Power Factor: >0.9, THD<15%. The luminaire must be controllable through DMX512/Ethernet protocol. The body of the fixture must be made of Die-cast aluminum alloy housing with heat resistance tempered glass cover and surface finished- double powder coated, outdoor grade, anti UV with suitable IK07 rating to sustain any outer objects from damaging the fixture. The luminaries must be weatherproof with IP66 or higher rating with operating temperature: 0°C to 50°C and humidity: 10% to 90%. Housing must have adjustable bracket to set the light and illuminate to required area. Ingress protection of connector: -IP65.</p> <p>*Make: Phillips/Surya/Wipro/K-light/Canara lighting.</p>
2	Supply, Installation, Testing & Commisioning of 40W Dynamic color changing Linear light fixture suitable for outdoor facade lighting applications as per specifications mentioned in explanatory note.	<p>Supply, Installation, Testing & Commisioning of Dynamic color changing Linear light fixture suitable for outdoor facade lighting applications. The luminaries must have highly efficient LED from CREE/OSRAM/LUMILEDS/NICHIA/ SEOUL with L70 of 50,000hrs minimum. Power Consumption shall be min 40W. Luminaries optics shall be highly efficient, UV and temperature-resistant lens systems. Optional lenses to achieve beam angles 15°/20°/30°/45° or as per site requirement with Light output color: RGBW. Rated input supply of 100-277V AC, 50-60Hz. Power Factor: >0.9, THD<15%. The luminaire must be controllable through DMX512/Ethernet protocol. The body of the fixture must be made of Die-cast aluminum alloy housing with heat resistance tempered glass cover and surface finished- double powder coated, outdoor grade, anti UV with suitable IK07 rating to sustain any outer objects from damaging the fixture. The luminaries must be weatherproof with IP66 or higher rating with operating temperature: 0°C to 50°C and humidity: 10% to 90%. Housing must have adjustable bracket to set the light and illuminate to required area. Ingress protection of connector: -IP65.</p> <p>*Make: Phillips/Surya/Wipro/K-light/Canara lighting.</p>

3	<p>Supply, Installation, Testing & Commisioning of 36W Dynamic color changing Linear light fixture suitable for outdoor facade lighting applications as per specifications mentioned in explanatory note.</p>	<p>Supply, Installation, Testing & Commisioning of Dynamic color changing Linear light fixture suitable for outdoor facade lighting applications. The luminaries must have highly efficient LED from CREE/OSRAM/LUMILEDS/NICHIA/ SEOUL with L70 of 50,000hrs minimum. Power Consumption shall be min 36W. Luminaries optics shall be highly efficient, UV and temperature-resistant lens systems. Optional lenses to achieve beam angles 15°/20°/30°/45° or as per site requirement with Light output color: RGBW. Rated input supply of 100-277V AC, 50-60Hz. Power Factor: >0.9, THD<15%. The luminaire must be controllable through DMX512/Ethernet protocol. The body of the fixture must be made of Die-cast aluminum alloy housing with heat resistance tempered glass cover and surface finished- double powder coated, outdoor grade, anti UV with suitable IK07 rating to sustain any outer objects from damaging the fixture. The luminaries must be weatherproof with IP66 or higher rating with operating temperature: 0°C to 50°C and humidity: 10% to 90%. Housing must have adjustable bracket to set the light and illuminate to required area. Ingress protection of connector: -IP65.</p> <p>*Make: Phillips/Surya/Wipro/K-light/Canara lighting.</p>
4	<p>Supply, Installation, Testing & Commisioning of 30W Dynamic color changing Linear light fixture suitable for outdoor facade lighting applications as per specifications mentioned in explanatory note.</p>	<p>Supply, Installation, Testing & Commisioning of Dynamic color changing Linear light fixture suitable for outdoor facade lighting applications. The luminaries must have highly efficient LED from CREE/OSRAM/LUMILEDS/NICHIA/ SEOUL with L70 of 50,000hrs minimum. Power Consumption shall be min 30W. Luminaries optics shall be highly efficient, UV and temperature-resistant lens systems. Optional lenses to achieve beam angles 15°/20°/30°/45° or as per site requirement with Light output color: RGBW. Rated input supply of 100-277V AC, 50-60Hz. Power Factor: >0.9, THD<15%. The luminaire must be controllable through DMX512/Ethernet protocol. The body of the fixture must be made of Die-cast aluminum alloy housing with heat resistance tempered glass cover and surface finished- double powder coated, outdoor grade, anti UV with suitable IK07 rating to sustain any outer objects from damaging the fixture. The luminaries must be weatherproof with IP66 or higher rating with operating temperature: 0°C to 50°C and humidity: 10% to 90%. Housing must have adjustable bracket to set the light and illuminate to required area. Ingress protection of connector: -IP65.</p> <p>*Make: Phillips/Surya/Wipro/K-light/Canara lighting.</p>
5	<p>Supply, Installation, Testing & Commisioning of 24W Dynamic color changing Linear light fixture suitable for outdoor facade lighting applications as per specifications mentioned in explanatory note.</p>	<p>Supply, Installation, Testing & Commisioning of Dynamic color changing Linear light fixture suitable for outdoor facade lighting applications. The luminaries must have highly efficient LED from CREE/OSRAM/LUMILEDS/NICHIA/ SEOUL with L70 of 50,000hrs minimum. Power Consumption shall be min 24W. Luminaries optics shall be highly efficient, UV and temperature-resistant lens systems. Optional lenses to achieve beam angles 15°/20°/30°/45° or as per site requirement with Light output color: RGBW. Rated input supply of 100-277V AC, 50-60Hz. Power Factor: >0.9, THD<15%. The luminaire must be controllable through DMX512/Ethernet protocol. The body of the fixture must be made of Die-cast aluminum alloy housing with heat resistance tempered glass cover and surface finished- double powder coated, outdoor grade, anti UV with suitable IK07 rating to sustain any outer objects from damaging the fixture. The luminaries must be weatherproof with IP66 or higher rating with operating temperature: 0°C to 50°C and humidity: 10% to 90%. Housing must have adjustable bracket to set the light and illuminate to required area. Ingress protection of connector: -IP65.</p> <p>*Make: Phillips/Surya/Wipro/K-light/Canara lighting.</p>

6	<p>Supply, Installation, Testing & Commisioning of 18W Dynamic color changing Linear light fixture suitable for outdoor facade lighting applications as per specifications mentioned in explanatory note.</p>	<p>Supply, Installation, Testing & Commisioning of Dynamic color changing Linear light fixture suitable for outdoor facade lighting applications. The luminaries must have highly efficient LED from CREE/OSRAM/LUMILEDS/NICHIA/ SEOUL with L70 of 50,000hrs minimum. Power Consumption shall be min 18W. Luminaries optics shall be highly efficient, UV and temperature-resistant lens systems. Optional lenses to achieve beam angles 15°/20°/30°/45° or as per site requirement with Light output color: RGBW. Rated input supply of 100-277V AC, 50-60Hz. Power Factor: >0.9, THD<15%. The luminaire must be controllable through DMX512/Ethernet protocol. The body of the fixture must be made of Die-cast aluminum alloy housing with heat resistance tempered glass cover and surface finished- double powder coated, outdoor grade, anti UV with suitable IK07 rating to sustain any outer objects from damaging the fixture. The luminaries must be weatherproof with IP66 or higher rating with operating temperature: 0°C to 50°C and humidity: 10% to 90%. Housing must have adjustable bracket to set the light and illuminate to required area. Ingress protection of connector: -IP65.</p> <p>*Make: Phillips/Surya/Wipro/K-light/Canara lighting.</p>
7	<p>Supply, Installation, Testing & Commisioning of 12W Dynamic color changing Linear light fixture suitable for outdoor facade lighting applications as per specifications mentioned in explanatory note.</p>	<p>Supply, Installation, Testing & Commisioning of Dynamic color changing Linear light fixture suitable for outdoor facade lighting applications. The luminaries must have highly efficient LED from CREE/OSRAM/LUMILEDS/NICHIA/ SEOUL with L70 of 50,000hrs minimum. Power Consumption shall be min 12W. Luminaries optics shall be highly efficient, UV and temperature-resistant lens systems. Optional lenses to achieve beam angles 15°/20°/30°/45° or as per site requirement with Light output color: RGBW. Rated input supply of 100-277V AC, 50-60Hz. Power Factor: >0.9, THD<15%. The luminaire must be controllable through DMX512/Ethernet protocol. The body of the fixture must be made of Die-cast aluminum alloy housing with heat resistance tempered glass cover and surface finished- double powder coated, outdoor grade, anti UV with suitable IK07 rating to sustain any outer objects from damaging the fixture. The luminaries must be weatherproof with IP66 or higher rating with operating temperature: 0°C to 50°C and humidity: 10% to 90%. Housing must have adjustable bracket to set the light and illuminate to required area. Ingress protection of connector: -IP65.</p> <p>*Make: Phillips/Surya/Wipro/K-light/Canara lighting.</p>
8	<p>Supply, Installation, Testing & Commisioning of power supply unit for Façade Lights with input voltage of AC 100-265V, 50-60Hz. The Output Voltage shall be 24V DC. The Power Consumption of the Power supply unit min 200W. The unit shall be weatherproof with IP67 or higher rating.</p>	<p>Supply, Installation, Testing & Commisioning of power supply unit for Façade Lights with input voltage of AC 100-265V, 50-60Hz. The Output Voltage shall be 24V DC. The Power Consumption of the Power supply unit min 200W. The unit shall be weatherproof with IP67 or higher rating.</p> <p>*Make: Phillips/Surya/Wipro/K-light/Canara lighting.</p>

9	<p>Supply, Installation, Testing & Commisioning of 40W Dynamic color changing Spot/Focus light fixture suitable for outdoor facade lighting applications as per specifications mentioned in explanatory note.</p>	<p>Supply, Installation, Testing & Commisioning of Dynamic color changing Spot/Focus light fixture suitable for outdoor facade lighting applications. The luminaries must have highly efficient LED from CREE/OSRAM/LUMILEDS/NICHIA/ SEOUL with L70 of 50,000hrs minimum. Power Consumption shall be min 40W. Luminaries optics shall be highly efficient, UV and temperature-resistant lens systems. Optional lenses to achieve beam angles 15°/20°/30°/45° or as per site requirement with Light output color: RGBW. Rated input supply of 100-277V AC, 50-60Hz. Power Factor: >0.9, THD<15%. The luminaire must be controllable through DMX512/Ethernet protocol. The body of the fixture must be made of Die-cast aluminum alloy housing with heat resistance tempered glass cover and surface finished- double powder coated, outdoor grade, anti UV with suitable IK07 rating to sustain any outer objects from damaging the fixture. The luminaries must be weatherproof with IP66 or higher rating with operating temperature: 0°C to 50°C and humidity: 10% to 90%. Housing must have adjustable bracket to set the light and illuminate to required area. Ingress protection of connector: -IP65.</p> <p>*Make: Phillips/Surya/Wipro/K-light/Canara lighting.</p>
10	<p>Supply, Installation, Testing & Commisioning of 24W Dynamic color changing Spot/Focus light fixture suitable for outdoor facade lighting applications as per specifications mentioned in explanatory note.</p>	<p>Supply, Installation, Testing & Commisioning of Dynamic color changing Spot/Focus light fixture suitable for outdoor facade lighting applications. The luminaries must have highly efficient LED from CREE/OSRAM/LUMILEDS/NICHIA/ SEOUL with L70 of 50,000hrs minimum. Power Consumption shall be min 24W. Luminaries optics shall be highly efficient, UV and temperature-resistant lens systems. Optional lenses to achieve beam angles 15°/20°/30°/45° or as per site requirement with Light output color: RGBW. Rated input supply of 100-277V AC, 50-60Hz. Power Factor: >0.9, THD<15%. The luminaire must be controllable through DMX512/Ethernet protocol. The body of the fixture must be made of Die-cast aluminum alloy housing with heat resistance tempered glass cover and surface finished- double powder coated, outdoor grade, anti UV with suitable IK07 rating to sustain any outer objects from damaging the fixture. The luminaries must be weatherproof with IP66 or higher rating with operating temperature: 0°C to 50°C and humidity: 10% to 90%. Housing must have adjustable bracket to set the light and illuminate to required area. Ingress protection of connector: -IP65.</p> <p>*Make: Phillips/Surya/Wipro/K-light/Canara lighting.</p>
11	<p>Supply, Installation, Testing & Commisioning of 72W Dynamic color changing Spot/Focus light fixture suitable for outdoor facade lighting applications as per specifications mentioned in explanatory note.</p>	<p>Supply, Installation, Testing & Commisioning of Dynamic color changing Spot/Focus light fixture suitable for outdoor facade lighting applications. The luminaries must have highly efficient LED from CREE/OSRAM/LUMILEDS/NICHIA/ SEOUL with L70 of 50,000hrs minimum. Power Consumption shall be min 72W. Luminaries optics shall be highly efficient, UV and temperature-resistant lens systems. Optional lenses to achieve beam angles 15°/20°/30°/45° or as per site requirement with Light output color: RGBW. Rated input supply of 100-277V AC, 50-60Hz. Power Factor: >0.9, THD<15%. The luminaire must be controllable through DMX512/Ethernet protocol. The body of the fixture must be made of Die-cast aluminum alloy housing with heat resistance tempered glass cover and surface finished- double powder coated, outdoor grade, anti UV with suitable IK07 rating to sustain any outer objects from damaging the fixture. The luminaries must be weatherproof with IP66 or higher rating with operating temperature: 0°C to 50°C and humidity: 10% to 90%. Housing must have adjustable bracket to set the light and illuminate to required area. Ingress protection of connector: -IP65.</p> <p>*Make: Phillips/Surya/Wipro/K-light/Canara lighting.</p>

12	Supply, Installation, Testing & Commissioning of Grid mount photo isolator DMX, RDM Amplifier unit min 2 input and 8 isolated outputs as specified in explanatory note.	Supply, Installation, Testing & Commissioning of Grid mount photo isolator DMX, RDM Amplifier unit min 2 input and 8 isolated outputs with following specifications: <ul style="list-style-type: none"> • Power Supply: 90-240V AC, 45-63Hz. • Control: DMX 512 protocol, RDM • Control Signal input: min 5 pin XLR female. <p>*Make: Phillips/Surya/Wipro/K-light/Canara lighting.</p>
13	Supply, Installation, Testing & Commissioning of Digital Lighting Console with 1024 DMX channels 1024 Channels.	Supply, Installation, Testing & Commissioning of Digital Lighting Console with 1024 DMX channels 1024 Channels. <ul style="list-style-type: none"> • 96 Fixtures. • 96 Dimmer Control Channels. • Time control of scenes: Fade in/out, LTP slope • Channels for each fixture 40 primary + 40 fine tune • LCD display with back light • 600 Scene step • 60 Scenes/Playbacks • 10 Scenes to run simultaneously • Shape generator: Shapes of Dimmer, Pan/Tilt, RGB, CMY, Color, Gobo, Iris and Focus • Master slider - Global, playback, fixture • USB Memory - FAT32 supported. <p>*Make: Phillips/Surya/Wipro/K-light/Canara lighting.</p>
14	Supply and fixing of 5 core shielded DMX signal cable for DMX network.	Supply and fixing of 5 core shielded DMX signal cable for DMX network. <p>*Make: Phillips/Surya/Wipro/K-light/Canara lighting.</p>
15	Provision of Waterproof power connectors for light fixture, Ingress protection –IP-66 or higher.	Provision of Waterproof power connectors for light fixture, Ingress protection –IP-66 or higher.
16	Supply and fixing of 40 mm heavy duty PVC conduit pipe for wiring of mainline/sub main line including supply of all joints (T-joint, L- joint etc.) for façade lighting.	Supply and fixing of 40 mm heavy duty PVC conduit pipe for wiring of mainline/sub main line including supply of all joints (T-joint, L- joint etc.) for façade lighting. <p>*Make: Polycab/Anchor/Presto-plus or similar.</p>
17	Supply and fixing of 25 mm heavy duty PVC conduit pipe for wiring of mainline/sub main line including supply of all joints (T-joint, L- joint etc.) for façade lighting.	Supply and fixing of 25 mm heavy duty PVC conduit pipe for wiring of mainline/sub main line including supply of all joints (T-joint, L- joint etc.) for façade lighting. <p>*Make: Polycab/Anchor/Presto-plus or similar.</p>
18	Supply, Laying, Testing & Commissioning of PVC copper cable 5C x 0.75 Sq mm for façade lighting.	Supply, Laying, Testing & Commissioning of PVC copper cable 5C x 0.75 Sq mm for façade lighting. <p>*Make: Polycab/Havells/KEI/RR-Kabel/V-Marc.</p>
19	Supply, Laying, Testing & Commissioning of PVC copper cable 2C x 1.5 Sq mm for façade lighting.	Supply, Laying, Testing & Commissioning of PVC copper cable 2C x 1.5 Sq mm for façade lighting. <p>*Make: Polycab/Havells/KEI/RR-Kabel/V-Marc.</p>
20	Supply, Laying, Testing & Commissioning of PVC copper cable 2C x 2.5 Sq mm for façade lighting.	Supply, Laying, Testing & Commissioning of PVC copper cable 2C x 2.5 Sq mm for façade lighting. <p>*Make: Polycab/Havells/KEI/RR-Kabel/V-Marc.</p>
21	Supply, Laying, Testing & Commissioning of PVC copper cable 3C x 4.0 Sq mm for façade lighting.	Supply, Laying, Testing & Commissioning of PVC copper cable 3C x 4.0 Sq mm for façade lighting. <p>*Make: Polycab/Havells/KEI/RR-Kabel/V-Marc.</p>

22	Provision and Connection of Cable Junction Boxes IP 66 with terminals including M 20 x 1.5/M 25 x 1.5 Synthetic short entry thread metric cable gland with lock nut as per site requirement.	Provision and Connection of Cable Junction Boxes IP 66 with terminals including M 20 x 1.5/M 25 x 1.5 Synthetic short entry thread metric cable gland with lock nut as per site requirement.
23	Provision & Commissioning of various Electrical DB/Panel etc. for completing the job of façade lighting as per site requirements.	Provision & Commissioning of various Electrical DB/Panel etc. for completing the job of façade lighting as per site requirements.
24	Programming and demonstration of entire RGBW lighting system. Cost also includes supply & fixing of nuts bolt, washer, fastener, clamp etc. transportation of all material at site & erection of bamboo stage for completion of job.	Programming and demonstration of entire RGBW lighting system. Cost also includes supply & fixing of nuts bolt, washer, fastener, clamp etc. transportation of all material at site & erection of bamboo stage for completion of job.

NOTE:

(i) All the necessary drawings are to be got approved before supply by Sr.DEE(G)/KGP.

(ii) Firm has to supply material from any of the specified makes without fail.

(iii) In case of any dispute over technical specification of any material mentioned in above schedules, final decision will be of Sr.DEE/G/KGP and the same shall be binding on the contractor.

(iv) If there is any varying of conflicting provisions in the documents forming part of the contract, Sr.DEE/G/KGP shall be the deciding authority with regards to the intensions of the provisions and decision shall be final and binding on the contractor.