



Supply, install, connect, commission and guarantee
LED lights for Ministry Of Information's building

i. **General Conditions:**

- 1.1. The work should involve, but not be limited to the following items mentioned in these specifications. As the successful tenderer shall do all work necessary to complete the project satisfactorily even if it is not mentioned in the specifications or BOQ and if contractor does not mention the extra work in BOQ , contractor is obliged to achieve work with out any charges.
- 1.2. The entire works shall be carried out in strict accordance with the latest issues of the rules and regulations of the electrical installation works issued by the Ministry of Electricity and Water, IEC and BS.
- 1.3. All electrical installations are to be supervised by a licensed electrical supervisor and carried out by an approved electrical contractor authorized by **KSE**.
- 1.4. Contractor shall be of CTC grade 4 in minimum.
- 1.5. Contractor shall submit a compliance sheet with the technical and financial offer.
- 1.6. Upon submitting the technical and financial offer, the contractor shall submit a breakdown bill of quantity for all materials included in the offer.
- 1.7. The contractor shall be experienced in electrical works and shall have a minimum experience of 15 years in the field of public sector projects and minimum of 5 years in the private sector projects and shall submit the profile with the experience and relevant projects.
- 1.8. The contractor shall be of an established company.
- 1.9. The contractor shall ensure that all staff are registered under one general trading and contracting company.

- 1.10. The contractor's established company shall have a storage to ensure the availability of any electrical material upon the urgent requirement.
- 1.11. All electrical installation materials should be the best of their kinds in terms of technology and quality including : socket outlets, power track light fittings, switches, wires, PVC pipes red sign and all accessories. Samples of all materials are to be submitted for approval before commencing the work.
- 1.12. Shop drawings for power, lighting, cables, DB layouts are to submitted for approval before commencing the work.
- 1.13. All lux calculations are to be calculated and submitted using DILUX program and shall be approved by MOI engineer.
- 1.14. If found any additional either electrical works or materials are required to complete the works satisfactorily but not mentioned in the specifications or in BOQ , the electrical contractor shall be responsible to supply and execute the additional works without extra time and money .
- 1.15. All materials submitted shall have an attached certificate letter from the manufacturer confirming that the materials comply with standards mentioned below (see ii. Codes and Standards).
- 1.16. All materials shall have an approval from MEW and the approval shall be submitted to MOI engineer for confirmation.
- 1.17. Contractor shall dismantle all existing lights and transport them to MOI stores.
- 1.18. All staff operating in the work site shall wear a safety helmet provided by the contractor and shall be wearing a uniform to identify them.

1.19. Any required modification in ceilings shall be mentioned and priced in priced BOQ or else shall be carried out without extra costs.

1.20. Five year guarantee and warranty for all electrical works from the date of issuing P.H.O certificate.

ii. Codes and Standards:

1. All lightings, and lighting systems and installation shall strictly comply with the following standards :

- a. IEC/BS EN 60598-1 Luminaires - Part 1: General requirements and tests
- b. IEC/BS EN 60598-2-1 Luminaires. Part 2-1: Particular requirements - Fixed general purpose luminaires
- c. IESNA TM-21-11 projecting Long Term Lumen Maintenance of LED Light Sources
- d. IES/IESNA LM-80-08 Approved Method for Measuring Lumen Maintenance of LED Light Sources
- e. IEC/BS EN 60529 Degrees of protection provided by enclosures
- f. IEC/BS EN 62262 Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)
- g. EC/BS EN 62471 Photobiological safety of lamps and lamp systems
- h. BS EN 55015 Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment
- i. IEC/BS EN 61547 Equipment for general lighting purposes - EMC immunity requirements

- j. IEC/BS EN 61000-3-2 Electromagnetic compatibility (EMC) Limits. Limits for harmonic current emissions (equipment input current \leq 16 A per phase)
- k. IEC/BS EN 61000-3-3 Electromagnetic compatibility (EMC) Limits. Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current \leq 16 A per phase
- l. IEEE 519-1992 IEEE Recommended Practices and Requirements for Harmonic Control in Electric Power Systems. IEEE C62.41.2-2002 Recommended Practice on Characterization of Surges in Low-Voltage (1000V and Less) AC Power Circuits

iii. Submittals:

- 1. Contractor is to submit lighting and lighting systems catalogues from manufacturing company showing that products comply with standards mentioned above.
- 2. Contractor is to submit a fully detailed technical manufacturing catalogue showing all details ; type of LED fitting proposed, overall dimensions, photometric data, rated voltage, insulation class, degree of protection, maximum working temperature and size of internal wiring.
- 3. Contractor is to submit lighting calculations using the newest version of DIALUX or any other certified lighting installation software.
- 4. Lighting distribution shall be per 1000 lumens .
- 5. Sample of each type of the proposed lighting fitting and lighting system components.
- 6. An initial design shall be submitted to MOI engineer for approval Initial Layout for lights and light fixtures including all power

- points and breakers and switches relevant to lights and initial layout must be approved by MOI engineer. , . (1 copy).
7. A final design shall be submitted showing all works done including lights, light fittings, power outlets, lux for each light, switches, ...etc (see General conditions 1.10).

iv. Scope of Work:

This project aims to supply, install, connect and commission LED lights in the ministry of information's main building, television building, cinema building and finances building. The initiative is designed to enhance the working environment by providing modern, energy efficient lights that meet the industry standards and regulations. By upgrading to LED lights, we aim to improve visual comfort , reducing energy consumption and creating a more conducive atmosphere for all the staff and visitors.

The work shall include (but not limited to) : .

a. Submittals:

- a. All lux Calculations using DIALUX software.
- b. Initial Layout for lights and light fixtures including all power points and breakers and switches relevant to lights and initial layout must be approved by MOI engineer.
- c. Detailed manufacturer catalogue and manual.
- d. Standards certificates.
- e. Samples of all equipment (lights, fixtures, wirings, etc)
- f. Final design layout (3 copies both softcopy and hardcopy).

b. Dismantling:

- The contractor shall dismantle all existing lights and transport them back to MOI stores; as instructed by MOI engineer.

c. Lights:

- Contractor shall supply, install and commission LED lights for main building, cinema building, television building, and finances building's floors and rooms according to specifications mentioned in document.

d. Light Fixtures:

- Contractor shall supply, install and commission light fixtures according to specifications mentioned in document.

e. Switches :

- Contractor shall supply and install and test and commission switches for lights.

f. Associated Civil works:

- Contractor shall carry out all necessary civil works which includes but not limited to 60 x 60 gypsum tiles, surface refinishing , alignment correction and concealment of conduits.

g. Maintenance and spare parts:

- Contractor is responsible for providing spare parts to all equipment in case of defection occurrence or need for replacement during warranty period.

h. Guarantee:

- Contractor shall provide a guarantee for all equipment.

i. Warranty:

- All equipment and works in this project shall have a warranty of 5 years.

Technical Specifications:

1. Lights:

1.1 Contractor shall supply, install and commission LED lights for the following buildings:

- a. Administration Building
- b. Cinema Building
- c. Television Building
- d. Finances Building
- e. Production Building
- f. Media Center
- g. IT building

Note: No studios shall be included in this project

- When dismantling lights, and not reusing light points for new installations, points shall be covered with covers suitable for materials of the ceilings.

1.2 Lights shall be the best of their kinds and shall comply with all standards mentioned in the document.

1.3 Lights shall be dust proof, water proof and oil proof and shall have an IP of 55 or above.

1.4. Lights shall have a color rendering index (CRI) of 80+ and above .

1.5 Lights shall be no less than 50,000 hours of light.

1.6 Lights shall be:

- a. 60 x 60 low glare type LED lights.
- b. downlights
- c. 60 x 60 low glare type LED Troffer Lights.

note: each type shall be installed according to existing fitting to avoid ceiling modifications.

1.7 Lux shall be not less than the average : 500 Lux for offices and 250 lux for corridors.

1.8 LED chip shall be creed / vs from:

- a. Philips
- b. Osram
- c. LG
- d. Samsung

1.9 Lights shall tolerate and operate at -10 degree Celsius and maximum 50+ degree Celsius.

1.10 Corridors shall have an average lux of 250 lux and shall have aluminum body and reflector.

1.11 Ladders and stairways shall have an average 75-100 Lux.

1.12 Lights voltage shall operate at 220 – 240 v and frequency of 60 Hz and pf 0.9.

1.13 Lights shall have an overheating protection.

1.14 Lights shall allow any future occupancy sensor connections.

1.15 Lights shall be made to fit offices and commercial buildings and color shall be white and daylight cool ranging from 4 K up to 5 k.

1.16 Lights shall be Lens type No glare lights

1.17 Light lamination shall be evenly distributed.

1.18 Where there should be critical equipment, lights shall be wire-glow tested prior to installation and shall be approved by MOI engineer.

1.19 Lights shall be one from the following:

- Philips lighting
- Orsam Lighting
- Smartlux

2. Drivers:

2.1 Drivers shall be of a highly reliable quality and shall have a guarantee of life time of minimum 10 years if operated in no more than 45 degree Celsius.

2.2 Drivers shall have minimum efficiency of 85%

2.3 Driver shall have an over-heat thermal protection in the form of automatic dimming or stepping down when operating in high temperatures, thermal cut-outs are not acceptable.

2.4 The driver's output current must be fully tested and must be compatible with the exact LED engine luminaire

2.5 Drivers shall operate at 240 v, 50 Hz and single phase and PF > 0.90

2.6 Drivers shall have a total luminaire harmonic distortion <20%.

2.7 LED drivers shall be EU tested and shall be from the following:

- Philips
- Osram
- Tridonic
- TCI

3. Light Fittings:

3.1 All light fittings shall be first class quality.

3.2 All fittings shall withstand a maximum temperature of 45 degree Celsius indoors.

3.3 All fittings shall be of class 1 insulation and shall be protected against dust and humidity.

3.4 Fittings for LED panel lights shall be slim type and shall be light weighed made with aluminum.

3.5. Earthing Terminal shall be provided for each terminal.

3.6. Lights shall be recessed mounted.

3.7. Body and Reflectors shall be aluminum.

4. Internal Wirings:

4.1 Contractor shall install and test and commission lights with their wirings and wire works.

4.2 Internal wiring shall be made with silicon rubber insulation or high temperature rated PVC.

4.3 If ceiling roses are to be used . terminals shall be clearly marked to indicate phases and neutral.

4.4 For all cables relevant to the lights whether new or dismantled, cables being fed from DB shall be covered with heat shrinkable sleeve tubes for the purpose of protection.

4.5 Any cable works required and not mentioned shall be priced in priced BOQ or else, contractor shall commence work without any extra costs or time.

5. Switches:

- The contractor shall ensure that no light fixtures are connected to single push buttons; if by any chance during the site visit the contractor finds light fixtures connected to push buttons; the push buttons shall be replaced with switches according to the technical specifications mentioned below:

5.1. Switches shall be brass finished matt chrome.

5.2. Switches shall be from 5 to 15 amps and grids shall have an earthing terminal.

5.3 Switches shall be push to make and push to break type.

6. Spare Parts:

6.1. The contractor shall supply spare parts for all lights and light fittings.

7. Radio Floor 2 rewiring:

The contractor shall identify, trace and properly reconnect all existing electrical light wiring in floor 2 radio building and shall replace all push buttons with rocker type or toggle type switches.

8. Warranty:

All works shall have a warranty of 5 years.