

**SECTION 26 08 31**  
**COMMISSIONING: LIGHTING SYSTEMS**

**PART 1 - GENERAL**

1.01 DESCRIPTION

- A. Provide testing and commissioning of the lighting control systems and equipment. This includes the low voltage lighting relays, conference room and training lighting control systems.

1.02 RELATED WORK

- A. Refer to other sections of this specification for contractor responsibilities relative to the commissioning process.

**PART 2 - PRODUCTS**

2.01 TEST EQUIPMENT

- A. The following test equipment shall be provided by the Commissioning Agency:
  - 1. Portable two-way radios
  - 2. Voltmeter
  - 3. Ammeter
  - 4. Light meter

**PART 3 - EXECUTION**

3.01 CONSTRUCTION OBSERVATION BY TEST ENGINEER

- A. Obtain and review design documents.
- B. Obtain and review shop drawings and operation and maintenance manuals of all lighting control systems. Review the documents for manufacturer's test procedures and anticipated results.

3.02 WALK-THROUGH BY TEST ENGINEER

- A. Walk-through:
  - 1. Review that all lighting control panels, dimmers, control stations as shown on the construction drawings and shop drawings are installed.

3.03 ACCEPTANCE CRITERIA

- A. The primary purpose of this section is to witness and verify all of the sequence of operation of lighting control equipment as specified in Section 26 09 26.
- B. Each function and test shall be performed under conditions which simulate as close to an actual operating condition as possible. To that end the contractor shall provide all necessary materials and temporary system modifications to operate lighting control systems to prove and verify proper operation. At satisfactory completion of all verified tests, the lighting control systems being tested shall be returned to the condition required by the contract documents as a complete and operational system.

- C. The tests shall be in accordance with a written Functional Performance Test (FPT) to demonstrate and certify proper system operation. The FPT shall be prepared by the test engineer and submitted to the Owner and classroom committee for approval six (6) weeks or more prior to the performance of the FPT. As a minimum, the FPT shall provide a detailed method of testing the following functions to demonstrate to the Test Engineer that the systems function as intended by the design. The following is a guide and should not be considered complete. The FPT must fully describe the test for each system.
- D. Systems to be Tested
  - 1. Exterior building lighting control system
  - 2. Street lighting control system
  - 3. Corridor lighting control system
  - 4. Lighting control/dimmer systems as required
  - 5. Manual dimmers in conference rooms, AV control rooms.
- E. Functions to be Tested
  - 1. Remote on/off control
  - 2. Remote dimmer control
  - 3. Dimmer preset values
  - 4. Control stations on, off, preset, lighting levels, emergency light automatic on feature when emergency lights are switched
  - 5. Measure light levels in training and conference rooms
  - 6. Demonstrate operation of remote control interface by operation from a computer terminal
  - 7. Test time sweep off operation on the low voltage relay system for corridor lights and public spaces
  - 8. Measure current on each dimmer circuit of the dimming system and the feeder on the dimmer
- F. Conditions of Test
  - 1. Room finishes are completed
  - 2. Normal power
  - 3. Operation after a power failure
- G. Acceptance Results
  - 1. Lighting control systems function as specified
  - 2. Preset lighting levels are set per owner's direction

### 3.04 TEST PROCEDURES

- A. Submit for approval detailed FPT procedures corresponding to the FPT criteria in Acceptance Criteria in this Section. FPT procedures shall be detailed test instructions, written with sufficient step-by-step information to allow a test to be repeated under identical conditions. List the value for all dimmer set points and lighting levels and acceptable results for each condition tested. Provide a unique alpha-numeric identification for each FPT procedure.
- B. Submit for approval test procedure check-off sheets. Number each test procedure check-off item with the same number as the corresponding FPT procedure.
- C. Demonstrate successful execution of FPT's listed under Acceptance Criteria in this

Section. Sign-off each successful test and obtain the sign-off of the Commissioning Agent or other Owner-designated witness.

END OF SECTION 26 08 31