

CONSTRUCTION STANDARD SPECIFICATION

SECTION 16514

HIGH INTENSITY DISCHARGE (HID) LUMINAIRES AND LAMPS

	<u>Page</u>
<u>PART 1 - GENERAL</u>	
1.01 Summary	2
1.02 Quality Assurance	2
<u>PART 2 - PRODUCTS</u>	
2.01 General	2
2.02 Ballasts	3
2.03 Luminaires	3
2.04 Lamps	4
<u>PART 3 - EXECUTION</u>	
3.01 Ballast Installation	4

CONSTRUCTION STANDARD SPECIFICATION

SECTION 16514

HIGH INTENSITY DISCHARGE (HID) LUMINAIRES AND LAMPS

PART 1 - GENERAL

1.01 SUMMARY

This specification covers high intensity discharge luminaires, referred to as H.I.D., for indoor use.

1.02 QUALITY ASSURANCE

The latest issue of the following specifications and standards form a part of these specifications.

- A. National Electric Code (NEC) (NFPA 70).
- B. Illuminating Engineering Society of North America (IES).
- C. Certified Ballast Manufacturers Standards (CBM)
- D. American National Standards Institute (ANSI)

ANSI C78.380 - 1984 Electric Lamps - High Intensity Discharge Lamps -
Method of Designation

ANSI C78.1300 Series Specifications for Metal-Halide and High-Pressure
Sodium Lamps

ANSI C82.4 - 1985 Ballasts for High-Intensity-Discharge and Low-Pressure
Sodium Lamps (Multiple-Supply Type)

ANSI C82.5 - 1983 Reference Ballasts for High-Intensity Discharge Lamps

PART 2 - PRODUCTS

2.01 GENERAL

- A. All material shall be as specified unless noted "or approved equal". Any H.I.D. fixture substituted by the contractor shall not only be similar in appearance to the specified fixture, but also must have a coefficient of utilization and candle power

distribution within 10 percent of the specified fixture. In addition, the manufacturer shall submit photometric data to substantiate coefficients of utilization, candle power curves and zonal lumen efficiency.

- B. All units approved shall bear a National Recognized Testing Laboratory (NRTL) label and be NRTL listed for the application.
- C. Ballasts, luminaires, and lamps shall be of commercial grade, unless specified otherwise on contract drawings.
- D. Luminaires for recessed or surface ceiling mounting shall include, in the shop drawing submittal, complete dimensions, the details of mounting and hardware, door construction, suspensions and latching, lens thickness, ballast and lamp location, heat shield if required, and gauges of steel and finishing process used.

2.02 BALLASTS

- A. Ballasts shall be in a separate compartment from the lamps and shall be encapsulated for quiet operation.
- B. Ballasts shall be of the regulator type, except for those wattages for which regulator types are not manufactured.
 - 1. The ballast shall also be manufactured to the ANSI C82.4 and ANSI C82.5 standards and operate the lamp within the limits of the ANSI voltage-wattage trapazoid.
 - 2. The ballast shall be designed to accommodate +/- 10% variation in line voltage and have a power factor of 0.9 or better.

2.03 LUMINAIRES

- A. The H.I.D. luminaire shall be a complete, coordinated assembly of ballast, ballast housing, reflector, diffuser and heat shield as required, wiring compartment, mounting device and hardware (unless remote mounted ballast is specified). All components shall be connected by secure mechanical means to reduce vibration noise and to prevent detachment of any components due to shock or vibration.
- B. Lay-in type Fixtures
 - 1. Lay-in type fixtures shall have earthquake clips to secure them to T-bars.
 - 2. Where plastic lens are specified, the lens shall be 0.4" thick acrylic and shall be mounted in the door in such a manner that the lens cannot fall due to vibration. In addition, the plastic lens shall be protected by a glass shield in case of violent lamp failure.
 - 3. The door shall have a positive hinge and latch with a light-leak gasket.

C. High-bay Type Fixtures

1. High bay fixtures shall be mounted from cast wiring boxes with hangers. The fixture mounting device shall be of the compression 3/4" conduit type with set screw. Gravity type hanger hubs on fixture are not acceptable.
2. Unless specified otherwise, reflectors shall be smooth parabolic of .064" aluminum stock finished and sealed in aluminum oxide to a thickness of 7.5 mg per square inch by an Alzak process.

2.04 LAMPS

A. High intensity discharge lamps shall be metallic halide or high-pressure sodium as defined by the IES and as specified on the construction drawings. Lamps shall be manufactured and listed by the manufacturer to ANSI C78-1300 series standards.

1. Lamp bases shall be of the mogul screw type.
2. Lamp bulbs shall be of the BT, ED, and E shape, of either clear or diffuse material.
3. The lamp shall meet all of the requirements of the ANSI C78.380 and ANSI C78.1300 Series Standards.
4. The ballast and luminaire in which the lamp is used shall be approved for the application by the lamp manufacturer.
5. Metal halide lamps shall be mounted in a vertical axis for maximum efficiency, unless specified otherwise in the contract drawings.

B. LAMP STANDARDIZATION

1. Lamps for facilities illumination, both indoor and outdoor, shall normally be of standard manufacture, such as manufactured by GE, Westinghouse, Sylvania, or equal.
2. If non-standard lamps are used, a stamped or engraved metal tag with the lamp ordering number shall be permanently attached by mechanical means, to the luminaire and the Contractor shall identify the lamp by this ordering number on two shop drawings submittals.

PART 3 - EXECUTION

3.01 BALLAST INSTALLATION

- A. All ballasts shall be connected to the building ground system.
- B. Connect ballast transformer taps, if provided, to maintain ballast voltage within manufacturers recommended tolerance.

August 1, 1991

- C. Use a receptacle type power connection, if available, as electrical disconnects for high and low bay fixtures. If not available, use twist-lock receptacles/plugs with SO cord for the electrical disconnect.
- D. Ballasts shall be securely fastened to the luminaire housing for good thermal contact.

END OF SECTION