



# ***Specification for LED Modules***

City of Mesa Transportation Department

Traffic Engineering  
Intelligent Transportation Systems Group (ITS)

# City of Mesa

## LED Module Specifications

Revised November 2, 2009

### Purpose

The purpose of this specification is to provide the minimum performance requirements for 300 mm (12 inch) and 200mm (8 inch), and 16x18 inch countdown pedestrian signal modules (international symbol type) LED traffic signal modules. This specification refers to definitions and practices described in "Vehicle Traffic Control Signal Heads: Light Emitting Diode Vehicle Arrow Traffic Signal Supplement", "Vehicle Traffic Control Signal Heads: Light Emitting Diode Vehicle Circular Traffic Signal Supplement" (VTCSH) and "Pedestrian Traffic Control Signal Indications" (PTCSI), as published by The Institute of Transportation Engineers. They may be purchased online from [www.ite.org](http://www.ite.org).

### General Description

Referenced vehicle type LED retrofit modules shall fit in all standard, incandescent vehicle traffic signal housings. These modules are to be used for the replacement of the reflector, socket, gasket, and lens assembly of an incandescent vehicle signal indication. Each retrofit module shall be complete, consisting of:

- A smooth lens with the same appearance and color as incandescent lenses
- LED circuit board inclusive of all of the LEDs and required circuit components
- The Power Supply shall be integral to the LED Module and shall be one piece
- 36 inch 16-18 AWG wire leads with quick connect terminals and also be provided with quick connect to fork terminal adapters
- A rigid housing for protection in shipping, handling and installation
- A one-piece neoprene gasket.

Vehicle type LED retrofit modules covered by this specification include the following types:

- 200 mm (8 inch) Circular Red
- 200 mm (8 inch) Circular Yellow
- 200 mm (8 inch) Circular Green
- 300 mm (12 inch) Circular Red
- 300 mm (12 inch) Circular Yellow
- 300 mm (12 inch) Circular Green
- 300 mm (12 inch) Red Arrow
- 300 mm (12 inch) Yellow Arrow
- 300 mm (12 inch) Green Arrow

Vendor is to provide exact catalog number for each module provided.

### Identification and labeling

Each individual LED signal module shall be identified for Warranty purposes and clearly marked with:

- Manufacturer's name
- Date of manufacture, *if the date is not in a standard format, the manufacturer is to provide details how to decode the manufacture date.*
- Unit serial number.
- Nominal operating voltage
- Power consumption in Watts. *No indication may exceed 20 watts.*
- Manufactured in Conformance with the ITE LED Circular Signal Supplement-June 27, 2005
- Manufactured in Conformance with the ITE LED Arrow Signal Supplement-July 1, 2007
- Manufactured in Conformance with the ITE LED Pedestrian Traffic Signal Module- March 19, 2004
- *ETL/INTERTEK LED Traffic Signal Modules Certification Program with manufacturer tracking serial number.*

### **Certification and Testing Standards**

- All 8 & 12 Inch Circular LED Signal Indications shall fully and completely comply with all sections of ITE VTCSH LED Circular Supplement specifications dated June 27th 2005.
- All 12" Arrow LED Signal Indications shall fully and completely comply with all sections of ITE VTCSH LED Vehicle Arrow Traffic Signal Supplement dated July 1, 2007
- All 16"x18" Countdown Pedestrian Traffic Signal Modules shall fully and completely comply with all sections of ITE PTSCI Part 2 LED Pedestrian Traffic Signal Module Specifications dated March 19, 2004. Modules shall be fully compliant with MUTCD 2003 Section 4E.07 and be fully preemption compatible. They shall require no special wiring or electronic modules to operate.
- All indications shall be tested to be in full compliance to all sections of the ITE VTCSH & PTSCI standards without exception and reports for each module provided by third party tester ETL/Intertek. Test report must list the LED manufacturer's model number and that model number must match the bid model number.
- In addition to design verification tests for initial production units, the manufacturer must participate in routine random sample production tests performed in the ETL/Intertek Traffic Signal Module Certification Program. Proof of Certification must be submitted with the bid.

### **Optical Visibility**

All LED Arrow indications shall be OMNI-DIRECTIONAL. That is, an LED traffic signal module that provides the same luminous intensity signal to the driver regardless of the orientation of the arrow icon or placement of the circular indication.

### **Warranty**

All LED traffic signal modules supplied shall be warranted for 5 years against manufacturing defects. Failures due to acts of God, abuse, and accidents are excluded from warranty coverage.

Vendor expressly warrants that all goods furnished shall conform to all specifications and appropriate standards, will be new, and will be free from defects in material or workmanship. Vendor warrants that all such goods will conform to any statements made on the containers or labels or advertisements for such goods and that any goods will be adequately contained, packaged, marked and labeled. Vendor warrants that all goods furnished will be merchantable, and will be safe and appropriate for the purpose for which goods of that kind are normally used. If Vendor knows or has reason to know the particular purpose for which City intends to use the goods, Vendor warrants that such goods will be fit for such particular purpose. Vendor's warranty shall run to City, its successors, and assigns. Vendor agrees to replace or correct defects of any goods not conforming to the foregoing warranty promptly, without expense to City, when notified of such nonconformity by City, provided City elects to provide Vendor with the opportunity to do so. In the event of failure of Vendor to correct defects in or replace nonconforming goods promptly, City, after reasonable notice to Vendor, may make such corrections or replace such goods and charge Vendor for the cost incurred by City in doing so.

For each defective unit returned, one new unit meeting the most current City specification shall be returned to the City. Vendor shall pay shipping both ways for modules found to be defective and under warranty. A shipper call tag shall be issued for pickups. .

Warranty shall commence from date of receipt by the end user. Product shipped shall be "fresh stock" and shall not deviate more than 45 days between the manufacture date and the date it was received by the City of Mesa.