

ITE Compliant LED Traffic Signal Module Performance Specifications

All LED Ball Signal Modules (8 inch (200mm) and 12 inch (300mm))

shall be fully compliant to the ITE VTCSH LED Circular Supplement specifications dated and adopted June 27, 2005. Compliance to the ITE VTCSH-2 Interim Purchase Specification is not sufficient, and will not substitute for compliance to the ITE VTCSH LED Circular Supplement specifications. Additionally, prior to bid award, the manufacturer shall submit to purchaser, reports from ETL/Intertek, that certify full compliance of all LED ball signal modules to the entire ITE specification. These tests should include but not be limited to the luminous intensity measurements and requirements outlined in the ITE specification sections 6.4.4 through 6.4.4.4.2 (25°C and 74°C / 49°C). Evidence of full compliance to all required testing methods, procedures and sections as outlined in the above ITE document Figure 2, Design Qualification Testing Flow Chart must be included without any exceptions, changes or omissions. The manufacturer must also submit a data sheet showing the exact catalog number of the items submitted on the bid and the Independent Lab report must show full qualification of this catalog number.

To ensure optimal quality of illumination; uniformity; reliability; and appearance, all ball traffic signal modules shall utilize Hi-flux LEDs rated at 1-watt or higher, as their source of illumination. To ensure competency of design and manufacturing, manufacturers of ball, arrow, and pedestrian signal modules shall have a minimum of 7 years of experience in utilizing Hi-flux LEDs rated at 1-watt or higher, as the source of illumination in their ball traffic signal modules. Additionally, manufacturers must have utilized in excess of 20 million Hi-flux LEDs in their LED traffic signal modules during the most recent 10 year period.



All LED 12 inch (300 mm) Arrow Signal Modules

shall be fully compliant to the "Omni-directional" specifications of the ITE VTCSH - LED Vehicle Arrow Traffic Signal Supplement adopted July 1, 2007. Additionally, prior to bid award, the manufacturer shall submit to purchaser, reports from ETL/Intertek that certify full compliance of all LED Arrow signal modules. These tests should include but not be limited to the luminous intensity measurements and requirements outlined in the ITE specification sections 6.4.4 through 6.4.4.4.2 (25°C and 74°C / 49°C). Evidence of full compliance to all required testing methods, procedures and sections as outlined in the above ITE document Attachment 1, "Design Qualification Testing Flow Chart" must be included without any exceptions, changes or omissions. The manufacturer must also submit a data sheet showing the exact catalog number of the items submitted on the bid and the Independent Lab report must show full qualification of this catalog number.

All LED 16x18 Countdown Pedestrian Signal Modules

shall be fully compliant to the ITE PTCSI Part-2: LED Pedestrian Traffic Signal Modules specifications adopted August 4, 2010 or the latest adopted version as listed on the ITE website at time of bid. Additionally, prior to bid award, the manufacturer shall submit to purchaser, reports from ETL/Intertek that certify full compliance of LED signal modules, to these specifications. Evidence of full compliance to all required testing methods, procedures and sections as outlined in the above ITE document Attachment 2, "Design Qualification Testing Flow Chart" must be included without any exceptions, changes or omissions. The manufacturer must also submit a data sheet showing the exact catalog number of the items submitted on the bid and the Independent Lab report must show full qualification of this catalog number. Combination hand/person pedestrian signal modules shall incorporate separate power supplies for the hand and the person icons.

In addition to, and in excess of the above applicable ITE specification compliance, the on-board circuitry of all LED traffic signal modules shall include voltage surge protection, to withstand high-repetition noise transients and low-repetition high-energy transients as stated in Section 2.1.8, NEMA Standard TS 2-2003. In addition, the module shall comply with the following standards: IEC 1000-4-5 at 3kV with a 2 ohm source impedance, ANSI/IEEE C62, 41-2002; IEC 61000-4-12 (6kV, 200A, 100kHz ring wave).

Warranty:

Manufacturer shall provide at time of bid, a written warranty which provides for repair or replacement of modules that fail to function as intended due to workmanship or material defects within the first 60 months from date of delivery. Modules which exhibit luminous intensities less than the minimum as specified in the ITE specifications as indicated above, within the first 60 months from date of delivery shall be replaced or repaired.

Notes:

CSA approved to the following applicable requirements:
CSA Standard C22.2 No. 9.0-96 General Requirements for Luminaires
CSA Std. No. C22.2 No. 250.0-04 Luminaires
UL Std. No. 1598-2004 (May 2006) Luminaires



Designed in the U.S.A
Meets Buy American provision
under the American Recovery and
Reinvestment Act 2009

For projects requiring Buy American provision certification,
consult factory for additional information
and special ordering details

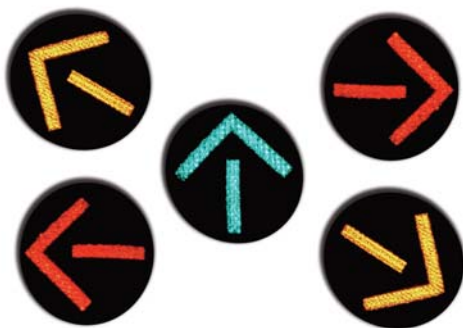
Uniform Appearance LED Traffic Signal Modules



- ▲ *Fully compliant to ITE VTCSH-LED Circular Signal Supplement dated 6/27/2005
- ▲ Industry's lowest power for all colors
- ▲ Meets or exceeds ITE intensity, color and uniformity specification, including 49°C / 74°C requirements
- ▲ Temperature compensated power supplies for longer LED life
- ▲ Uniform appearance
- ▲ Expanded view radiation pattern suitable for span wire and steep grade applications
- ▲ Transient suppression exceeds ITE and NEMA specifications (Up to 6KV ring wave)
- ▲ Manufactured with anti-capillary wires
- ▲ Conformal coated power supply
- ▲ Secondary lens treatment for abrasion resistance
- ▲ Patent No. 7,281,818 and other patents pending
- ▲ Intertek/ETL certified and listed on ETL certification program
- ▲ All units operate at 80-135VAC RMS, 60±3Hz

Part Number	Color	Lens Type	Dominant Wavelength (nm)	Typical Wattage at 25°C	Peak Minimum Maintained Luminous Intensity (cd)	*Meets ITE VTCSH LED Circular Signal Supplement	CSA Approved	Size (in)
433-1110-003XL	Red	Tinted	625	6	165	✓	✓	8
433-1170-003XL	Red	Clear	625	6	165	✓	✓	8
433-3130-901XL	Yellow	Tinted	590	7	410	✓	✓	8
433-3170-901XL	Yellow	Clear	590	7	410	✓	✓	8
433-2120-001XL	Green	Tinted	500	8	215	✓	✓	8
433-2170-001XL	Green	Clear	500	8	215	✓	✓	8
433-1210-003XL	Red	Tinted	625	6	365	✓	✓	12
433-1270-003XL	Red	Clear	625	6	365	✓	✓	12
433-3230-901XL	Yellow	Tinted	590	12	910	✓	✓	12
433-3270-901XL	Yellow	Clear	590	12	910	✓	✓	12
433-2220-001XL	Green	Tinted	500	7	475	✓	✓	12
433-2270-001XL	Green	Clear	500	7	475	✓	✓	12

OMNI-DIRECTIONAL, UNIFORM APPEARANCE LED ARROWS



- ▲ *Fully compliant to ITE VTCSH-LED Vehicle Arrow Supplement dated 7/01/2007
- ▲ Allows for mounting in any orientation in the signal head
- ▲ Industry's lowest power for all colors
- ▲ Meets or exceeds ITE intensity, color and uniformity specification, including 49°C / 74°C requirements
- ▲ Temperature compensated power supplies for longer LED life
- ▲ Uniform appearance
- ▲ Transient suppression exceeds ITE and NEMA specifications (Up to 6KV ring wave)
- ▲ Manufactured with anti-capillary wires
- ▲ Conformal coated power supply
- ▲ Secondary lens treatment for abrasion resistance
- ▲ Intertek/ETL certified and listed on ETL certification program
- ▲ All units operate at 80-135VAC RMS, 60±3Hz

Part Number	Color	Lens Type	Typical Wattage at 25°C	Dominant Wavelength (nm)	Peak Minimum Maintained Luminous Intensity (cd)	*Meets ITE Spec	CSA Approved
432-1314-001XOD	Red	Tinted	6	628	56.8	✓	✓
432-1374-001XOD	Red	Clear	6	628	56.8	✓	✓
431-3334-901XOD	Yellow	Tinted	6	590	141.6	✓	✓
431-3374-901XOD	Yellow	Clear	6	590	141.6	✓	✓
432-2324-001XOD	Green	Tinted	6	500	73.9	✓	✓
432-2374-001XOD	Green	Clear	6	500	73.9	✓	✓