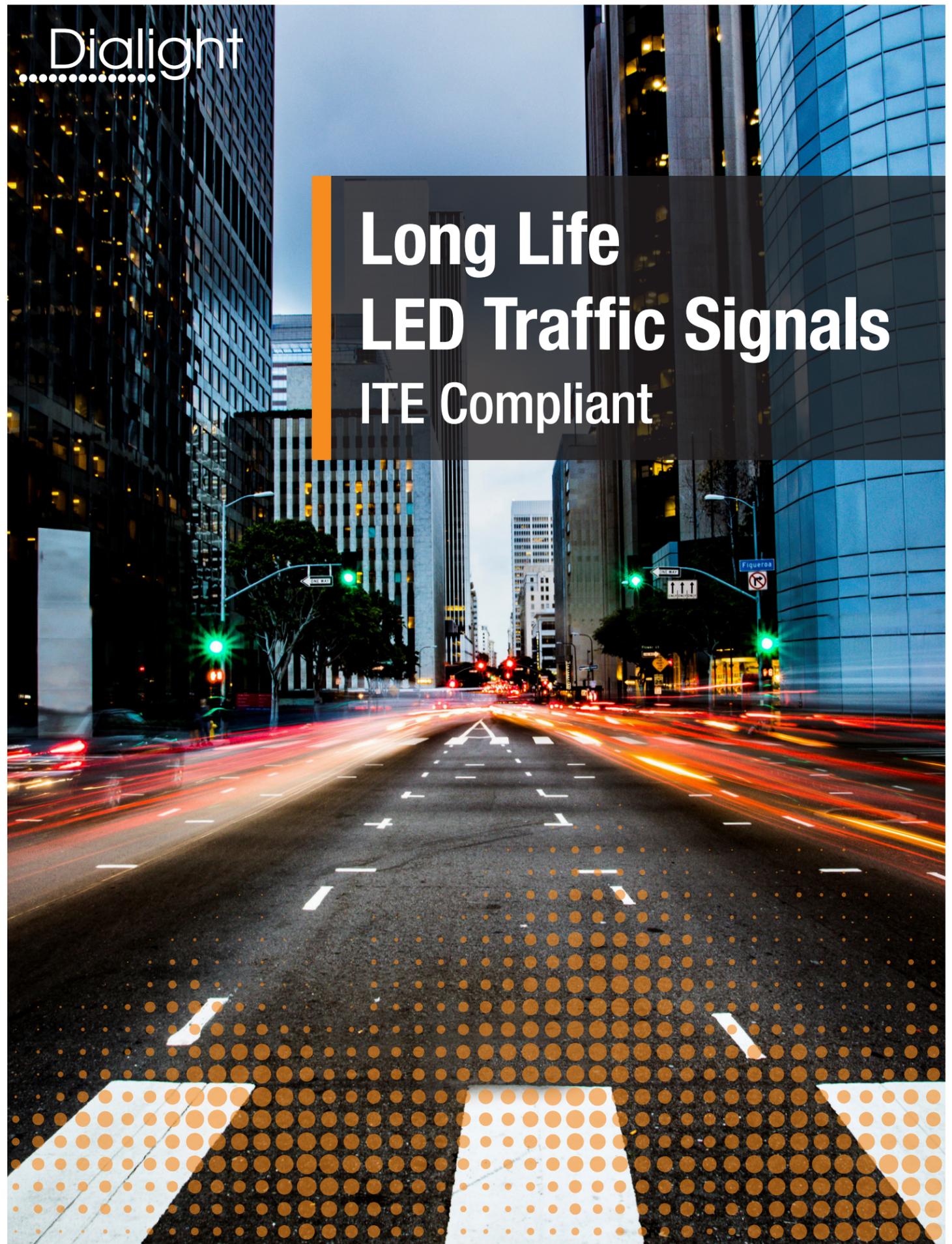




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Dialight

**Long Life  
 LED Traffic Signals  
 ITE Compliant**

Dialight reserves the right to make changes at any time in order to supply the best product possible. The most current version of this document will always be available at: [www.dialightsignalsandcomponents.com](http://www.dialightsignalsandcomponents.com)  
 Warranty Statement: Except for the warranty expressly provided for [herein/above/below], Dialight disclaims any and all other warranties, express or implied, including, without limitation, any warranties of merchantability, fitness for a particular purpose, title, and noninfringement.

### LED Ball Signal Modules: 8" (200 mm) and 12" (300 mm)

All 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 datasheet showing the catalog number of the items submitted on the bid and the Independent Lab report must show full qualification of this catalog number.

### LED 12" (300 mm) Arrow Signal Modules

All 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 catalog number of the items submitted on the bid and the Independent Lab report must show full qualification of this catalog number.

### LED Signal Modules

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 and arrow 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.

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 15 years 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 15 years from date of delivery shall be replaced or repaired.

### Electrical Specifications

**Operating Voltage**  
80VAC-135VAC  
(120VAC nominal)

**Operating Temp Range**  
-40°C to +74°C

**Turn-on / Turn-off Time**  
< 75 msec

**Power Factor**  
> 0.9

**Total Harmonic Distortion**  
< 20%

**Failed State Impedance**  
> 250K ohm within 300ms



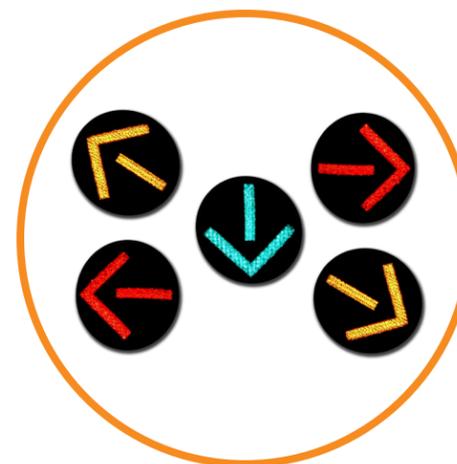
### UNIFORM APPEARANCE

## Long Life LED Traffic Signal Modules

### Features & Benefits

- 15 year full performance warranty
- Enhanced thermal management
- Robust LED technology
- Meets / exceeds ITE uniformity specifications (better than 10-to-1)
- Expanded view radiation pattern suitable for span wire and steep grade applications
- Transient suppression exceeds ITE and NEMA specifications
- Meets / exceeds ITE moisture intrusion specifications
- Meets / exceeds ITE failed state impedance specifications
- Hard coated lenses for abrasion resistance
- Intertek-ETL certified
- Long life power supply is conformally coated for robust operation
- All modules meet the ITE VTCSH-LED Circular Signal Supplement over the full temperature range of -40°C to +74°C
- CSA C22.2 No. 250.0-08
- CSA C22.2 No. 250.13-17
- UL 1598, 3rd Edition

Part Number		Color	Dominant Wavelength (nm)	Typ Wattage @ 25°C	Peak Min Maintained Luminous Intensity (cd)
Tinted Lens	Clear Lens				
<b>8" Module</b>					
433-1110-003XL15	433-1170-003XL15	Red	625	7	165
433-3130-901XL15	433-3170-901XL15	Yellow	590	7	410
433-2120-001XL15	433-2170-001XL15	Green	500	7	215
<b>12" Module</b>					
433-1210-003XL15	433-1270-003XL15	Red	625	7	365
433-3230-901XL15	433-3270-901XL15	Yellow	590	13	910
433-2220-001XL15	433-2270-001XL15	Green	500	7	475



### UNIFORM APPEARANCE

## 12" Long Life Omni-Directional LED Arrow

### Features & Benefits

- 15 year full performance warranty
- Enhanced thermal management
- Robust Hi-Flux LED technology
- Meets / exceeds ITE uniformity specifications (better than 10-to-1)
- Transient suppression exceeds ITE and NEMA specifications
- Meets / exceeds ITE moisture intrusion specifications
- Meets / exceeds ITE failed state impedance specifications
- Hard coated lenses for abrasion resistance
- Intertek-ETL certified
- Long life power supply is conformally coated for robust operation
- All modules meet the ITE VTCSH-LED Vehicle Arrow Traffic Signal supplement over the full temperature range of -40°C to +74°C
- CSA C22.2 No. 250.0-08
- CSA C22.2 No. 250.13-17
- UL 1598, 3rd Edition

Part Number		Color	Dominant Wavelength (nm)	Typ Wattage @ 25°C	Peak Min Maintained Luminous Intensity (cd)
Tinted Lens	Clear Lens				
432-1314-001XOD15	432-1374-001XOD15	Red	625	7	58.4
431-3334-901XOD15	431-3374-901XOD15	Yellow	590	14	145.6
432-2324-001XOD15	432-2374-001XOD15	Green	500	8	76