

FIRE

Product Introduction

The Fire Series LED Array is color tunable COB LED. The products deliver high quality light with lighting-class reliability. This high flux density light source is designed to support a wide range of high quality, low cost directional luminaires and replacement lamps for commercial and residential applications. Good color consistency, and featuring a 9-mm optical source. HRC0910 enables many kinds of application including retrofit and luminaire designs.

Series Include

FireSeries

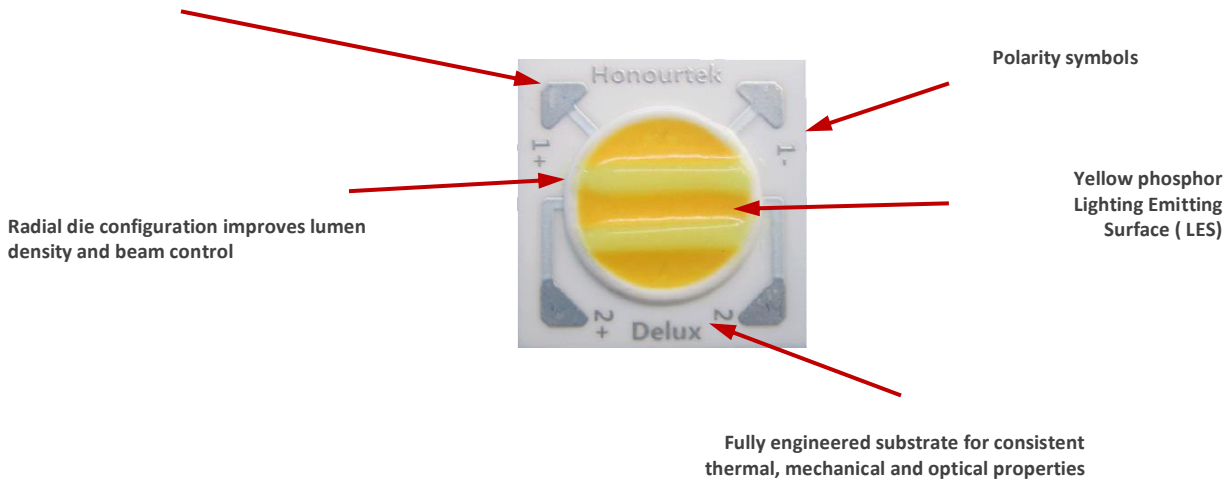
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Typical Product Feature

Honourtek arrays are fully engineered devices that provide consistent thermal and optical performance on an engineered mechanical platform. The Fire Series arrays are the most compact chip-on-board devices across all of Honourtek' LED Array products. The arrays incorporate several features to simplify design integration and assembly.

Figure 1: Array Features

Solder Pads



Product bin and order code format

HRC0910-2757-90-V-FD00-F1

HRC	09	10	2757	90	V	FD00	F1
Product Family	Light Emitting Surface Diameter	Watt TYP	Color Temperature	CRI	VOLTs	Series	Flux Bin

Note : X000 nomenclature corresponds to the following:

- A000 = Standard Series
- B000 = Vigour Series
- W000 = Warmer Series
- J000 = Ocean Series
- M000 = Meat Series
- Y000 = Atmosphere Series
- F000 = Fire Series

Lumen Maintenance Characteristics

Honourtek projects that its family of LED array products will deliver, on average, greater than 70% lumen maintenance after 50,000 hours of operation at two times the nominal drive current in Table 1. This performance assumes constant current operation at up to 2 times the nominal drive current with case temperature maintained at or below 85°C. For use beyond these operating conditions please consult your Honourtek sales representative for further assistance.

Honourtek conducts lumen maintenance tests per LM-80. Observation of design limits is required in order to achieve this projected lumen maintenance.

Environmental Compliance

Honourtek is committed to providing environmentally friendly products to the solid-state lighting market. Fire series LED Arrays comply with the European Union directives on the restriction of hazardous substances in electronic equipment, namely the RoHS directive. Honourtek does not intentionally add the following restricted materials to any LED array products: lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE).

Minor Product Change Policy

The rigorous qualification testing on products offered by Honourtek provides performance assurance. Slight cosmetic changes that do not affect form, fit, or function may occur as Honourtek continues product optimization.

Case Temperature Measurement Point

A case temperature measurement point location is included on the top surface of the Fire series LED arrays. The location of this measurement point is indicated in the mechanical dimensions section of this data sheet.

The purpose of this measurement point is to allow the user access to a measurement point which correlates to the true case temperature on the back surface of the LED array. Once the LED array is installed, it is challenging to measure the back surface of the array, or true case temperature.

Consistent and repeatable temperature measurements can be correlated to the data sheet performance specifications and to published LM-80 reliability data. The use of the case temperature measurements point is fully explained in AN30.

Cautionary Statements

CAUTION: CONTACT WITH LIGHT EMITTING SURFACE (LES)

Avoid any contact with the LES. Do not touch the LES of the Fire series LED array or apply stress to the LES (yellow phosphor resin area). Contact may cause damage to the LED array.

Optics and reflectors must not be mounted in contact with the LES (yellow phosphor resin area). Optical devices may be mounted on the top surface of the plastic housing of the Fire series LED array. Use the mechanical features of the LED array housing, edges and/or mounting holes to locate and secure optical devices as needed.

CAUTION: CHEMICAL EXPOSURE HAZARD

Exposure to some chemicals commonly used in luminaire manufacturing and assembly can cause damage to the LED array. Please consult Honourtek Application Note AN31 for additional information.

CAUTION: EYE SAFETY

Eye safety classification for the use of Honourtek Fire series LED arrays is in accordance with IEC specification EN62471:Photobiological Safety of Lamps and Lamp Systems. Fire series LED arrays are classified as Risk Group 1 (Low Risk) when operated at or below the maximum drive current. Please use appropriate precautions. It is important that employees working with LEDs are trained to use them safely.

CAUTION: RISK OF BURN

Do not touch the Fire series LED array or yellow resin area during operation. Allow the array to cool for a sufficient period of time before handling. The Fire series LED array may reach elevated temperatures such that could burn skin when touched.

CAUTION: CHEMICAL EXPOSURE HAZARD

Exposure to some chemicals commonly used in luminaire manufacturing and assembly can cause damage to the LED Array. Please consult Application Note AN41 for additional information.

Product Selection Guide

FLUX CHARACTERISTICS, ACCURATE WHITE ORDER CODES AND BINS (T_j=85°C)

Table 1: Selection Guide, Pulsed Measurement Data

Part Number	Series	CCT (k)	Voltage (V)			Luminous Flux (lm)			Current
			Min	Typ	Max	Min	Typ	Max	
HRC0910-2757-90-V-FD00-F1	F	2700	29	30	34	830	900	970	280
		5700	29	31.2	34	860	930	1000	280

Notes

1. Typical stabilized DC performance values are provided as reference only and are not a guarantee of performance.
2. Typical performance is estimated based on operation under DC (direct current) with the LED array mounted to a heat sink with thermal interface material and the case temperature maintained at 85°C. Based on Honourtek test setup, values may vary depending on the thermal design of the luminaire and/or the exposed environment to which the product is subjected.
3. Honourtek maintains a ± 7% tolerance on flux measurements.
4. Honourtek maintains a ± 2% tolerance on CRI measurements.

Characteristics

Table 2: Characteristics Data

Characteristics	Unit	Minimum	Typical	Maximum
Viewing angle	degree		120	
ESD classification			Class 2	
Ra			90	
Reserve current	mA			0.1
Thermal Resistance	° C/W		N/A	

Absolute Maximum Ratings

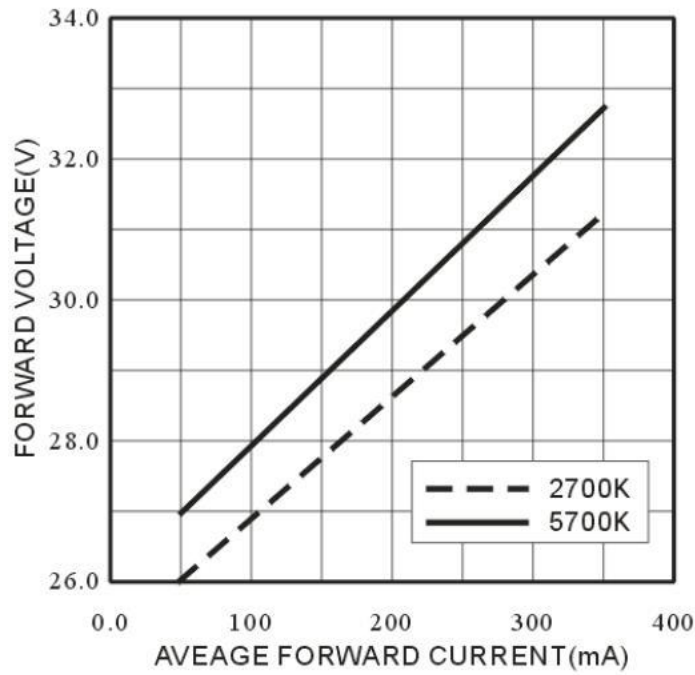
Table 3 : Maximum Ratings

Parameter	Symbol	Rating
ForwardCurrent (mA)	If	350
Reverse Voltage (V)	Vr	-15
OperatingTemperature (°C)	Top	-40~+100
StorageTemperature (°C)	Tst	-40~+100
CaseTemperature (°C)	Tc	105
Junction Temperature (°C)	Tj	140

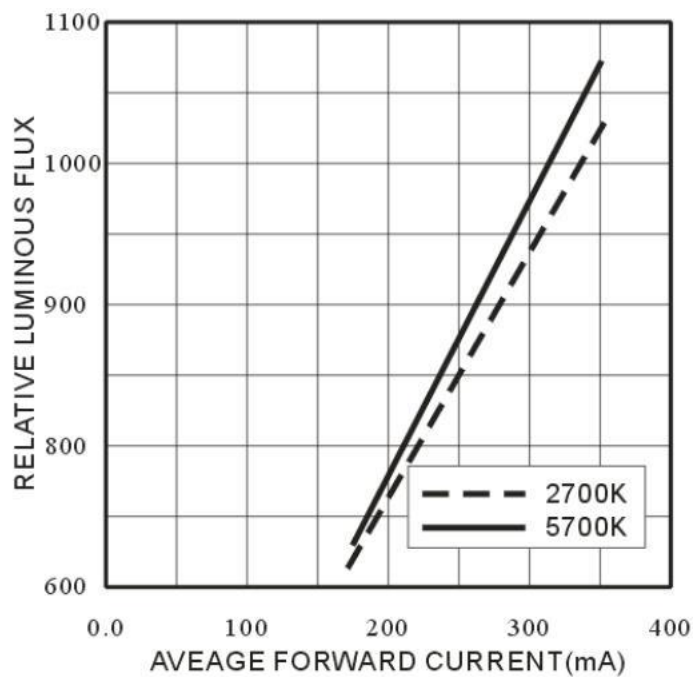
Notes :

1. See Honourtek Application Note AN31, Assembly Considerations for Fire series LED arrays, for more information.
2. For IEC 62717 requirement, please contact Honourtek Sales Support.

Drive Current versus Forward Voltage Characteristics

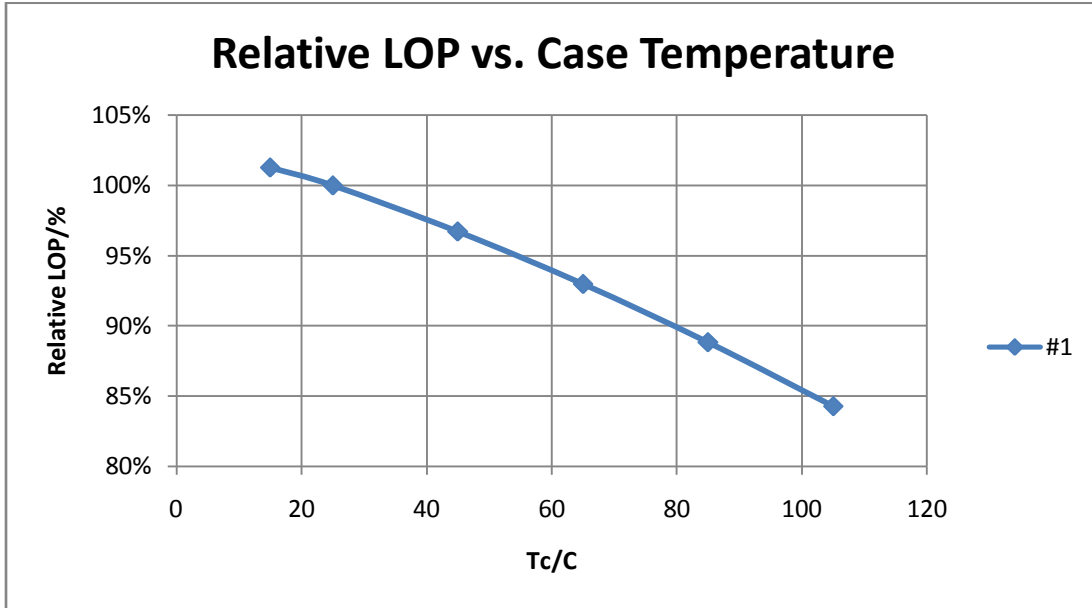


Typical Relative Luminous Flux vs. Drive Current, $T_j=85^\circ\text{C}$



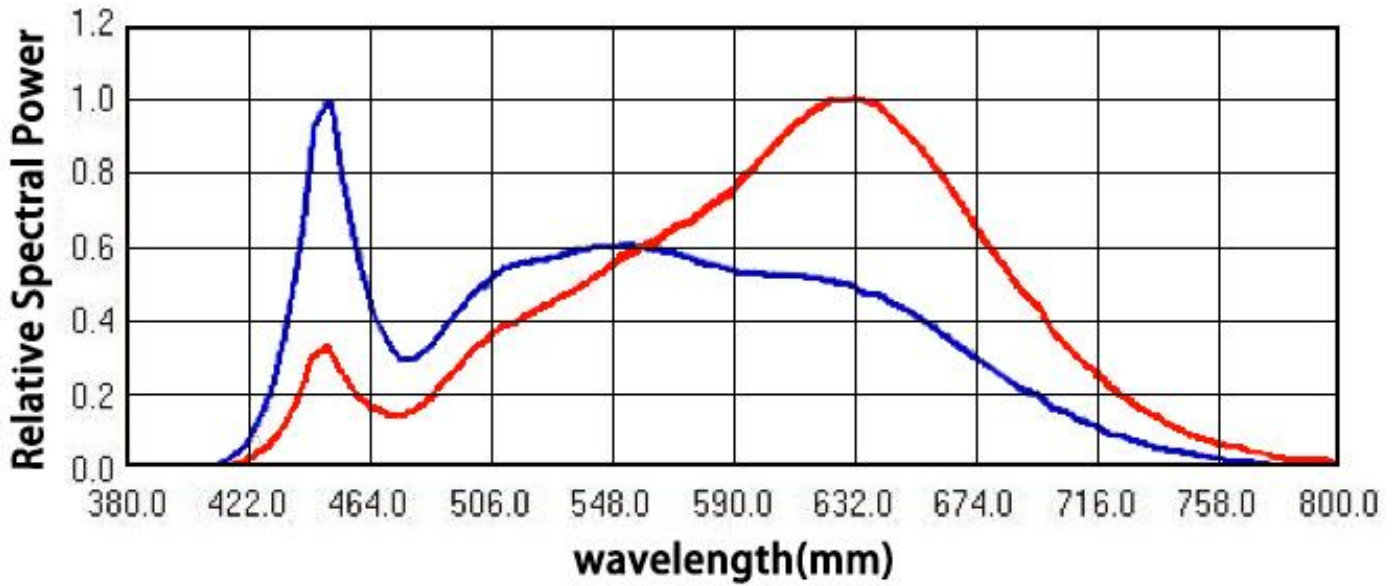
Typical Light Output Characteristics vs. Temperature

Typical Flux vs. Junction Temperature



RELATIVE SPECTRAL POWER DISTRIBUTION, Tj=25°C

The following graph is the result of a series of pulsed measurements at Tj=25° C.

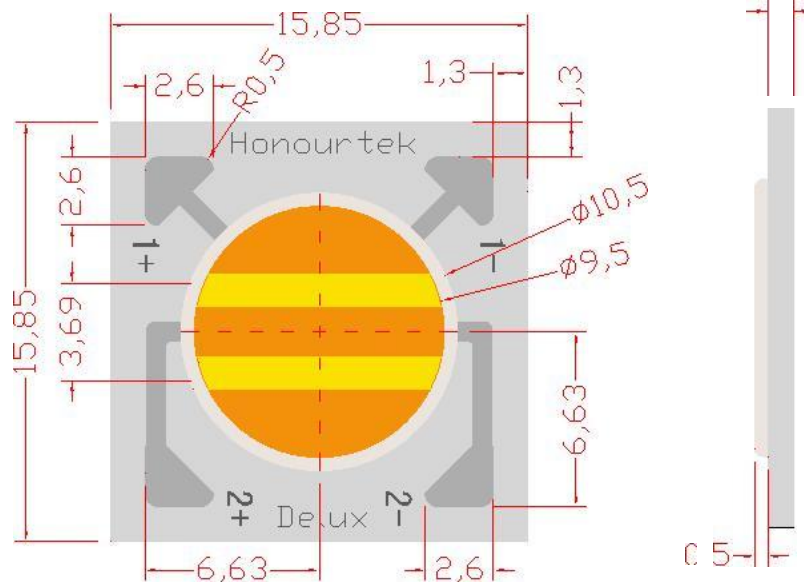


Mechanical Dimensions

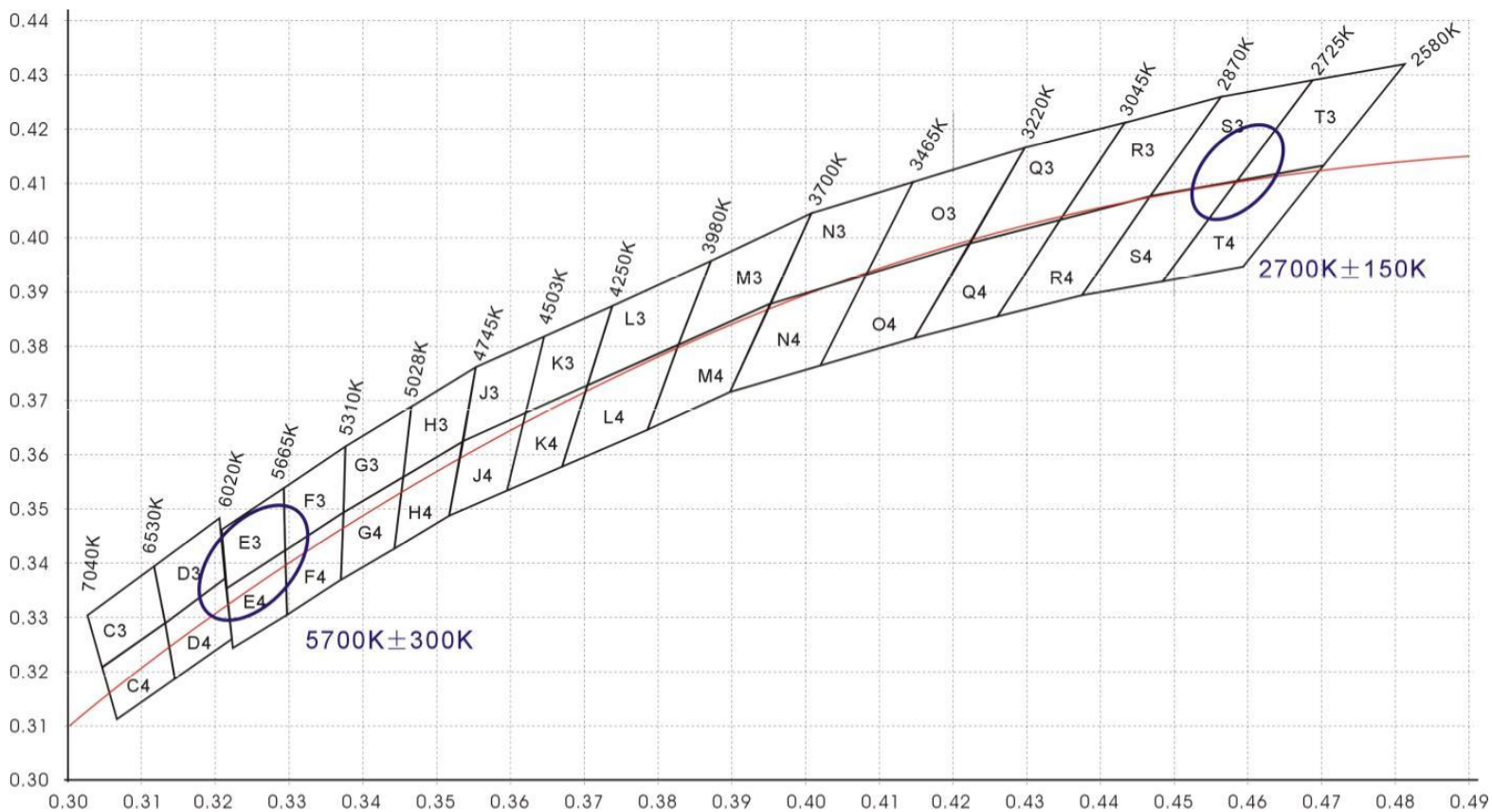
Drawing for Fire Arrays

LES = $\varnothing 10 \pm 0.2$

Dimensions are in mm.
Tolerances unless otherwise Specified : $\pm 0.1\text{mm}$



Chromaticity Coordinates (Condition: $T_j = 85^\circ \text{C}$)



HRC0910 Chromaticity Bins

Center Point		
CCT	CIEx	CIey
2700K	0.4590	0.4120
5000K	0.3250	0.3400

Packaging

Packaging Tray and Labeling



17.2 x 17.2 x 1 cm

Notes:

Honourtek HRC0910LEDs are packaged in trays of 25. Four trays are sealed in an anti-static bag and placed inside a carton, for a total of 100 LEDs per carton.

About HONOURTEK

HONOURTEK is the global Specific Application Color and Customized LED Supplier. The company develops, manufactures and distributes groundbreaking LEDs that shatter the status quo and help customers gain and maintain a competitive edge.

With keeping create better light color. HONOURTEK is uniquely positioned to deliver lighting advancements well into the future by maintaining an unwavering focus on quality, innovation and reliability.

To learn more about our portfolio of LEDs, please visit Honourtek.com.

Lighting for people, Lighting for value!

A large version of the HONOURTEK logo, with "HONOUR" in red and "TEK" in grey.

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