

Technical Information Sheet.

Product Range: AL9000 LED Quartz Bollard

1. Design Data

1.1 LED's

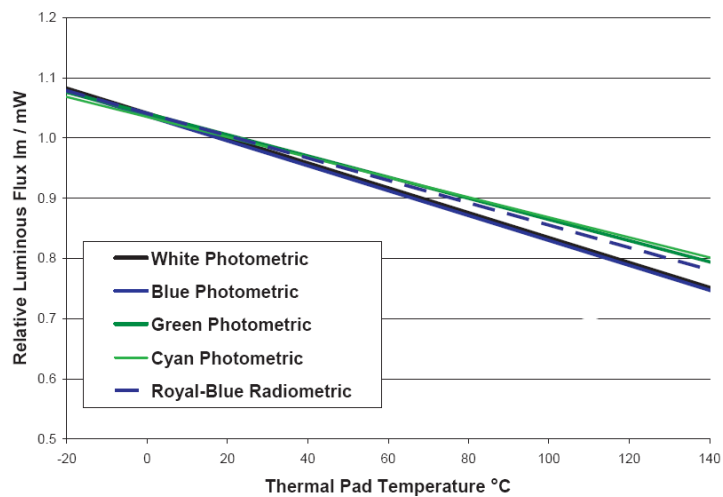
- Manufacturer: Lumileds
- Product: Luxeon Rebel
- Part Number: LXML-PWN1-0100

1.2 Driver(s)

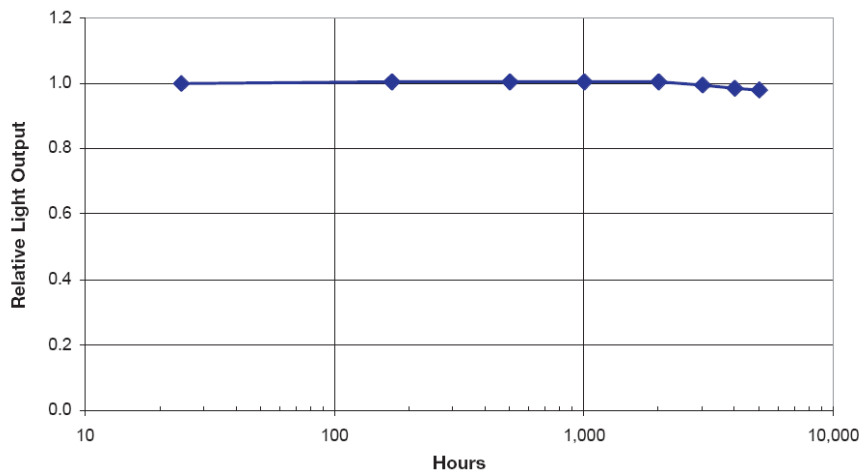
- Manufacturer: Harvard Eng.
- Type: CL1000S-240-C
- Drive current: 500mA/1000mA; Power out: 33W (max) ; V out: 55V (max)
- Ta: 0°-50°C ; Tc: 80°C (max)

1.3 Lumen Depreciation.

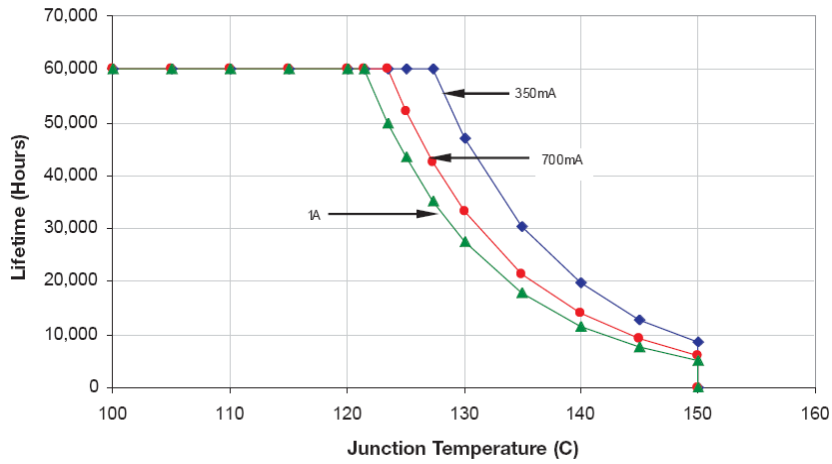
- a) Lumen Depreciation Vs Thermal Pad Temperature:
LED package (outside the luminaire at an ambient temperature of 25°C)**



- b) Lumen Depreciation Vs Hours of Use:
White LED:
Case Temp 85°C; Junction Temp 110°C (approx); Drive current 700mA**



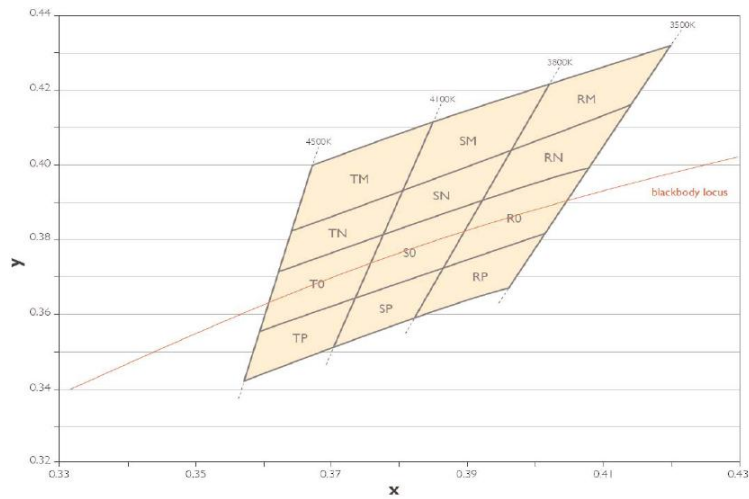
1.4 Electrical life: (10% LED Failures)
LED package (outside the luminaire at an ambient temperature of 25°C)



1.5 CCT:
Colour Temperature ($\pm 5\%$ tester tolerance) at 350mA; Thermal Pad Temperature = 25°C
LED package (outside the luminaire at an ambient temperature of 25°C)

Colour	Min.	Typ.	Max.
Neutral-White	3500K	4100K	4500K

1.6 x & y values:
 Lumileds maintain a tester tolerance of ± 0.005 on x, y color coordinates.
LED package (outside the luminaire at an ambient temperature of 25°C)



1.7 CRI:
LED package (outside the luminaire at an ambient temperature of 25°C)

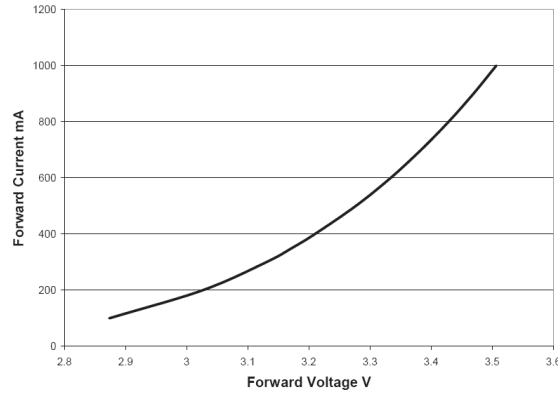
CCT Range	Typical CRI	Min Flux	Typical Efficacy (lm/w)
3500-4500K	70	100	91

1.8 Board temperature T_{board}

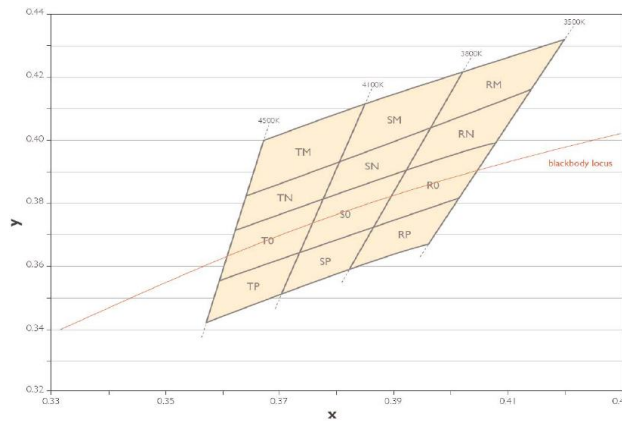
LED package installed in the luminaire at T_a 25°C.

- Measured Thermal Pad Temperature (°C) at Drive Current = 67.8°C

Color	$R\theta_{J-C}$ Typical Thermal Resistance Junction to Thermal Pad (°C/W)
Neutral White	10



1.9 The colour bin, CCT, x & y, values and MacAdam ellipse category (e.g. Cat 1-4) of the LED package at the operating T_{board}



Bin Code	X	Y	Typical CCT (K)	Bin Code	X	Y	Typical CCT (K)
TM	0.367294	0.400290	4300	S0	0.378264	0.382458	3950
	0.385953	0.412995			0.392368	0.390932	
	0.381106	0.393747			0.387071	0.373899	
	0.364212	0.382878			0.374075	0.365822	
TN	0.364212	0.382878	4300	SP	0.374075	0.365822	3950
	0.381106	0.393747			0.387071	0.373899	
	0.378264	0.382458			0.382598	0.359515	
TO	0.362219	0.371616	4300	RM	0.370582	0.351953	3650
	0.378264	0.382458			0.402270	0.422776	
	0.374075	0.365822			0.420940	0.432618	
	0.359401	0.355699			0.414776	0.416097	
TP	0.359401	0.355699	4300	RN	0.396279	0.403508	3650
	0.374075	0.365822			0.396279	0.403508	
	0.370582	0.351953			0.414776	0.416097	
SM	0.381106	0.393747	3950	R0	0.408593	0.399525	3650
	0.396279	0.403508			0.392368	0.390932	
	0.381106	0.393747			0.392368	0.390932	
SN	0.392368	0.390932	3950	RP	0.408593	0.399525	3650
	0.378264	0.382458			0.402113	0.382156	
	0.381106	0.393747			0.387071	0.373899	
	0.392368	0.390932			0.396564	0.367284	

1.10 Ra8 Colour Rendering Index at the operating T_{board} 70

2. Luminaire Performance Measurements.

2.1. Luminaire Lumen Output..... 1500 lm

2.2. Luminaire power..... 35 W

2.3. Luminaire efficacy..... 43 lm/W

2.4 Luminous Intensity Distribution..... Relative Photometry.

Download separate Photometric Data Files:

- AL9001 Square Lighting Distribution,
- AL9002 Asymmetric Lighting Distribution.
- AL9003 Axial Lighting Distribution.

All AL9000 Quartz Bollards utilise 4x LED Boards mounted on octagonal section Heat Sink Core. Separate arrangements of selected Heat Sink Core Faces are used to alter the overall lighting distribution.

