

28L

series

0.2 W
PLCC 2.8 x 3.5 MM

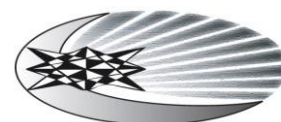
TECHNICAL
DATASHEET

Introduction

Octa Light white LEDs are optimized to bring high performance and quality of light needed for today's wide range of lighting applications, such as general, decorative, indoor, outdoor, industrial or commercial lighting etc. The new 28L LED Series emitters deliver excellent efficacy, lifetime and reliability. Available in variety of CCT and CRI combinations. This document contains the performance data needed to design LED based applications.

Octa Light 28L Series Features

- Wide range of specified CCT & CRI combinations
- ANSI compliant Quarter binning
- Tested according to LM-80 Lumen maintenance standard
- Reflow process compatible
- Optimized optical performance for higher light output compared to market competitors



General Coding instruction

<u>OCTL</u>	-	<u>28L</u>	-	<u>WW</u>	<u>B</u>	-	<u>A</u>	<u>8A</u>	<u>T</u>	-	<u>I</u>	<u>80</u>
X1		X2		X3	X6		X4	X5	X7		X8	X9

X1 Company name	X2 Series name	X3 Color type	X4 Optical type	X5 Chromaticity coordinates BIN ¹	X6 Minimum Flux BIN (Lm)	X7 Testing current (mA)	X8 Vf range at nominal current (V)	X9 CRI range			
OCTL	28L	CW – Cool White	A – 120 deg	1 (A, B, C, D, W, E, F, H, 0) ²	B – 20	T – 60	I – 2.8-3.0	60 - >60+			
				2 (A, B, C, D, W, E, F, H, 0)	C – 30		J – 3.01-3.2	70 - >70+			
				3 (A, B, C, D, W, E, F, H, 0)	D – 40		K – 3.21-3.4	80 - >80+			
		NW – Neutral White		4 (A, B, C, D, W, E, F, H, 0)							
				5 (A, B, C, D, W, E, F, H, 0)							
				6 (A, B, C, D, W, E, F, H, 0)							
		WW – Warm White		7 (A, B, C, D, W, E, F, H, 0)							
				8 (A, B, C, D, W, E, F, H, 0)							
				BL (Blue)							
		BL – Blue		RB (Royal Blue)							
				VL (Violet)							
				RD (Red)							
RD – Red	RO (Red-Orange)										
	PK (Pink)										
	GN (Green)										
GN – Green	CY (Cyan)										

Notes:

1. Information about chromaticity coordinates bin can be found in Binning information file.
2. Chromaticity coordinates bin 0 includes all of the bins 1A, 1B, 1C, 1D, 1W, 1E, 1F, 1H. This applies for all bins (1-8).



Characteristics

Typical characteristics at $I_f = 60 \text{ mA}$ and thermal pad temperature 25°C :

Parameter	Symbol	Value	Units
Flux	F	20-40	lm
Forward voltage	V_f	2.8-3.4	V
Correlated color temperature	CCT	2700	K
		3000	
		3500	
		4000	
		4500	
		5000	
		5700	
6500			
Thermal resistance, junction to solder point	-	10	C/W
Viewing Angle Lambertian Distribution (FWHM)	$2\Theta_{1/2}$	120	Deg
Color Shift Versus angle Δx and Δy at 80 degree viewing angle, CIE 1931 Optical distribution type A	$\Delta x, \Delta y$	0.04, 0.04	

Absolute Maximum Ratings

Absolute maximum ratings for thermal pad temperature 25°C

Parameter	Symbol	Max rate
Maximum DC forward current	$I_{f\text{max}}$	200 mA
Pulsed forward current (10 mS pulse width, 10% duty cycle)	$I_{f\text{peak}}$	400 mA
Maximal Led junction temperature	$T_{j\text{max}}$	150 C
ESD sensitivity	V	Class 2 *
Storage temperature	T_{store}	-40C to +120 C
Allowable Reflow cycles		3 times
Reverse voltage at maximal reverse current 10 μA	V_r	5 V

* ESD sensitivity CLASS II, human body model, ANSI/ESDA/JEDECJS-001-2012

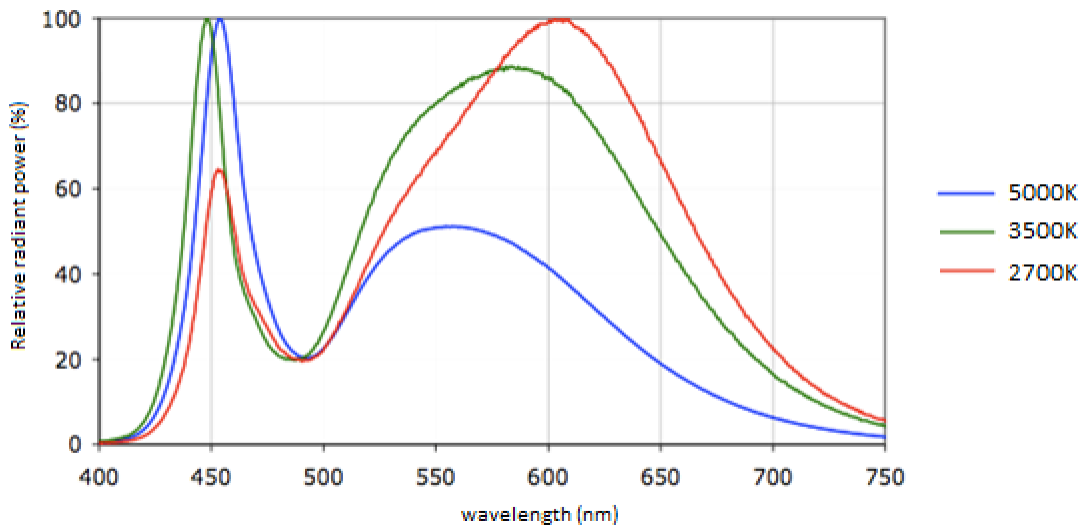
JEDEC Moisture Sensitivity

LEVEL	Floor Life		Soak Requirements	
	Time	Condition	Time	Condition
3	168 hours	30, 60% RH	192 Hrs +5 -0 Hz	30 C 62% RH

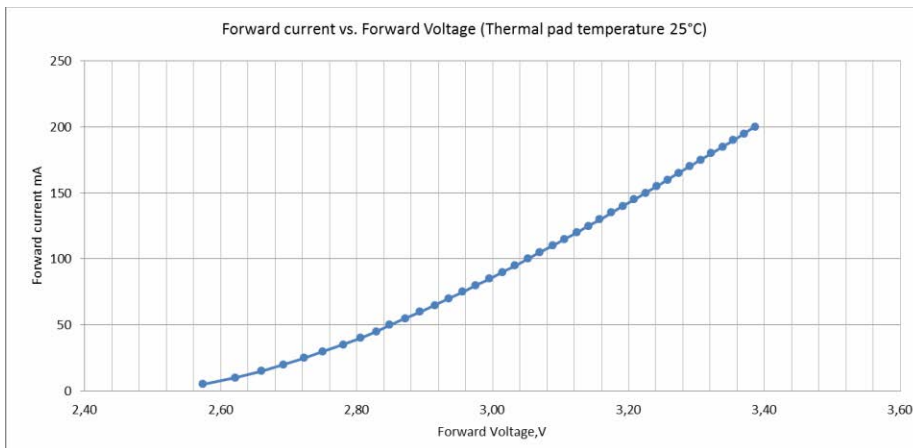


Characteristic curves

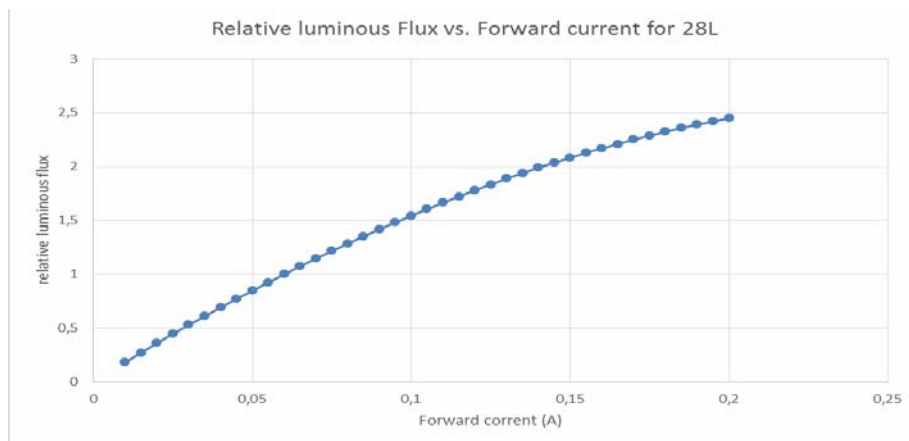
Relative radiant power



Forward current vs. Forward Voltage (thermal pad temperature 25 °C)

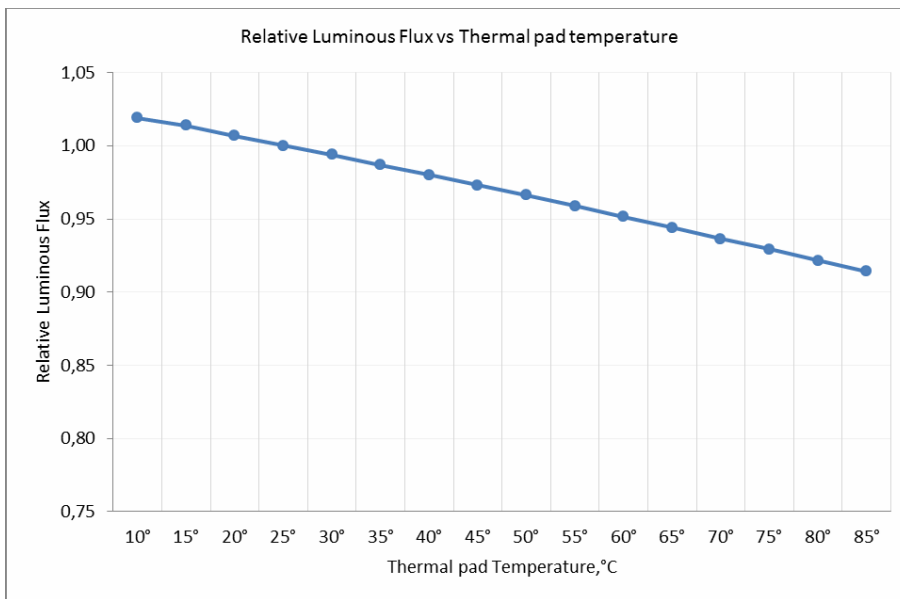


Relative Luminous Flux vs. Forward Current (thermal pad temperature 25 °C)

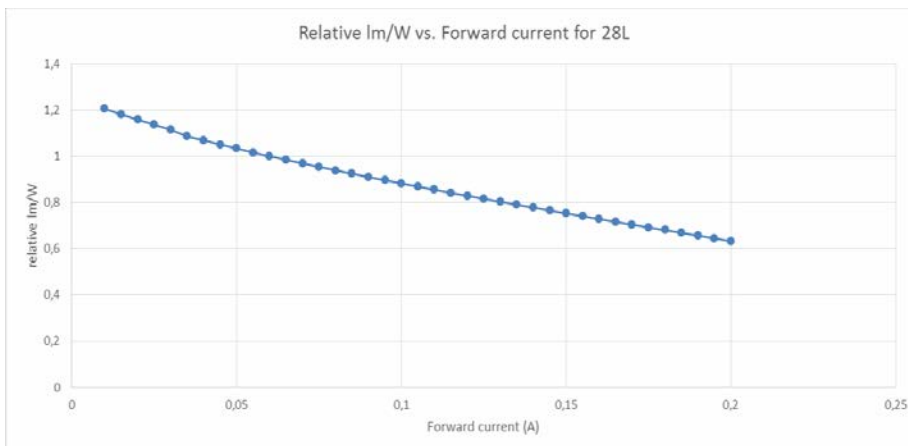




Relative Luminous Flux vs Thermal pad temperature



Relative Lumen/W vs Forward current (thermal pad temperature 25°C)

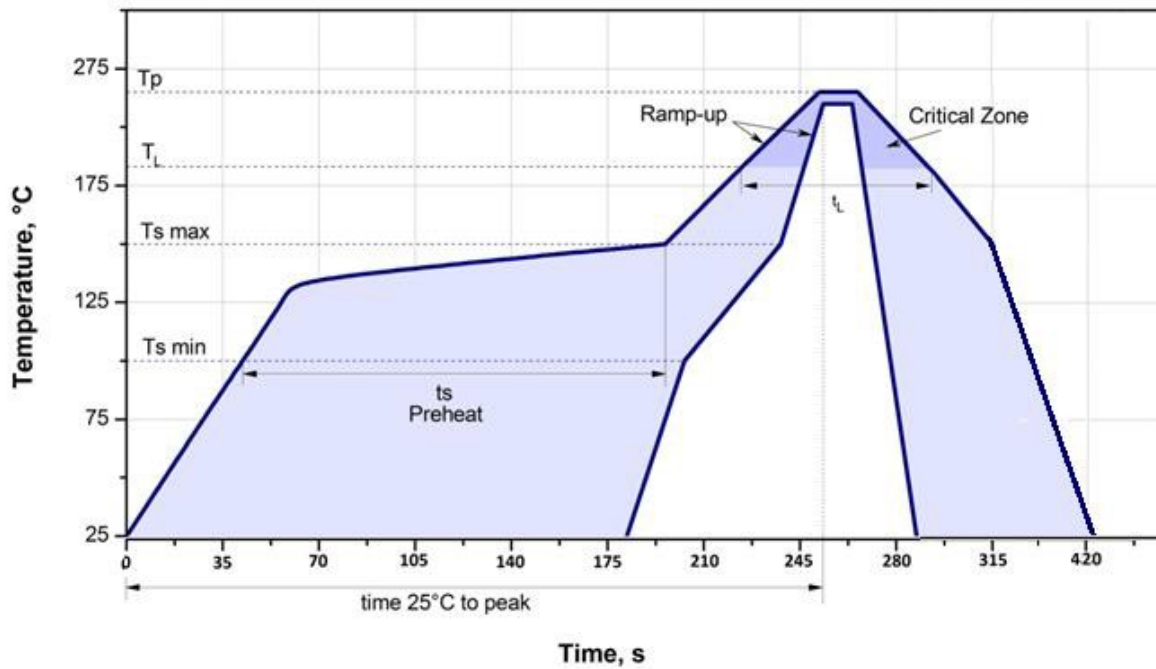


Notes:

1. Octa Light PLC maintains a tolerance of $\pm 0.5\%$ on forward voltage and $\pm 5\%$ on luminous flux measurements.
2. Proper current derating must be observed to maintain junction temperature below the maximum at all time.
3. Light Emitting Diodes are not designed to be driven in reverse bias.
4. Allowable reflow cycles are 3 times for each LED.



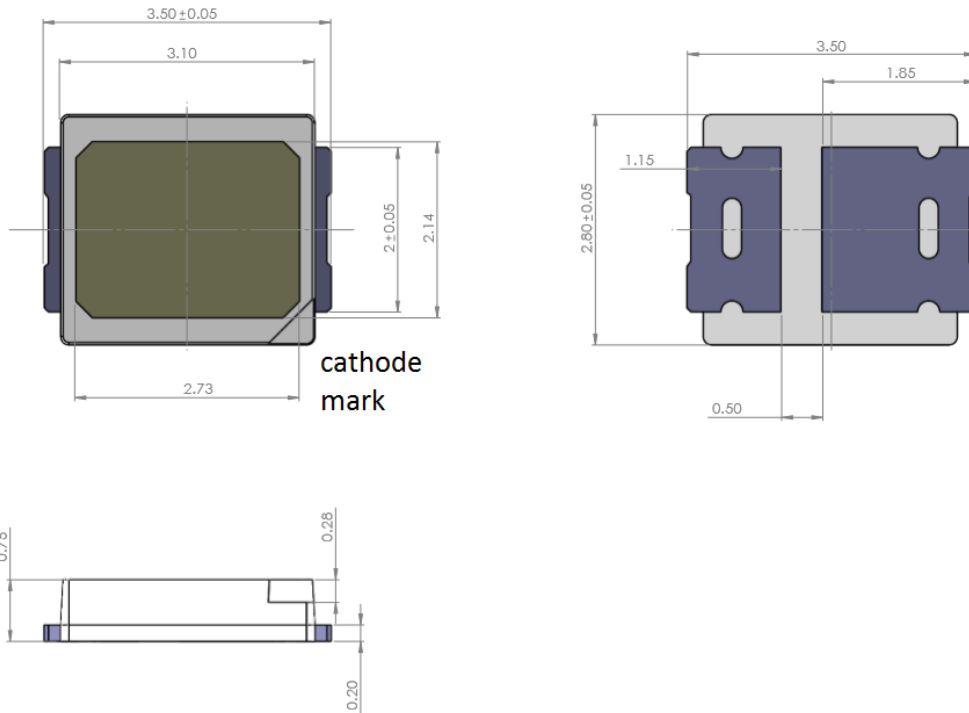
Reflow soldering characteristics



Profile Feature	Assembly
Average Ramp-up rate (T _{smax} to T _p)	3°C/second max.
Preheat:	
Temperature Min (T _{smin})	100°C
Temperature Max (T _{smax})	150°C
Time (T _{smin} to T _{smax})	60-120 seconds
Liquidous Temperature T _l	220°C
Maximum maintained time T _{imetl}	60-120 seconds
Absolute Maximum Peak package body Temperature (T _p)	260°C
Recommended Peak Package temperature	240°C
Time within 5°C of recommended Peak Package temperature (t _p)	10-30 seconds
Ramp-down rate	6°C/second max
Time 25°C to peak temperature	7 minutes max.



LED Package Dimensions and Polarity



Notes:

- All dimensions are in mm
- Drawings are not to scale

Labeling information

LED PART NUMBER

ROHS DIRECTIVE COMPLIANCE

LEAD FREE MARK

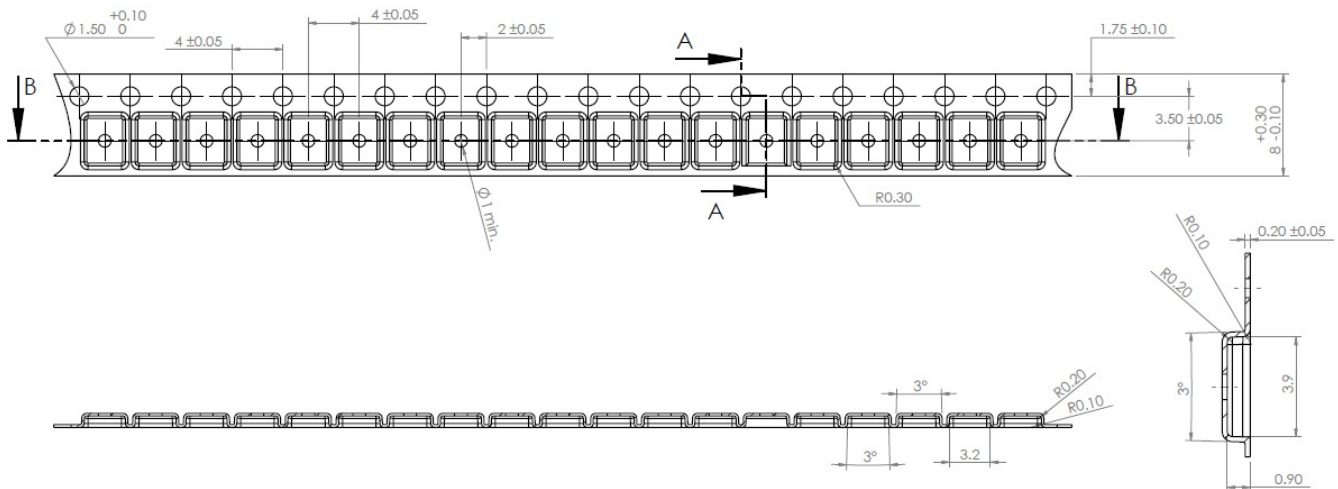


INTERNAL COMPANY INFORMATION

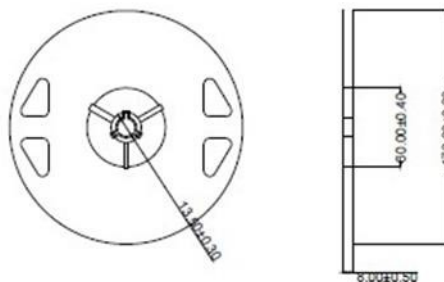
QUANTITY



TAPE AND REEL Specification



Reel Dimensions



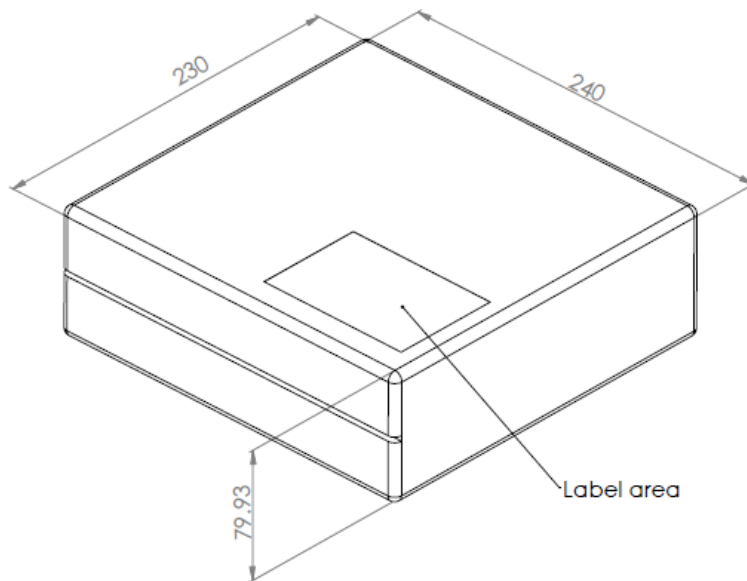
**Quantity per 8 inch reel - 4060 pockets, 30 empty at beginning, 30 empty at exit.
One 8 inch reel to accomodate 4000 units**

Packaging notes:

- All dimensions are in mm
- Empty pockets sealed with top cover tape
- 8 mm. reel, 4000 pieces standard packaging, 500 minimum packaging
- Maximal number of consecutive missing LEDs is three



Packaging Specification



Packaging notes:

- All dimensions are in mm
- LEDs are delivered in Carton Boxes, each containing up to 5 ESD protective Bags including a vacuum sealed 7 inch Reel
- Label information contains the information regarding the LEDs inside each box, as well as reel number inside.

Chemical Compatibility

Using of some material in systems with LEDs can cause the accelerated degradation of output flux. It is not recommended to use in construction of lighting system materials which consist volatile organic compounds (VOCs) such as: sulfur, chlorine, other halides, aromatic hydrocarbons, methyl/ethyl acetate, cyanoacrylates, formaldehyde or butadiene, glycol ethers.

Company Information

Octa Light Bulgaria was established in 2010 as a research and manufacturing center for Light Emitting Diodes (LED) and is entirely based in the EU. Octa Light Bulgaria own LED portfolio includes powerful high-brightness light emitting diodes, last generation of low-power & mid-power LEDs, wide range of COBs and innovative AC LED modules. The company manufactures LEDs in all three base colors - red, green, blue and white, as well as exotic colors as pink, cyan, yellow, purple and other on basis of client requirements. We constantly upgrade our LEDs range to bring highest performance and quality of light sources for today's wide range of lighting applications.

The company is also OEM and ODM supplier of LED packages.

Today Octa Light Bulgaria is fully vertically integrated manufacturer of LED packages, LED modules, LED lamps and LED luminaires.

Octa Light Bulgaria offers also complete lighting solutions accomplishing a variety of lighting projects with own range of LED luminaires. Further to its core lighting business the company offers Contract Electronics Manufacturing (CEM) for key industries.

www.octa-light.com
info@octa-light.com

©2016 Octa Light Bulgaria Plc

All rights reserved. Product specifications are subject to change without notice. Octa Light Bulgaria and its Company signs are registered trademarks in the European Union and other countries.