



Intertek

**BA2**

Bullstar AC series

**230 V 50 Hz
3 W AC LEDs****RECOMMENDED
RESISTORS VALUES**

INTRODUCTION

Octa Light high power AC LEDs represent an optimized solution for applications requiring no external power supply but direct AC input grid voltage. The BA1 series 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 BA2 AC series are intended for 230 V AC 50/60 Hz direct operation without the need of any external converting power supply. The sunk current can be regulated with an external resistor in order to reach a specific consumption and lighting output.

In addition to delivering specified Correlated Color Temperature and Color Rendering combinations, the BA1 series emitters deliver excellent efficacy, lifetime and reliability. This document contains the performance data needed to design LED based applications.

Octa Light BA2 Series Features

- No power supply – Direct AC LEDs
- Intended for 190V -230V 50 Hz AC operation
- Max continuous average forward current up to 25 mA, max consumed power 5.5 W
- Specified CCT & CRI combinations
- ANSI compliant Quarter binning
- LM80 Qualified
- Reflow process compatibility
- Optimized optical performance for higher light output compared to market competitors





General Coding instructions for Octa Light
BA2 LED series
Product Binning and Labelling

OCTL – BA2 – WW J – F 8A U – B 70
 X1 X2 X3 X6 X4 X5 X7 X8 X9

X1 Comp. 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	BA2	CW - Cool White	F - 110 deg Focused	1 (A, B, C, D, E, F, O) ²	Z - 230	U - 15	A -	60 - >60	
				2 (A, B, C, D, E, F, O)	C1 - 300				95-108
				3 (A, B, C, D, E, F, O)	D1 - 400				70 - >70
				4 (A, B, C, D, E, F, O)					
		5 (A, B, C, D, E, F, O)		B -	200-240		80 - >80		
		6 (A, B, C, D, E, F, O)							
		7 (A, B, C, D, E, F, O)							
		8 (A, B, C, D, E, F, O)							
		NW - Neutral White					90 - >90		
		WW - Warm White					95 - >95		

Notes:

1. Information about chromaticity coordinates bin can be found in Binning information file.
2. Chromaticity coordinates bin named X0 includes all of the ANSI sub-bins type XA, XB, XC, XD, XE, XF. This applies for all bins.
3. All BA1 and BA2 Series LEDs are tested at AC current equal to the specified in column X8
4. Octa Light maintains a +-5% measurement error on forward voltage and overall luminous output characteristics
5. All binning are at 25C Junction temperature



SAMPLE RESISTOR VALUES

Table 1

Characteristics at ambient Temperature 25°C, Junction temperature 85°C
Variable Characteristics of Consumption based on Input voltage and resistor values

External resistor Values R [OHM]	AC Voltage Value (Volts RMS 50 HZ)	AC Current through LED [mA]	Overall Power Factor of schematic	Consumed power of Schematic [W]
510 Ω	180 VAC	4,5 mA	0,749	0,64 W
510 Ω	190 VAC	78 mA	0,783	1,14 W
510 Ω	200 VAC	11,5 mA	0,809	1,86 W
510 Ω	210 VAC	16 mA	0,820	2,78 W
510 Ω	220 VAC	21,2 mA	0,851	3,97 W
510 Ω	230 VAC	27 mA	0,867	5,41 W
510 Ω	250 VAC	41,1 mA	0,894	9,22 W
560 Ω				
560 Ω	180 VAC	4,7 mA	0,750	0,64 W
560 Ω	190 VAC	7,6 mA	0,783	1,13 W
560 Ω	200 VAC	11,3 mA	0,810	1,82 W
560 Ω	210 VAC	15,7 mA	0,832	2,74 W
560 Ω	220 VAC	20,7 mA	0,851	3,87 W
560 Ω	230 VAC	27 mA	0,868	5,37 W
560 Ω	250 VAC	39,8 mA	0,894	8,9 W
627 Ω				
627 Ω	180 VAC	4,6 mA	0,75	0,611 W
627 Ω	190 VAC	7,4 mA	0,784	1,1 W
627 Ω	200 VAC	10,8 mA	0,811	1,67 W
627 Ω	210 VAC	15 mA	0,833	2,61 W
627 Ω	220 VAC	19,6 mA	0,851	3,68 W
627 Ω	230 VAC	25 mA	0,867	4,99 W
627 Ω	250 VAC	37,5 mA	0,893	8,38 W
1640 Ω				
1640 Ω	180 VAC	3,6 mA	0,757	0,48 W
1640 Ω	190 VAC	5,4 mA	0,792	0,81 W
1640 Ω	200 VAC	7,7 mA	0,819	1,25 W
1640 Ω	210 VAC	10,1 mA	0,840	1,78 W
1640 Ω	220 VAC	12,9 mA	0,857	2,42 W
1640 Ω	230 VAC	15,6 mA	0,872	3,13 W
1640 Ω	250 VAC	22,1 mA	0,896	4,94 W
1800 Ω				
1800 Ω	180 VAC	3,4 mA	0,758	0,45 W
1800 Ω	190 VAC	5,1 mA	0,792	0,76 W
1800 Ω	200 VAC	7,1 mA	0,819	1,17 W
1800 Ω	210	9,5 mA	0,84	1,66 W
1800 Ω	220	12 mA	0,857	2,26 W
1800 Ω	230	14,7 mA	0,872	2,96 W
1800 Ω	250	20,6 mA	0,896	4,6 W

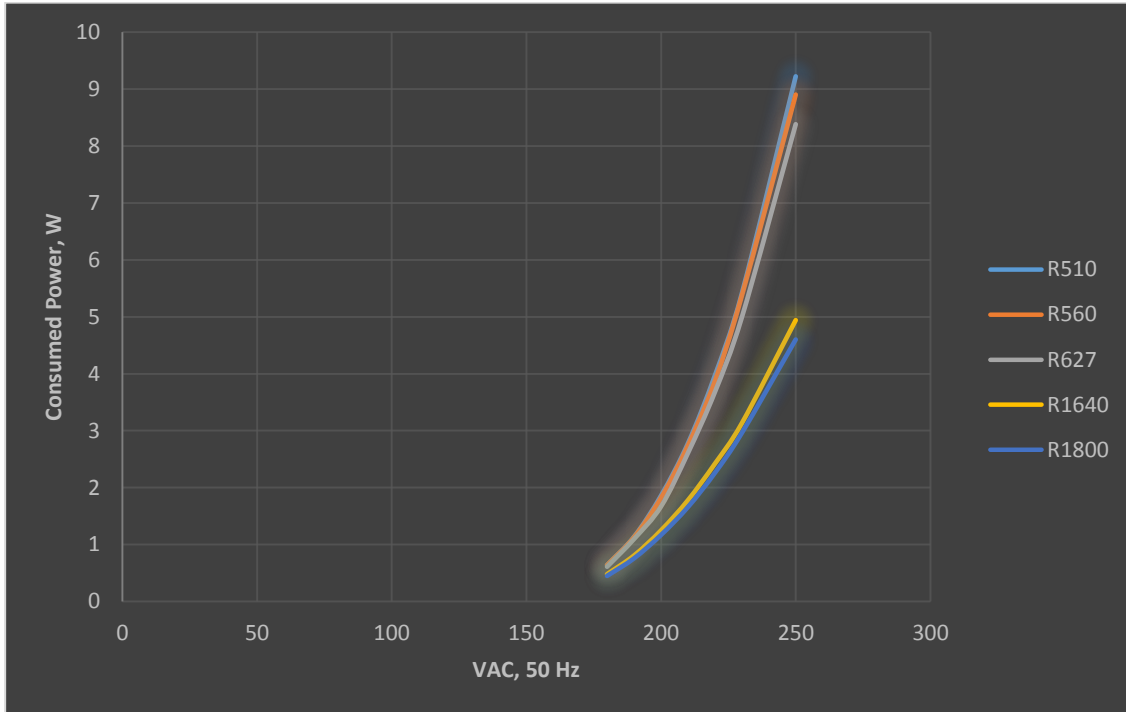


Notes:

1. External resistors with appropriate wattage power should be used
2. All measurement data is with +- 5% accuracy
3. All measurement realized with 50 Hz, galvanically insulated Pure Sine Wave generator

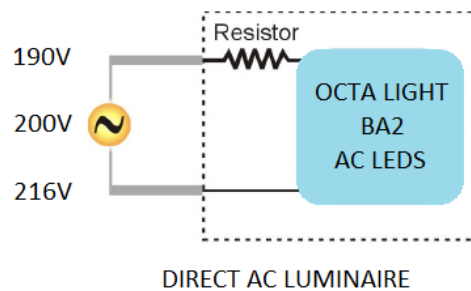
Chart 1

*Characteristics at ambient Temperature 25°C, Junction temperature 85°C
Variable Characteristics of Consumption based on Input voltage and resistor values*



Schematic of Connection

Schematic of connection for all measurements



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 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 Electronic Manufacturing Services (EMS).