

Xicato Spot Module



The Xicato Spot Module: Light quality without compromise.



Pizza Hut by Projection Lighting

The Xicato Spot Module (XSM) is the first genuine LED equivalent for halogen with no compromises: not aesthetic or light technical.

Aesthetic

- Compact: similar size to MR 16 lamps
- Allows enhanced creativity in luminaire design

Light technical

- Similar intensities possible compared with 20-50W low voltage halogen lamp range
- Choice of Color temperatures (2700, 3000 and 4000K)
- Color Rendering Index of 80+ or 95+ (Artist Series)
- Consistent color (Color point consistency <2 SDCM part to part)
- Uniform beam(intensity and Color Temperature - no yellow ring or multiple shadows)

Advantages:

- Cost of ownership (life and efficacy advantages):
 - 8-23W XSM wattage compares with 20-50W low wattage halogen lamp wattage
 - 50khrs life compares with 2-4khrs low voltage halogen lamp life
- Extremely low heat (IR) and UV in beam
- No mercury or lead
- IP66 (ideal for outdoor usage)



PLDA

Xicato supports the
Professional Lighting
Designers' Association
as a sponsor.
www.pld-a.org

IALDLIRC

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Applications

Luminaire possibilities for retail, domestic, heritage, hospitality, commercial and outdoor applications:

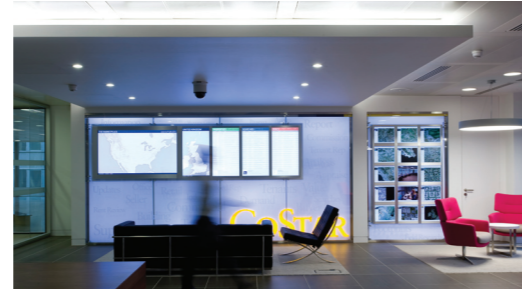
- Recessed, surface and track-mounted spots
- Recessed or surface mounted downlighters (including emergency versions)
- Table or desk lamps
- Pendants
- Display / cabinet lighting
- Wallwashers
- Buried uplighters
- Period lanterns



Home lighting by Aquaform



Museum lighting by High Technology Lighting



Office Lighting by Wila



Gallery lighting by Lighting Services Inc



Retail lighting by Lunoo



Landscape lighting by BK Lighting

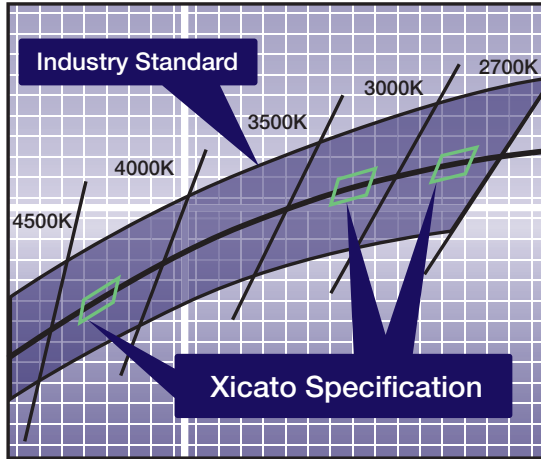
Technical data

Part Number	Correlated Color Temperature	Color Rendering Index Ra ⁴	Color Consistency ^{5,6}			Drive Current ¹⁰ mA	Forward Voltage			Power Consumption ⁷ (Typical Range) W	Lumen Output ⁸ (Typical) lm	Efficacy (Typical) lm/W	Life ⁹ hrs
			SDCM	CCT	Duv		Min	Typ	Max				
400 lm													
XSM8030-400	3000K	≥80	<2	± 50K	± 0.001	700	12.2	13.8	15	9 - 10	400	45	50k
						500	11.8	13.4	14.3	6 - 7	280	50	
						350	11.5	13.1	13.9	4 - 5	220	55	
700 lm													
XSM8027-700	2700K	≥80	<2	± 40K	± 0.001	700	21.3	24.3	26.3	15 - 16	700	43	50k
						500	20.6	23.5	25.1	11 - 12	550	48	
						350	20.1	22.9	24.2	7 - 8	400	52	
XSM8030-700	3000K	≥80	<2	± 50K	± 0.001	700	21.3	24.3	26.3	15 - 16	700	45	50k
						500	20.6	23.5	25.1	11 - 12	550	50	
						350	20.1	22.9	24.2	7 - 8	400	55	
XSM8040-700	4000K	≥80	<2	± 70K	± 0.001	700	21.3	24.3	26.3	15 - 16	700	45	50k
						500	20.6	23.5	25.1	11 - 12	550	50	
						350	20.1	22.9	24.2	7 - 8	400	55	
1000 lm													
XSM8027-1000	2700K	≥80	<2	± 40K	± 0.001	700	30.4	34.7	36	22 - 23	1000	43	50k
						500	29.5	33.5	35.8	15 - 16	800	48	
						350	28.8	32.7	34.6	10 - 11	580	52	
XSM8030-1000	3000K	≥80	<2	± 50K	± 0.001	700	30.4	34.7	36	22 - 23	1000	45	50k
						500	29.5	33.5	35.8	15 - 16	800	50	
						350	28.8	32.7	34.6	10 - 11	580	55	
XSM8040-1000	4000K	≥80	<2	± 70K	± 0.001	700	30.4	34.7	36	22 - 23	1000	45	50k
						500	29.5	33.5	35.8	15 - 16	800	50	
						350	28.8	32.7	34.6	10 - 11	580	55	
Artist													
XSM9027-700	2700K	Ra ≥ 95	<2	± 40K	± 0.001	700	30.4	34.7	36	22 - 23	700	33	50k
		R9 ≥ 90				500	29.5	33.5	35.8	15 - 16	550	37	
		Ave(R10-R14) ≥ 95				350	28.8	32.7	34.6	10 - 11	400	40	
		R15 ≥ 98											
XSM9030-700	3000K	Ra ≥ 95	<2	± 50K	± 0.001	700	30.4	34.7	36	22 - 23	700	33	50k
		R9 ≥ 90				500	29.5	33.5	35.8	15 - 16	550	37	
		Ave(R10-R14) ≥ 95				350	28.8	32.7	34.6	10 - 11	400	40	
		R15 ≥ 95											
XSM9040-700	4000K	Ra ≥ 95	<2	± 70K	± 0.001	700	30.4	34.7	36	22 - 23	700	33	50k
		R9 ≥ 85				500	29.5	33.5	35.8	15 - 16	550	37	
		Ave(R10-R14) ≥ 92				350	28.8	32.7	34.6	10 - 11	400	40	
		R15 ≥ 95											

Notes:

1. Light technical data independently verified by the University College London and IESNA LM-79 qualified test labs.
2. All technical data shown in the above table is taken at a recommended operating test point (Tc) temperature of 70°C.
3. Higher lumen output achievable with lower test point (Tc) temperature.
4. "Ra" is defined as the average of color indices R1-R8.
5. 100% of products produced by Xicato lie within color consistency specification shown in the table above. Although such a tight control throughout life is expected, reliability tests are underway to quantify this.
6. Minor shifts in CCT and Duv occur with changes to drive current and/or temperature. Additional data available upon request.
7. Power consumption is stated as a small typical range (not maximum range) that is centered around the typical value. A range is specified rather than an typical value due to variations in LED die quantity, forward voltage, and performance. Maximum and minimum values can be calculated using the voltage range.
8. Absolute range of lumen output is ±10% of typical value.
9. XSM life is 50K hours based on standard L70/B50 criteria. Extrapolation of 3,000 hour WHTOL test results predicts a 85% lumen maintenance at 50K hours in a typical application environment. Tests are continuing and results will be updated regularly on our website.
10. The module is designed for usage with a class 1 or class 2 constant current power supply with a output current up to 700mA. Current may vary ±10% without affecting lifetime performance (absolute maximum 770mA).

**Xicato color point consistency:
an industry best**



Corrected Cold Phosphor Technology puts an end to the color variation issues which have until now been a barrier for the market’s acceptance of LEDs. Whilst industry standard LED binning structures allow for color points in a 7 step MacAdam Ellipse, Xicato XSM modules perform to less than a 2 step MacAdam Ellipse that is centred on the black Body Locus at each Correlated Color Temperature for a perfectly natural appearance.



Xicato is a young Solid State Lighting company founded by seasoned industry professionals, with offices located in Silicon Valley, California (HQ), London and Tokyo. Xicato develops, manufactures and globally markets LED modules that simply are functional replacements for traditional lamp technologies, offering all the life and energy-saving advantages of LEDs with no light-technical or aesthetic compromises. Xicato provides industry best (plus) specifications via an open approach with a global circle of leading end-users, specifiers and luminaire manufacturers. Xicato is committed to address the whole broad sphere of the general illumination world, taking on segment by segment with our annual new product launches. By ‘Making sense with LEDs’™ Xicato will bring confidence in LEDs to the lighting market and contribute to their widespread adoption.

For questions, further details or recommendations on manufacturers with XSM luminaire ranges see www.xicato.com or contact:

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**Xicato Artist Series color rendering:
an industry best**

	Ra	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
Standard XSM	81	80	85	89	81	78	80	86	66	16	64	79	58	81	93	75
Artist Series XSM	98	98	99	98	98	98	97	98	98	96	99	98	88	98	98	98
Typical IR coated Halogen Dichroic	98	98	99	99	99	98	98	99	97	92	97	98	97	98	99	97
Typical Compact Metal Halide	82	90	94	69	82	81	81	87	71	27	59	62	55	93	78	88
Typical Compact Fluorescent	87	91	93	86	91	89	90	88	70	17	76	91	81	93	92	81

Independent measurements by University College London

With the Artist Series, via attention to both LED and phosphor specification, a CRI of Ra over 95 is obtained, compared to one of 80 + with the standard range. Typically the Color Rendering Index is only evaluated for the first 8 pastel colored reference samples of the CRI system. The Artist Series has also been optimized to get excellent results for the more saturated and skin color samples of the CRI reference set. For the deep red R9 reference sample, a value of R9 over 90 has been achieved for the 2700K and 3000K Artist Series, and the same R9 is over 85 for the 4000K Artist Series. These numbers not only outperform other LED solutions but also traditional lamp types like compact fluorescent and compact metal halide.