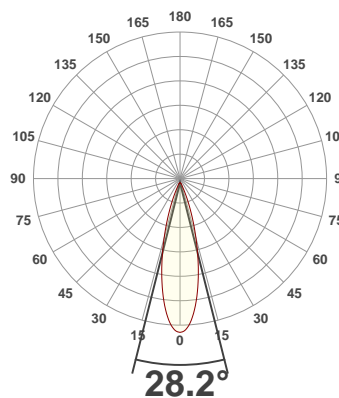
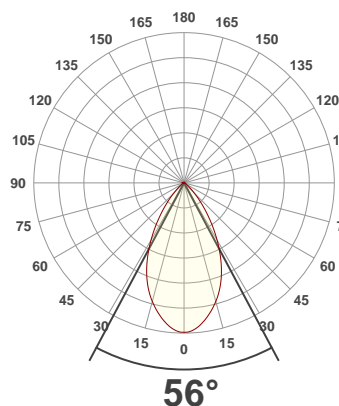




**PRODUCT INFORMATION**

SERIAL NUMBER:	LL-20190829-579-BMS
DATE OF MEASUREMENT:	2019-08-29
SIZE (mm): (dia. x h)	200 x 78

**ANGULAR DISTRIBUTION AT C0/180 | ANGULAR DISTRIBUTION AT C90/270 | LIGHT OUTPUT DATA**

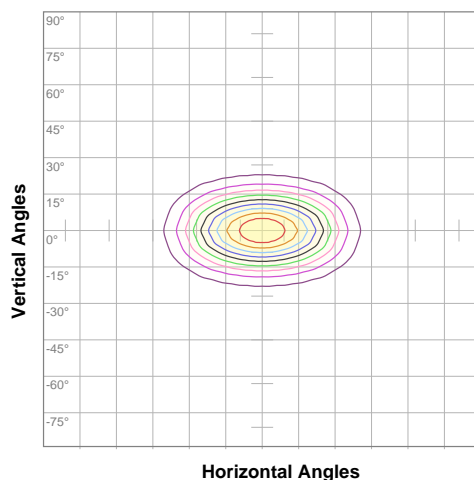


TOTAL LUMEN OUTPUT:	1970 lm
EFFICACY:	82 lm/W
PEAK INTENSITY:	3778 cd
COLOR RENDERING INDEX (CRI):	82.3
COLOR TEMPERATURE (CCT):	3921K
FIDELITY INDEX (TM30Rf):	83.7
GAMUT INDEX (TM30Rg):	97.3

**BEAM OUTPUT DATA**

BEAM ANGLE (FWHM)   C0/180:	56°
BEAM ANGLE (FWHM)   C90/270:	28.2°
FIELD ANGLE (10%)   C0/180:	90°
FIELD ANGLE (10%)   C90/270:	51°
NUMBER OF PLANES MEASURED:	12

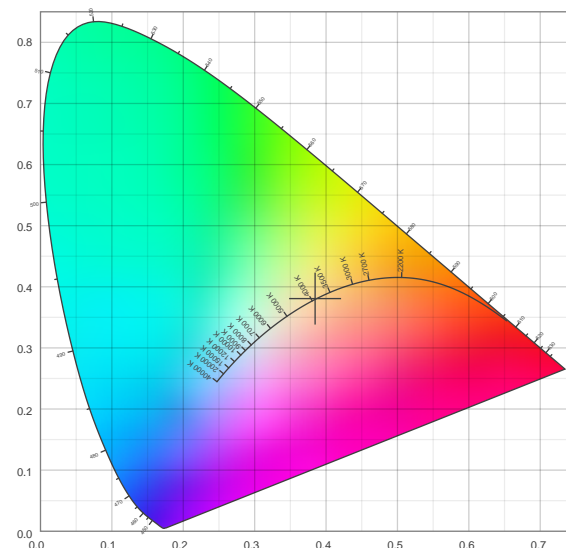
**ISO CANDELA DIAGRAM | DATA**



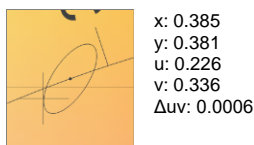
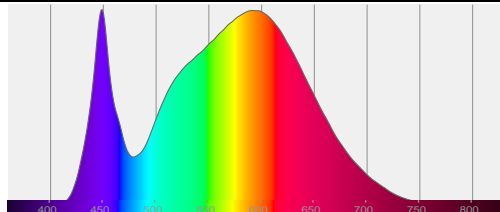
10%	378 cd
20%	755 cd
30%	1133 cd
40%	1510 cd
50%	1888 cd
60%	2265 cd
70%	2643 cd
80%	3021 cd
90%	3398 cd

INPUT POWER:	24.1 W
POWER FACTOR:	1.0
OPTICAL POWER:	6.06 mW
PEAK WAVELENGTH:	449 nm
DOMINANT WAVELENGTH:	581 nm

**CIE 1931:**



**SPECTRA | CIE 1931 ZOOM**



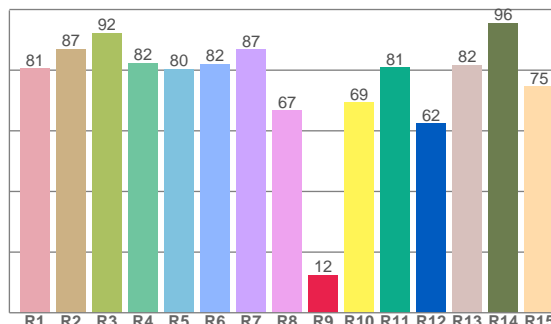
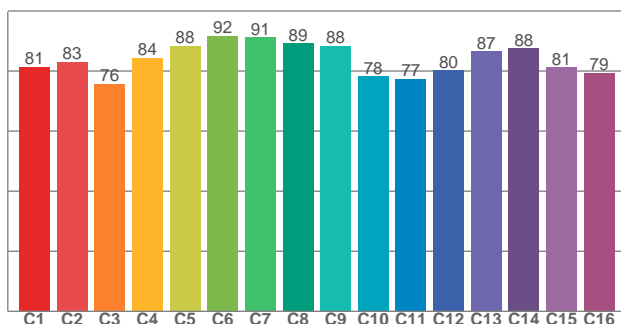
ZONAL LUMEN SUMMARY

0°-10° 323 lm	10°-20° 647 lm	20°-30° 517 lm	30°-40° 271 lm	40°-50° 114 lm	50°-60° 52.0 lm	60°-70° 29.9 lm	70°-80° 14.0 lm	80°-90° 1.73 lm
90°-100° 0.100 lm	100°-110° 0.097 lm	110°-120° 0.047 lm	120°-130° 0.032 lm	130°-140° 0.020 lm	140°-150° 0.012 lm	150°-160° 0.009 lm	160°-170° 0.005 lm	170°-180° 0.002 lm

COLOR DETAILS

TM30: 83.7

CRI: 82.3 (R1-R8)



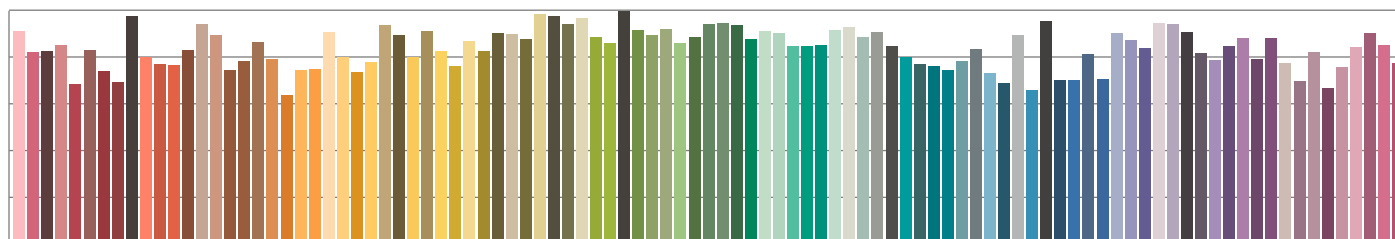
TM30 C values, 16 binned values out of total of 99 C values

CRI R values, only R1-R8 are used to calculate final CRI value

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
81.4	83.1	75.7	84.4	88.4	91.7	91.2	89.3	88.4	78.3	77.4	80.1	86.5	87.5	81.3	79.4

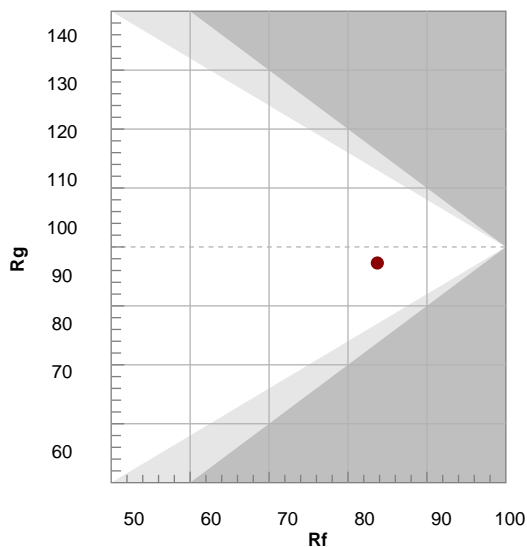
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
80.5	87.0	92.2	82.3	80.4	82.1	86.8	66.8	12.4	69.3	80.8	62.4	81.8	95.5	74.6

TM30 COLOR EVALUATION SAMPLE



TM30 DETAILS

Hue Bin	R <sub>f</sub>	Graphic shifts (%)	
		Chroma	Hue
1	81	-11%	-2%
2	83	-8%	6%
3	76	-4%	13%
4	84	2%	10%
5	88	5%	6%
6	92	5%	-2%
7	91	-1%	-5%
8	89	-5%	-4%
9	88	-8%	2%
10	78	-8%	10%
11	77	0%	15%
12	80	5%	10%
13	87	8%	-3%
14	88	10%	-5%
15	81	1%	-13%
16	79	-4%	-13%



FIDELITY INDEX

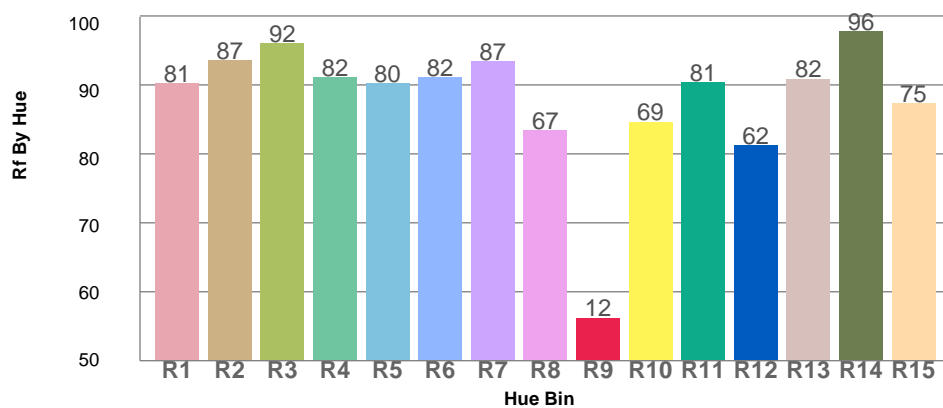
**R<sub>f</sub> 83.7**

GAMUT INDEX

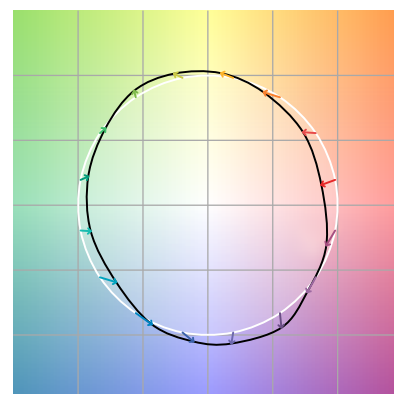
**R<sub>g</sub> 97.3**

Approx. limits for sources on the Planckian locus.  
 Approx. limits for practical light sources.

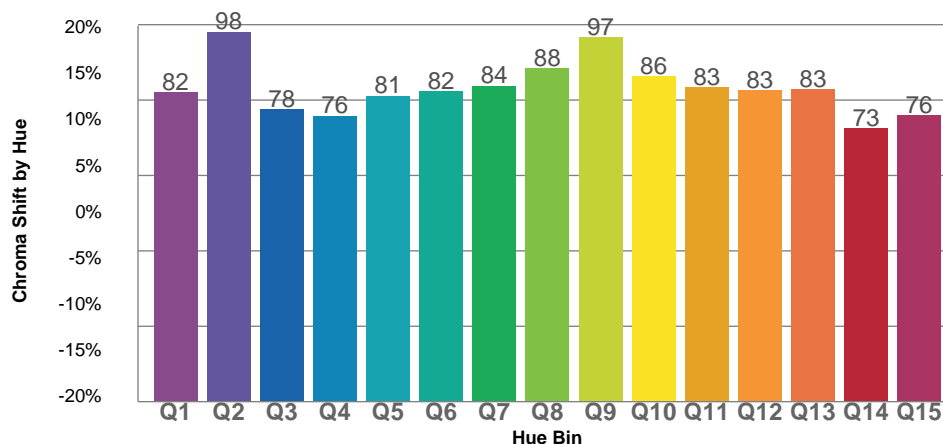
TM30 OVER 50



COLOR VECTOR GRAPHICS



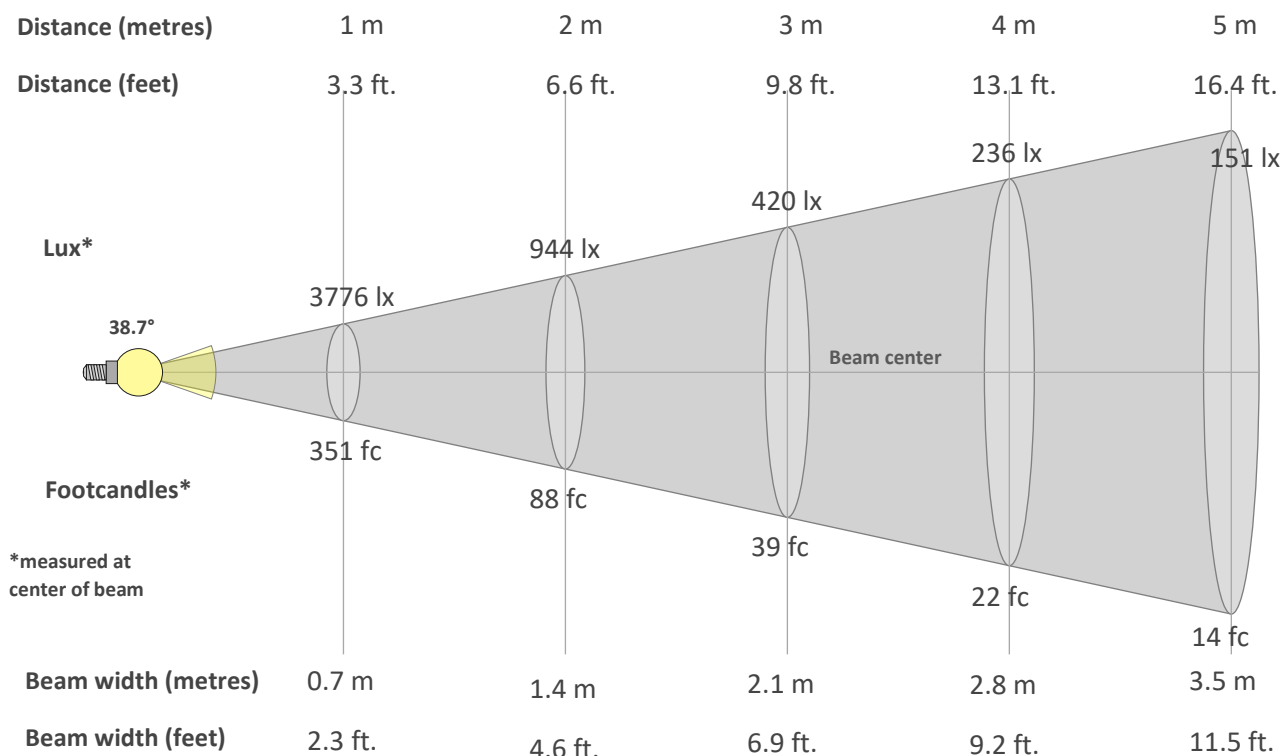
TM30 CHROMA SHIFT



COLOR DISTORTION GRAPHICS



**BEAM DETAILS**



**Beam intensity from 1-20m**

1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
3.3ft	6.6ft	9.8ft	13.1ft	16.4ft	19.7ft	23ft	26.2ft	29.5ft	32.8ft	36.1ft	39.4ft	42.7ft	45.9ft	49.2ft	52.5ft	55.8ft	59.1ft	62.3ft	65.6ft
3776lx	944lx	420lx	236lx	151lx	105lx	77lx	59lx	47lx	38lx	31lx	26lx	22lx	19lx	17lx	15lx	13lx	12lx	10lx	9lx
350.8fc	87.7fc	39fc	21.9fc	14fc	9.7fc	7.2fc	5.5fc	4.3fc	3.5fc	2.9fc	2.4fc	2.1fc	1.8fc	1.6fc	1.4fc	1.2fc	1.1fc	1fc	0.9fc

**Intensity in 0° c-plane**

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
3776	3758	3709	3634	3534	3422	3299	3167	3026	2870	2700	2514	2315	2104	1888	1668	1452	1241	1041	860
100%	100%	98%	96%	94%	91%	87%	84%	80%	76%	72%	67%	61%	56%	50%	44%	38%	33%	28%	23%

**Intensity in 90° c-plane**

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
3776	3720	3567	3318	3010	2654	2280	1901	1538	1203	915	671	486	344	246	180	138	111	92	81
100%	99%	94%	88%	80%	70%	60%	50%	41%	32%	24%	18%	13%	9%	7%	5%	4%	3%	2%	2%

**Intensity in 180° c-plane**

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
3776	3758	3709	3634	3534	3422	3299	3167	3026	2870	2700	2514	2315	2104	1888	1668	1452	1241	1041	860
100%	100%	98%	96%	94%	91%	87%	84%	80%	76%	72%	67%	61%	56%	50%	44%	38%	33%	28%	23%

**Intensity in 270° c-plane**

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
3776	3720	3567	3318	3010	2654	2280	1901	1538	1203	915	671	486	344	246	180	138	111	92	81
100%	99%	94%	88%	80%	70%	60%	50%	41%	32%	24%	18%	13%	9%	7%	5%	4%	3%	2%	2%