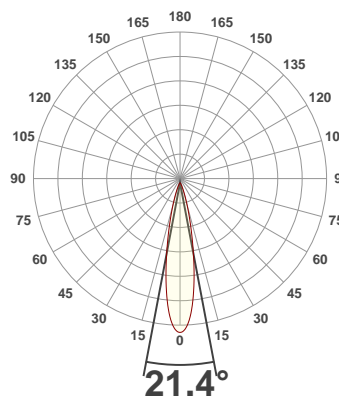
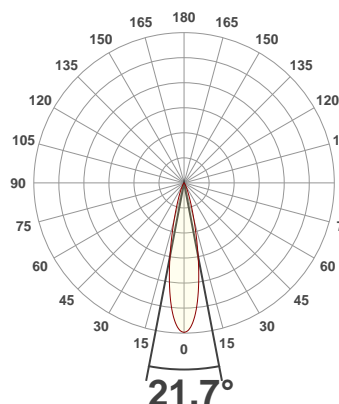




**PRODUCT INFORMATION**

SERIAL NUMBER:	LL-20190830-581-BMS
DATE OF MEASUREMENT:	2019-08-30
SIZE (mm): (dia. x h)	200 x 78

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

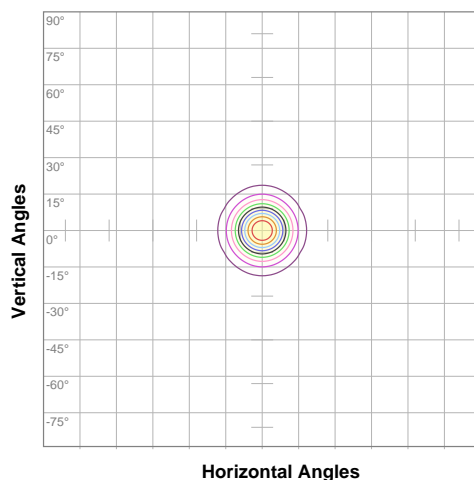


TOTAL LUMEN OUTPUT:	1964 lm
EFFICACY:	81 lm/W
PEAK INTENSITY:	10776 cd
COLOR RENDERING INDEX (CRI):	82.0
COLOR TEMPERATURE (CCT):	3911K
FIDELITY INDEX (TM30Rf):	83.5
GAMUT INDEX (TM30Rg):	97.4

**BEAM OUTPUT DATA**

BEAM ANGLE (FWHM)   C0/180:	21.7°
BEAM ANGLE (FWHM)   C90/270:	21.4°
FIELD ANGLE (10%)   C0/180:	40.6°
FIELD ANGLE (10%)   C90/270:	41.5°
NUMBER OF PLANES MEASURED:	12

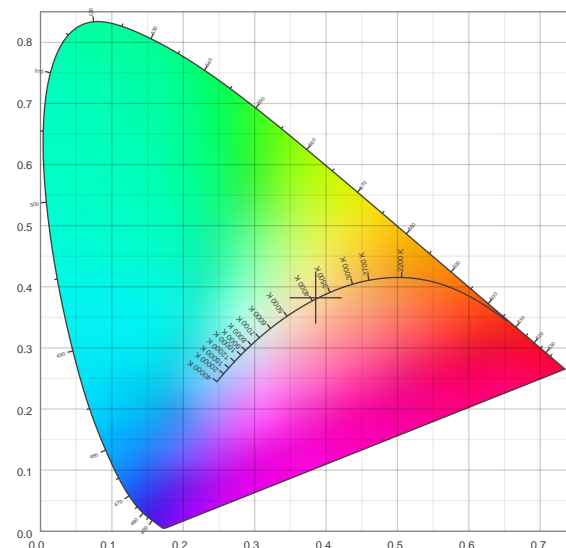
**ISO CANDELA DIAGRAM | DATA**



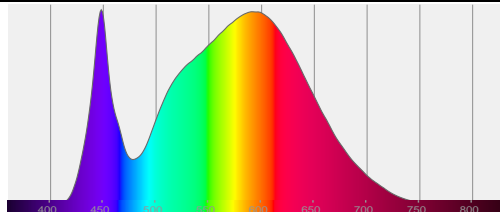
10%	1077 cd
20%	2153 cd
30%	3230 cd
40%	4307 cd
50%	5384 cd
60%	6460 cd
70%	7537 cd
80%	8614 cd
90%	9691 cd

INPUT POWER:	24.1 W
POWER FACTOR:	1.0
OPTICAL POWER:	6.01 mW
PEAK WAVELENGTH:	448 nm
DOMINANT WAVELENGTH:	581 nm

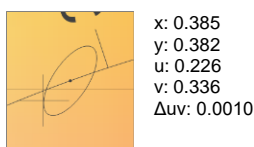
**CIE 1931:**



**SPECTRA**



**CIE 1931 ZOOM**



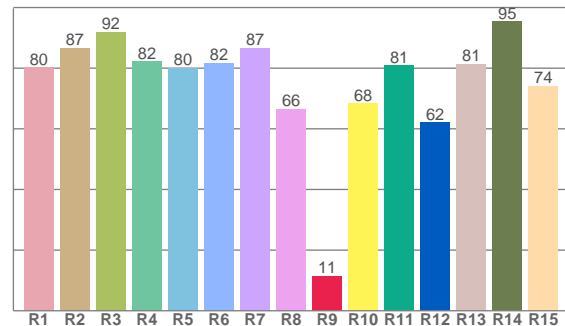
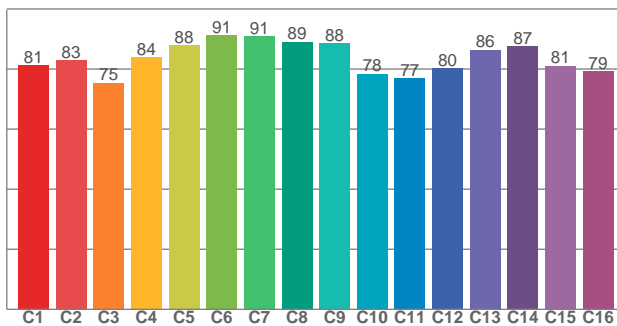
ZONAL LUMEN SUMMARY

0°-10° 782 lm	10°-20° 789 lm	20°-30° 242 lm	30°-40° 74.1 lm	40°-50° 36.4 lm	50°-60° 23.1 lm	60°-70° 13.4 lm	70°-80° 3.88 lm	80°-90° 0.073 lm
90°-100° 0.004 lm	100°-110° 0.002 lm	110°-120° 0.002 lm	120°-130° 0.002 lm	130°-140° 0.001 lm	140°-150° 0.000 lm	150°-160° 0.000 lm	160°-170° 0.000 lm	170°-180° 0.000 lm

COLOR DETAILS

TM30: 83.5

CRI: 82.0 (R1-R8)



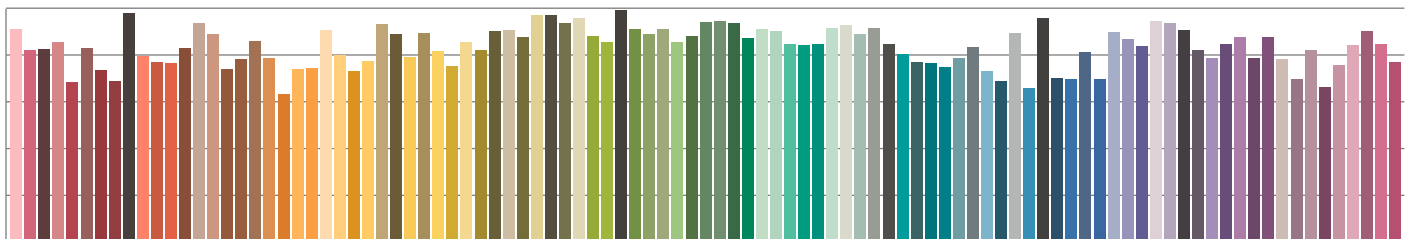
TM30 C values, 16 binned values out of total of 99 C values

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
81.3	83.0	75.4	83.9	88.0	91.3	91.0	89.1	88.5	78.4	76.9	80.2	86.4	87.4	81.1	79.3

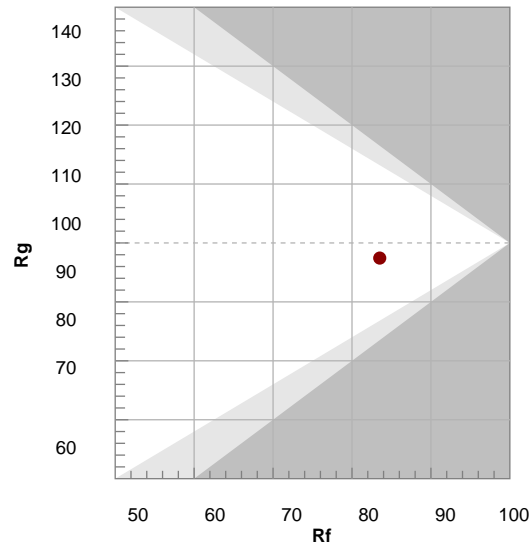
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
80.2	86.6	91.8	82.2	80.1	81.6	86.7	66.5	11.4	68.4	80.9	62.0	81.3	95.3	74.0

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	75	-4%	13%
4	84	2%	10%
5	88	5%	6%
6	91	5%	-2%
7	91	-1%	-6%
8	89	-5%	-4%
9	88	-8%	1%
10	78	-9%	10%
11	77	0%	16%
12	80	6%	9%
13	86	8%	-3%
14	87	10%	-5%
15	81	1%	-13%
16	79	-4%	-13%



FIDELITY INDEX

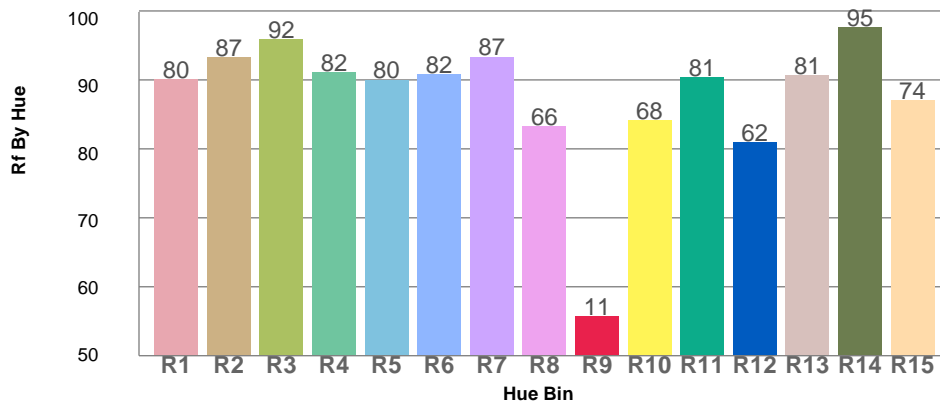
**R<sub>f</sub> 83.5**

GAMUT INDEX

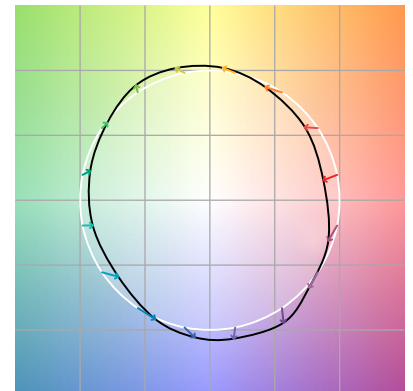
**R<sub>g</sub> 97.4**

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

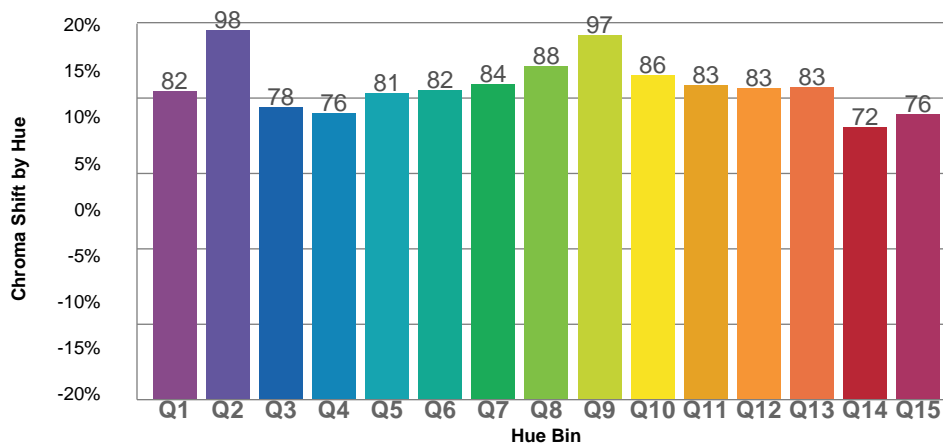
TM30 OVER 50



COLOR VECTOR GRAPHICS



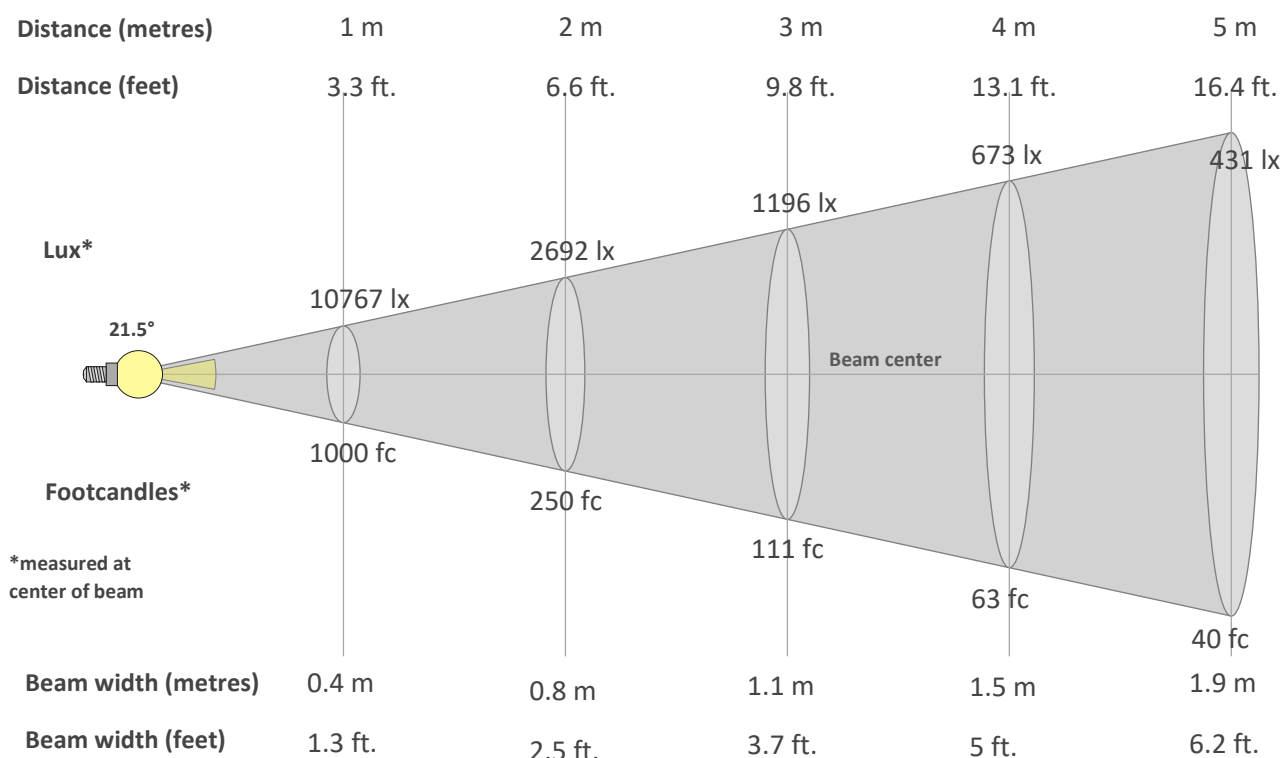
TM30 CHROMA SHIFT



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
10767lx	2692lx	1196lx	673lx	431lx	299lx	220lx	168lx	133lx	108lx	89lx	75lx	64lx	55lx	48lx	42lx	37lx	33lx	30lx	27lx
1000.3fc	250.1fc	111.1fc	62.5fc	40fc	27.8fc	20.4fc	15.6fc	12.3fc	10fc	8.3fc	6.9fc	5.9fc	5.1fc	4.4fc	3.9fc	3.5fc	3.1fc	2.8fc	2.5fc

**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°
10.8K	10.6K	9.9K	8.9K	7.5K	6.0K	4.6K	3.3K	2.3K	1.6K	1.1K	0.8K	0.6K	0.4K	0.3K	0.2K	0.2K	0.1K	0.1K	0.1K
100%	98%	92%	82%	70%	56%	42%	31%	22%	15%	11%	8%	5%	4%	3%	2%	2%	1%	1%	1%

**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°
10.8K	10.5K	9.9K	8.8K	7.4K	5.9K	4.5K	3.3K	2.4K	1.7K	1.2K	0.9K	0.6K	0.4K	0.3K	0.2K	0.2K	0.1K	0.1K	0.1K
100%	98%	92%	81%	69%	55%	42%	31%	22%	16%	11%	8%	6%	4%	3%	2%	2%	1%	1%	1%

**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°
10.8K	10.6K	9.9K	8.9K	7.5K	6.0K	4.6K	3.3K	2.3K	1.6K	1.1K	0.8K	0.6K	0.4K	0.3K	0.2K	0.2K	0.1K	0.1K	0.1K
100%	98%	92%	82%	70%	56%	42%	31%	22%	15%	11%	8%	5%	4%	3%	2%	2%	1%	1%	1%

**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°
10.8K	10.5K	9.9K	8.8K	7.4K	5.9K	4.5K	3.3K	2.4K	1.7K	1.2K	0.9K	0.6K	0.4K	0.3K	0.2K	0.2K	0.1K	0.1K	0.1K
100%	98%	92%	81%	69%	55%	42%	31%	22%	16%	11%	8%	6%	4%	3%	2%	2%	1%	1%	1%