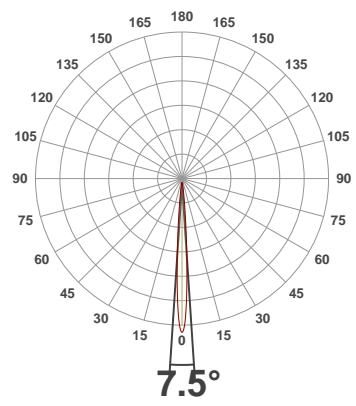
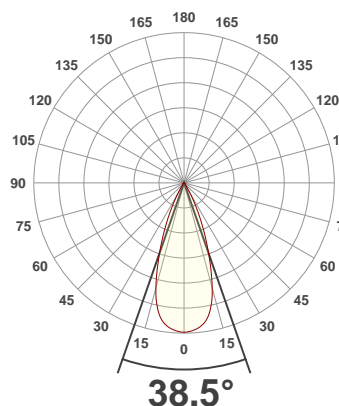




**PRODUCT INFORMATION**

SERIAL NUMBER:	LL-20191008-835
DATE OF MEASUREMENT:	2019-10-08
SIZE (dia. x h):	440 mm x 92 mm

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

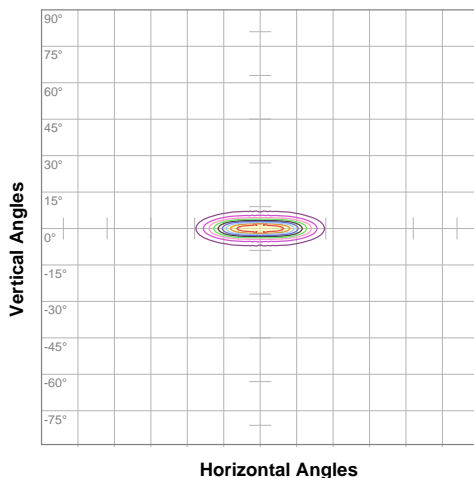


TOTAL LUMEN OUTPUT:	16645 lm
EFFICACY:	84 lm/W
PEAK INTENSITY:	146848 cd
COLOR RENDERING INDEX (CRI):	83.3
COLOR TEMPERATURE (CCT):	3936K
FIDELITY INDEX (TM30Rf):	84.5
GAMUT INDEX (TM30Rg):	96.4

**BEAM OUTPUT DATA**

BEAM ANGLE (FWHM)   C0/180:	38.5°
BEAM ANGLE (FWHM)   C90/270:	7.5°
FIELD ANGLE (10%)   C0/180:	58.8°
FIELD ANGLE (10%)   C90/270:	16°
NUMBER OF PLANES MEASURED:	36

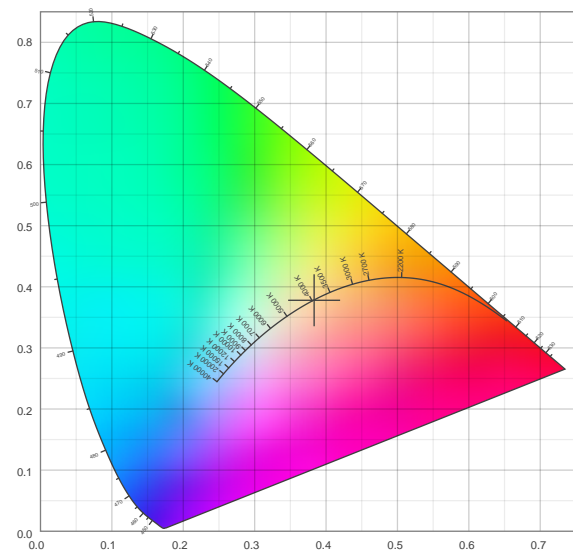
**ISO CANDELA DIAGRAM | DATA**



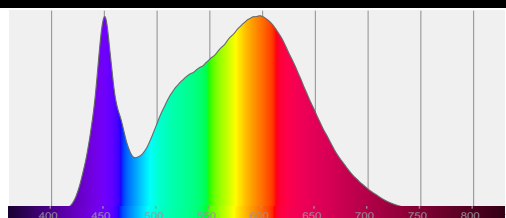
10%	14678 cd
20%	29356 cd
30%	44034 cd
40%	58711 cd
50%	73389 cd
60%	88067 cd
70%	102745 cd
80%	117423 cd
90%	132101 cd

INPUT POWER:	197.4 W
POWER FACTOR:	1.0
OPTICAL POWER:	50.4 mW
PEAK WAVELENGTH:	450 nm
DOMINANT WAVELENGTH:	582 nm

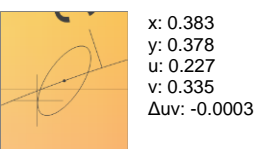
**CIE 1931:**



**SPECTRA**



**CIE 1931 ZOOM**



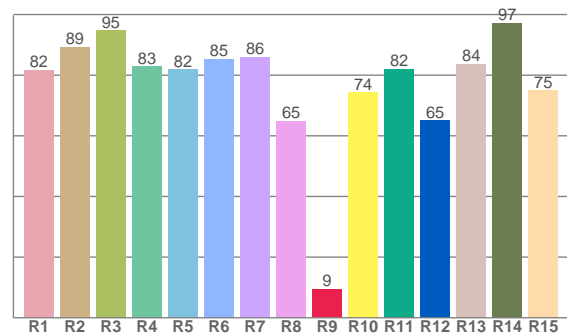
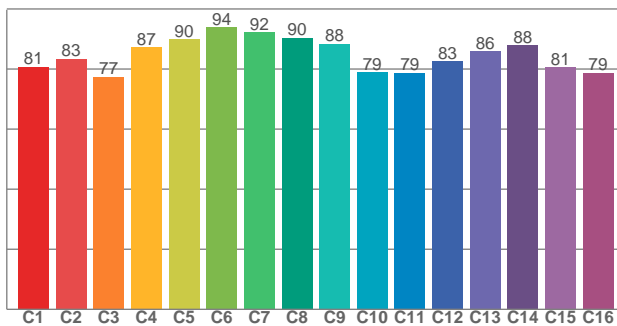
ZONAL LUMEN SUMMARY

0°-10° 6760 lm	10°-20° 6293 lm	20°-30° 2521 lm	30°-40° 601 lm	40°-50° 246 lm	50°-60° 145 lm	60°-70° 67.4 lm	70°-80° 10.8 lm	80°-90° 0.161 lm
90°-100° 0.005 lm	100°-110° 0.005 lm	110°-120° 0.003 lm	120°-130° 0.002 lm	130°-140° 0.001 lm	140°-150° 0.001 lm	150°-160° 0.001 lm	160°-170° 0.000 lm	170°-180° 0.003 lm

COLOR DETAILS

TM30: 84.5

CRI: 83.3 (R1-R8)



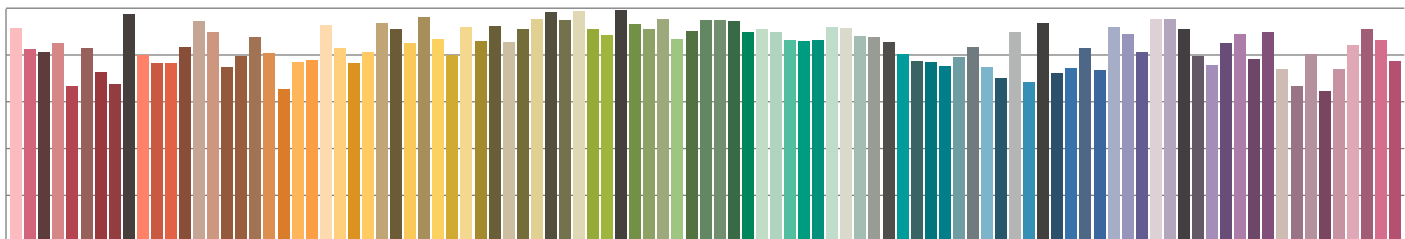
TM30 C values, 16 binned values out of total of 99 C values

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
80.7	83.4	77.4	87.3	90.0	93.8	92.2	90.3	88.3	78.9	78.8	82.6	86.0	87.9	80.6	78.7

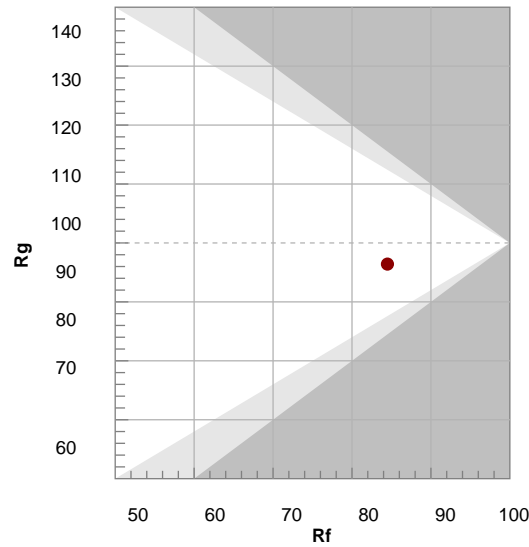
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
81.7	89.2	94.7	82.8	81.8	85.2	86.0	64.9	9.4	74.3	82.0	65.0	83.6	97.2	74.9

TM30 COLOR EVALUATION SAMPLE



TM30 DETAILS

Hue Bin	R <sub>f</sub>	Graphic shifts (%)	
		Chroma	Hue
1	81	-12%	-1%
2	83	-7%	6%
3	77	-4%	12%
4	87	1%	8%
5	90	2%	5%
6	94	3%	-2%
7	92	-3%	-4%
8	90	-5%	-2%
9	88	-7%	4%
10	79	-7%	11%
11	79	2%	14%
12	83	5%	7%
13	86	7%	-6%
14	88	9%	-7%
15	81	-1%	-14%
16	79	-6%	-12%



FIDELITY INDEX

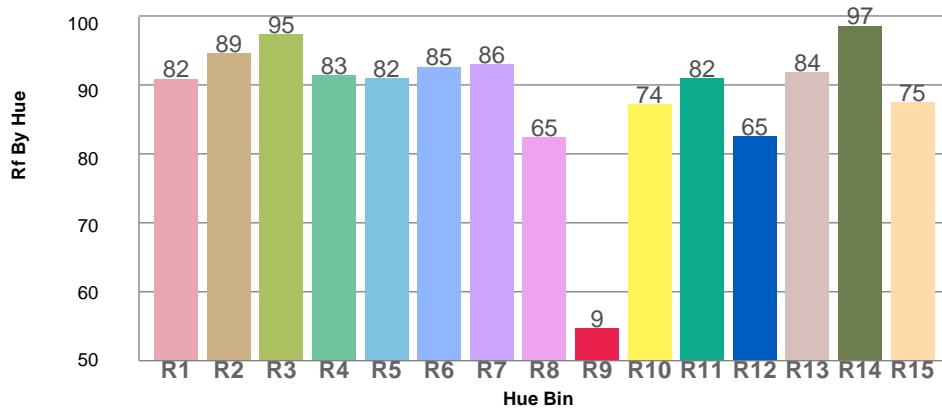
**R<sub>f</sub> 84.5**

GAMUT INDEX

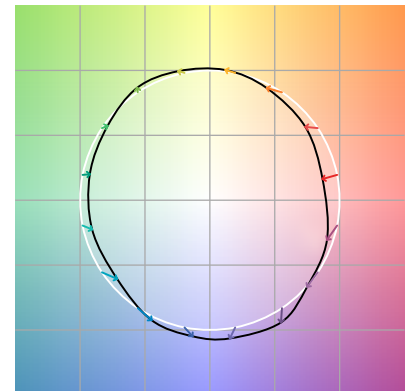
**R<sub>g</sub> 96.4**

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

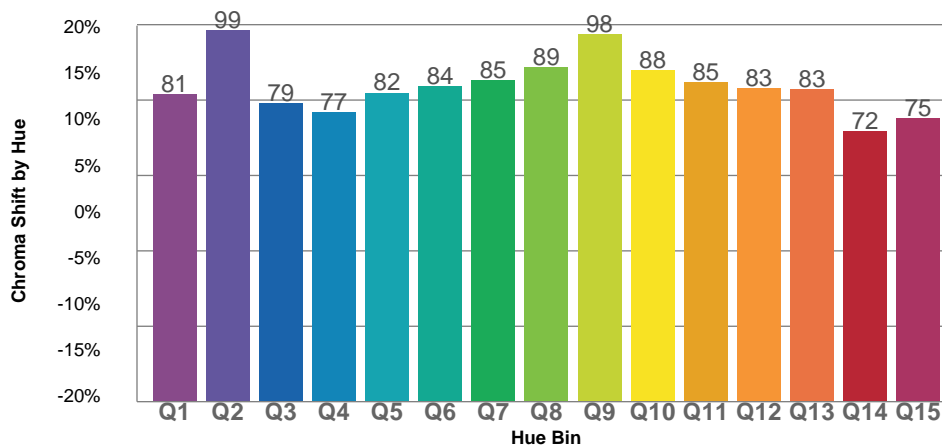
TM30 OVER 50



COLOR VECTOR GRAPHICS



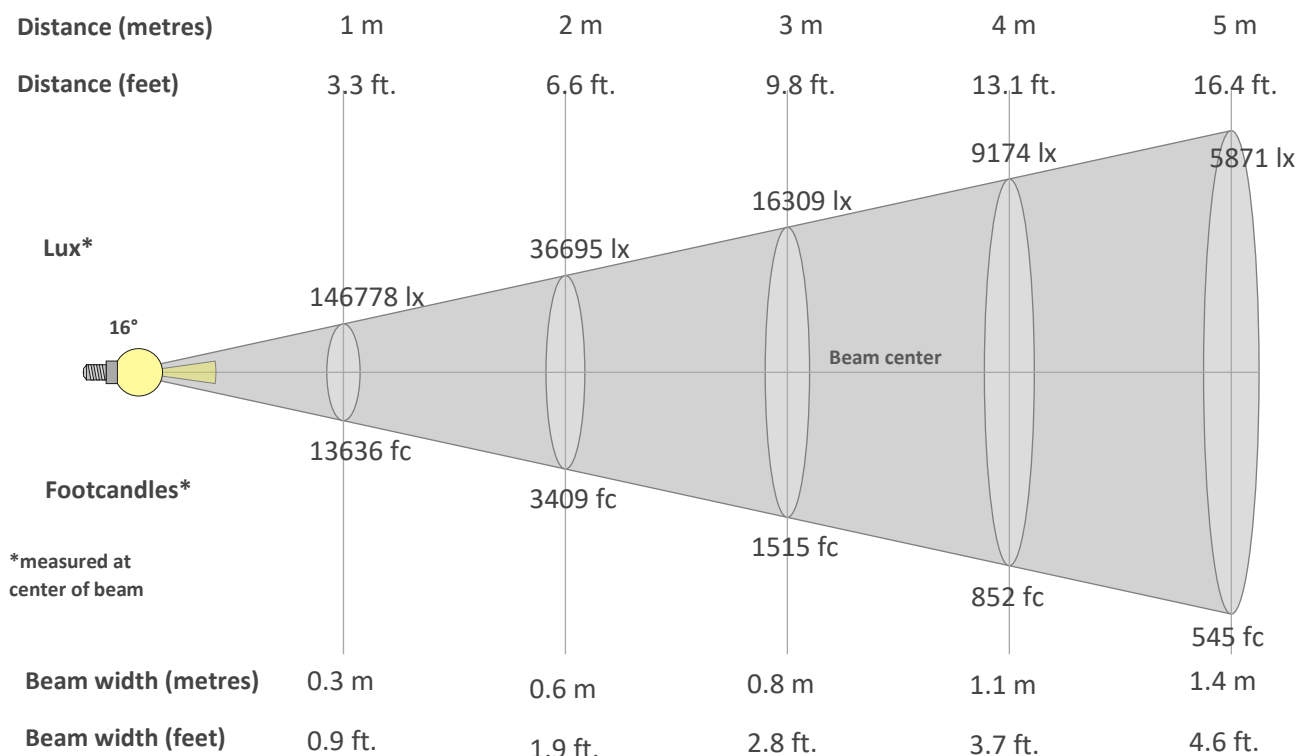
TM30 CHROMA SHIFT



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
146778lx	36695lx	16309lx	9174lx	5871lx	4077lx	2995lx	2293lx	1812lx	1468lx	1213lx	1019lx	869lx	749lx	652lx	573lx	508lx	453lx	407lx	367lx
13636.2fc	3409fc	1515.1fc	852.3fc	545.4fc	378.8fc	278.3fc	213.1fc	168.3fc	136.4fc	112.7fc	94.7fc	80.7fc	69.6fc	60.6fc	53.3fc	47.2fc	42.1fc	37.8fc	34.1fc

**Intensity in 0° c-plane**

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
147K	147K	146K	146K	145K	144K	143K	141K	139K	137K	134K	130K	126K	120K	114K	107K	99K	91K	83K	75K
100%	100%	100%	99%	99%	98%	97%	96%	95%	93%	91%	89%	86%	82%	78%	73%	67%	62%	56%	51%

**Intensity in 90° c-plane**

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
147K	140K	121K	94K	67K	46K	31K	21K	15K	11K	8K	6K	5K	4K	3K	2K	2K	2K	2K	1K
100%	96%	83%	64%	46%	31%	21%	14%	10%	7%	5%	4%	3%	2%	2%	2%	1%	1%	1%	1%

**Intensity in 180° c-plane**

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
147K	147K	146K	146K	145K	144K	143K	141K	139K	137K	134K	130K	126K	120K	114K	107K	99K	91K	83K	75K
100%	100%	100%	99%	99%	98%	97%	96%	95%	93%	91%	89%	86%	82%	78%	73%	67%	62%	56%	51%

**Intensity in 270° c-plane**

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
147K	140K	121K	94K	67K	46K	31K	21K	15K	11K	8K	6K	5K	4K	3K	2K	2K	2K	2K	1K
100%	96%	83%	64%	46%	31%	21%	14%	10%	7%	5%	4%	3%	2%	2%	2%	1%	1%	1%	1%