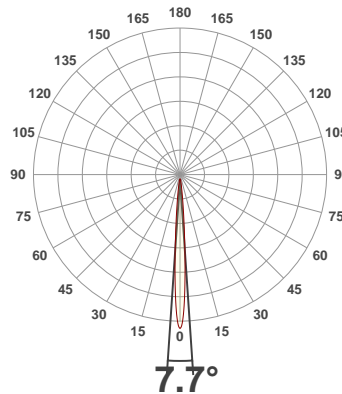
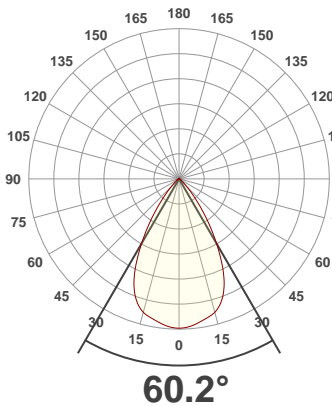




**PRODUCT INFORMATION**

SERIAL NUMBER:	LL-20191008-836
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**

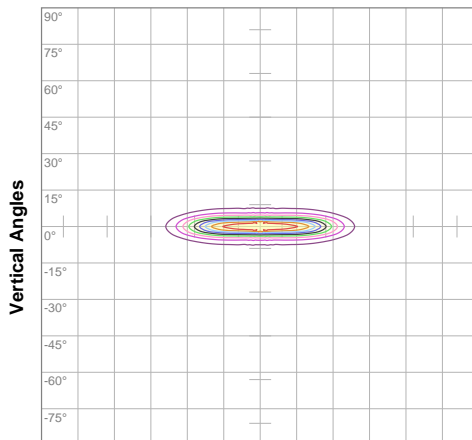


TOTAL LUMEN OUTPUT:	16959 lm
EFFICACY:	86 lm/W
PEAK INTENSITY:	92784 cd
COLOR RENDERING INDEX (CRI):	83.4
COLOR TEMPERATURE (CCT):	3945K
FIDELITY INDEX (TM30Rf):	84.5
GAMUT INDEX (TM30Rg):	96.3

**BEAM OUTPUT DATA**

BEAM ANGLE (FWHM)   C0/180:	60.2°
BEAM ANGLE (FWHM)   C90/270:	7.7°
FIELD ANGLE (10%)   C0/180:	86.3°
FIELD ANGLE (10%)   C90/270:	16.9°
NUMBER OF PLANES MEASURED:	36

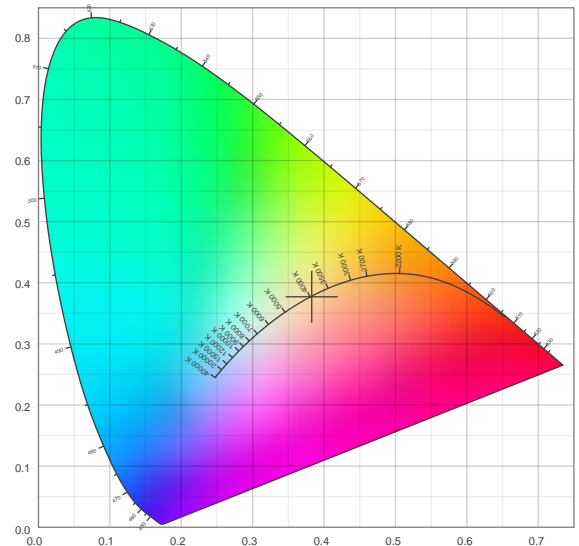
**ISO CANDELA DIAGRAM | DATA**



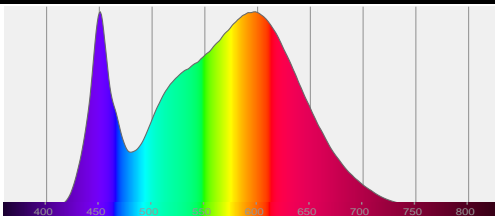
10%	9272 cd
20%	18544 cd
30%	27816 cd
40%	37087 cd
50%	46359 cd
60%	55631 cd
70%	64903 cd
80%	74175 cd
90%	83447 cd

INPUT POWER:	197.4 W
POWER FACTOR:	1.0
OPTICAL POWER:	51.5 mW
PEAK WAVELENGTH:	451 nm
DOMINANT WAVELENGTH:	582 nm

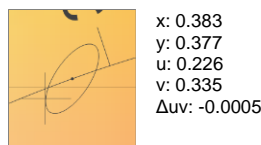
**CIE 1931:**



**SPECTRA**



**CIE 1931 ZOOM**



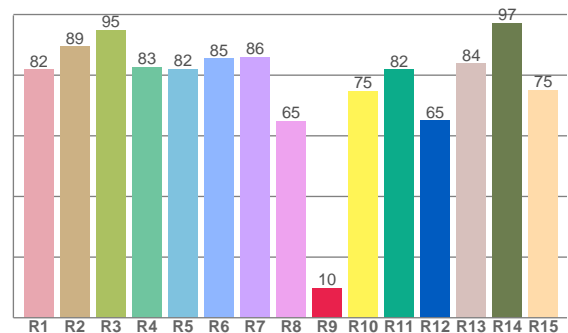
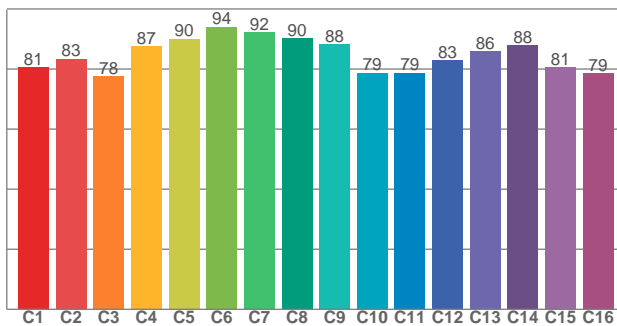
ZONAL LUMEN SUMMARY

0°-10° 4477 lm	10°-20° 5183 lm	20°-30° 3982 lm	30°-40° 2051 lm	40°-50° 751 lm	50°-60° 312 lm	60°-70° 154 lm	70°-80° 47.9 lm	80°-90° 1.96 lm
90°-100° 0.014 lm	100°-110° 0.013 lm	110°-120° 0.005 lm	120°-130° 0.003 lm	130°-140° 0.002 lm	140°-150° 0.001 lm	150°-160° 0.001 lm	160°-170° 0.001 lm	170°-180° 0.000 lm

COLOR DETAILS

TM30: 84.5

CRI: 83.4 (R1-R8)



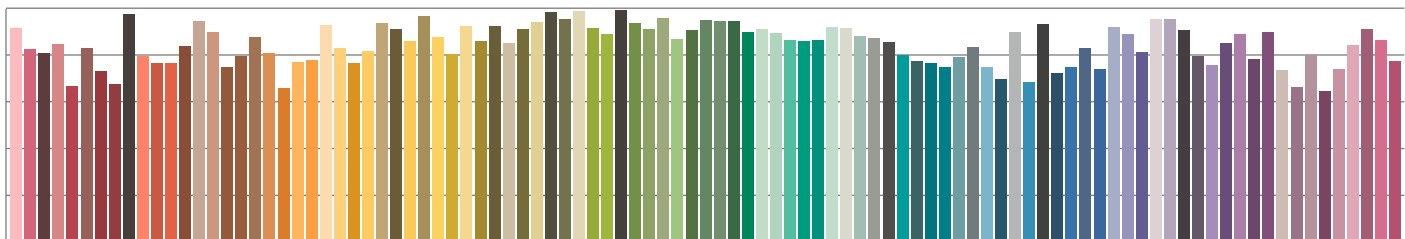
TM30 C values, 16 binned values out of total of 99 C values

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
80.6	83.4	77.6	87.5	90.1	94.1	92.1	90.3	88.1	78.7	78.7	82.8	86.0	87.9	80.6	78.7

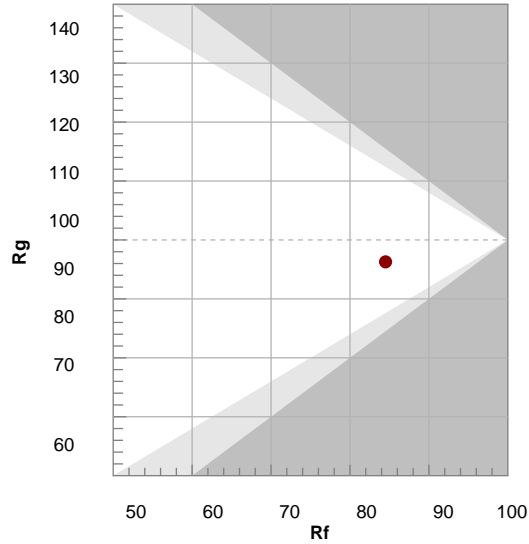
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
81.9	89.5	94.9	82.8	82.0	85.5	85.9	64.9	9.8	74.8	81.9	65.1	83.8	97.3	75.1

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	78	-4%	11%
4	87	1%	8%
5	90	2%	4%
6	94	3%	-2%
7	92	-3%	-4%
8	90	-5%	-1%
9	88	-7%	5%
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

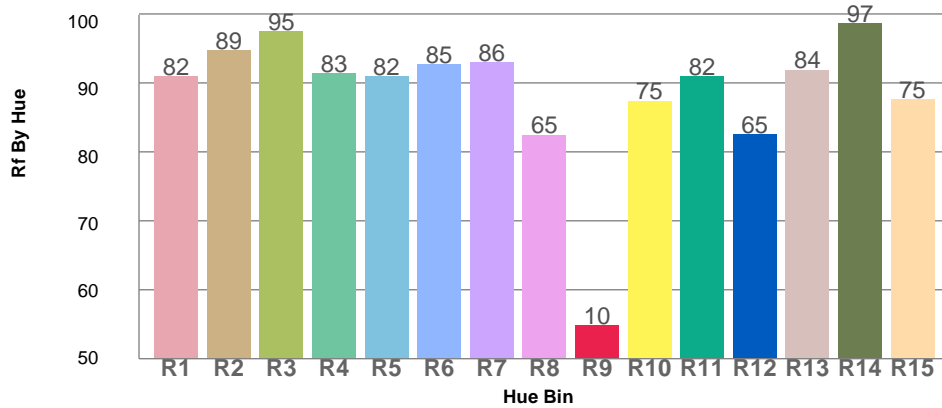
**R<sub>f</sub> 84.5**

GAMUT INDEX

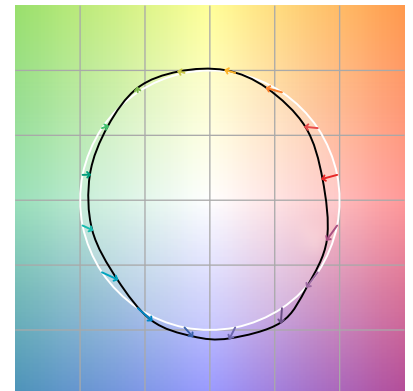
**R<sub>g</sub> 96.3**

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

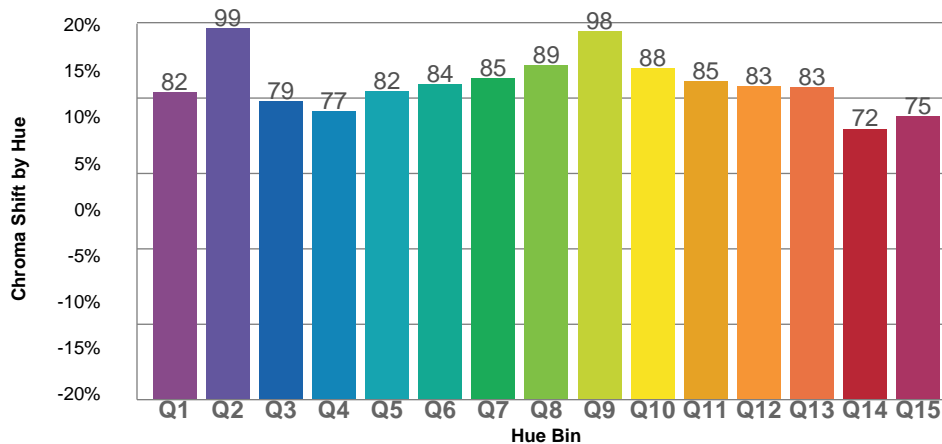
TM30 OVER 50



COLOR VECTOR GRAPHICS



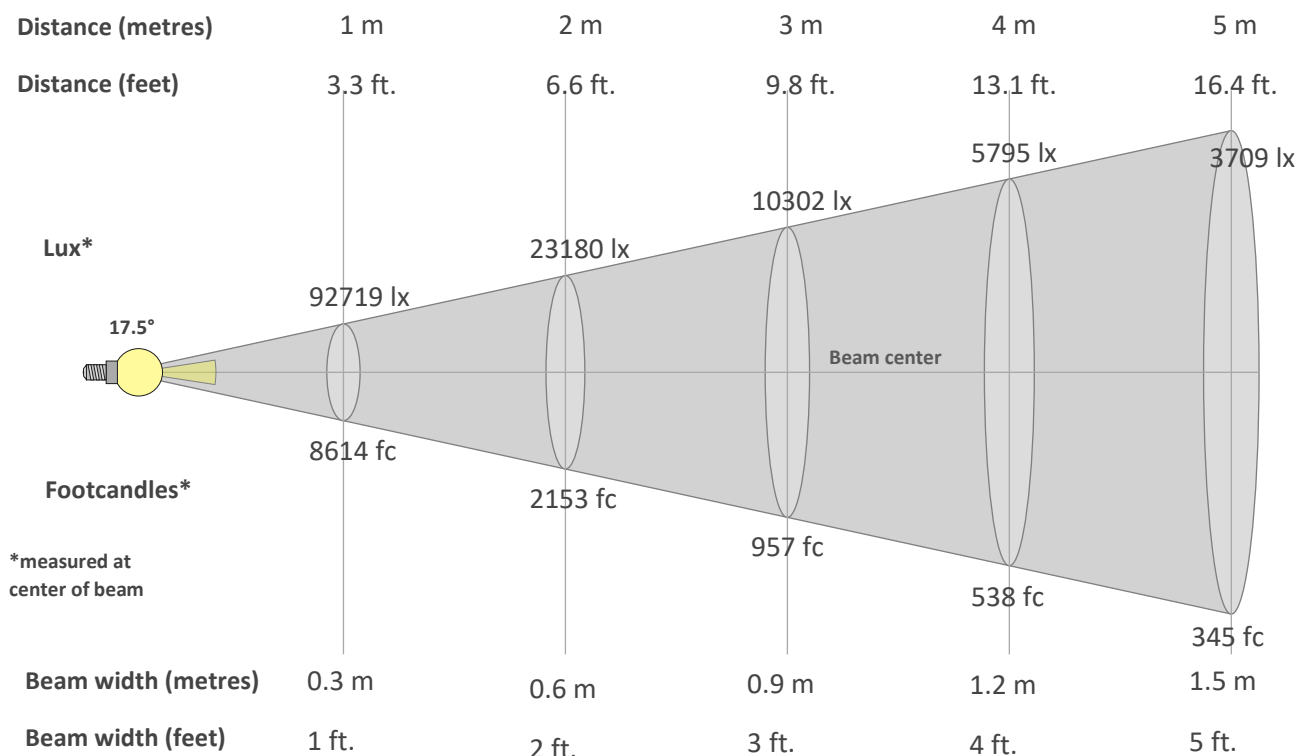
TM30 CHROMA SHIFT



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
92719lx	23180lx	10302lx	5795lx	3709lx	2576lx	1892lx	1449lx	1145lx	927lx	766lx	644lx	549lx	473lx	412lx	362lx	321lx	286lx	257lx	232lx
8613.8fc	2153.5fc	957.1fc	538.4fc	344.6fc	239.3fc	175.8fc	134.6fc	106.3fc	86.1fc	71.2fc	59.8fc	51fc	43.9fc	38.3fc	33.6fc	29.8fc	26.6fc	23.9fc	21.5fc

**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°
92.7K	92.7K	92.5K	92.3K	92.0K	91.6K	91.1K	90.5K	90.0K	89.4K	88.8K	88.3K	87.7K	87.2K	86.5K	85.7K	84.7K	83.5K	82.1K	80.5K
100%	100%	100%	100%	99%	99%	98%	98%	97%	96%	96%	95%	95%	94%	93%	92%	91%	90%	89%	87%

**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°
92.7K	88.6K	77.0K	60.6K	44.1K	30.8K	21.3K	14.9K	10.7K	7.9K	5.9K	4.5K	3.6K	2.9K	2.5K	2.1K	1.9K	1.7K	1.5K	1.3K
100%	96%	83%	65%	48%	33%	23%	16%	12%	8%	6%	5%	4%	3%	3%	2%	2%	2%	2%	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°
92.7K	92.7K	92.5K	92.3K	92.0K	91.6K	91.1K	90.5K	90.0K	89.4K	88.8K	88.3K	87.7K	87.2K	86.5K	85.7K	84.7K	83.5K	82.1K	80.5K
100%	100%	100%	100%	99%	99%	98%	98%	97%	96%	96%	95%	95%	94%	93%	92%	91%	90%	89%	87%

**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°
92.7K	88.6K	77.0K	60.6K	44.1K	30.8K	21.3K	14.9K	10.7K	7.9K	5.9K	4.5K	3.6K	2.9K	2.5K	2.1K	1.9K	1.7K	1.5K	1.3K
100%	96%	83%	65%	48%	33%	23%	16%	12%	8%	6%	5%	4%	3%	3%	2%	2%	2%	2%	1%