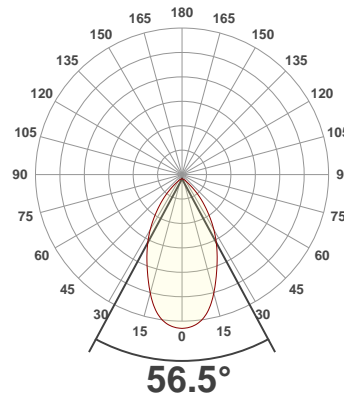
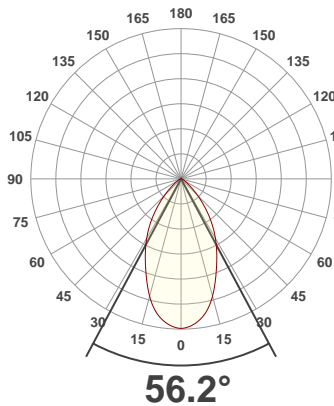




**PRODUCT INFORMATION**

SERIAL NUMBER:	LL-20191008-832
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**

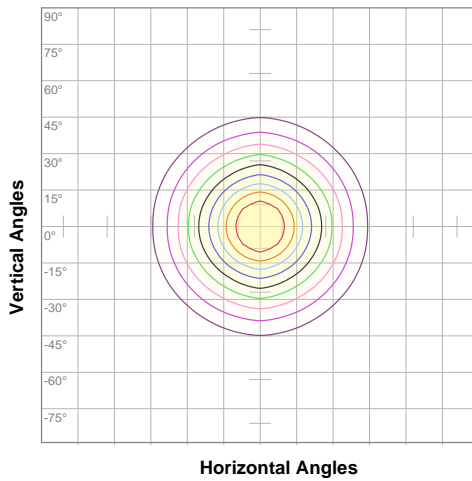


TOTAL LUMEN OUTPUT:	17019 lm
EFFICACY:	86 lm/W
PEAK INTENSITY:	17127 cd
COLOR RENDERING INDEX (CRI):	83.5
COLOR TEMPERATURE (CCT):	3969K
FIDELITY INDEX (TM30Rf):	84.5
GAMUT INDEX (TM30Rg):	96.2

**BEAM OUTPUT DATA**

BEAM ANGLE (FWHM)   C0/180:	56.2°
BEAM ANGLE (FWHM)   C90/270:	56.5°
FIELD ANGLE (10%)   C0/180:	98.3°
FIELD ANGLE (10%)   C90/270:	99.8°
NUMBER OF PLANES MEASURED:	12

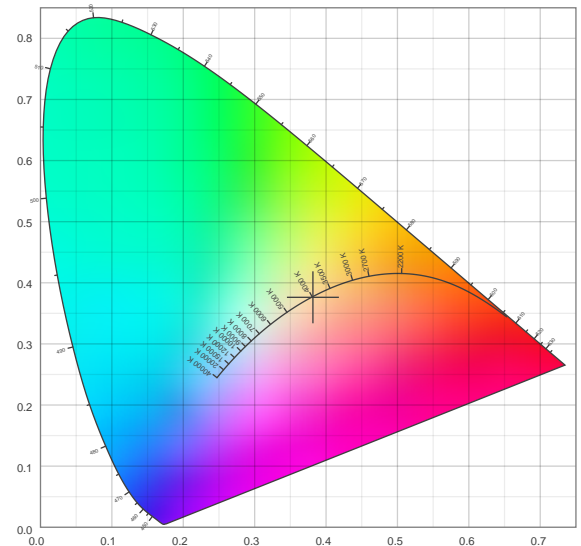
**ISO CANDELA DIAGRAM | DATA**



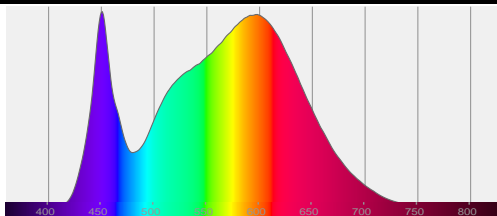
10%	1711 cd
20%	3422 cd
30%	5132 cd
40%	6843 cd
50%	8554 cd
60%	10265 cd
70%	11976 cd
80%	13686 cd
90%	15397 cd

INPUT POWER:	197.4 W
POWER FACTOR:	1.0
OPTICAL POWER:	51.7 mW
PEAK WAVELENGTH:	450 nm
DOMINANT WAVELENGTH:	582 nm

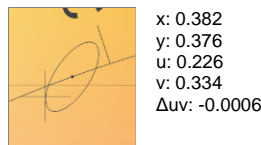
**CIE 1931:**



**SPECTRA**



**CIE 1931 ZOOM**



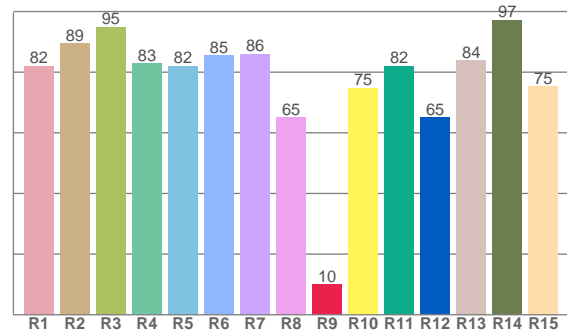
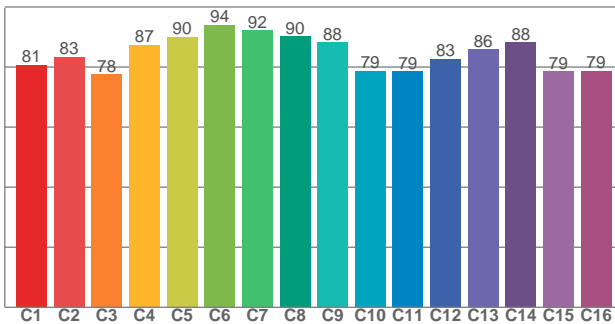
ZONAL LUMEN SUMMARY

0°-10° 1569 lm	10°-20° 3850 lm	20°-30° 4384 lm	30°-40° 3682 lm	40°-50° 2135 lm	50°-60° 822 lm	60°-70° 367 lm	70°-80° 173 lm	80°-90° 34.0 lm
90°-100° 1.44 lm	100°-110° 1.40 lm	110°-120° 0.529 lm	120°-130° 0.331 lm	130°-140° 0.231 lm	140°-150° 0.141 lm	150°-160° 0.104 lm	160°-170° 0.063 lm	170°-180° 0.021 lm

COLOR DETAILS

TM30: 84.5

CRI: 83.5 (R1-R8)



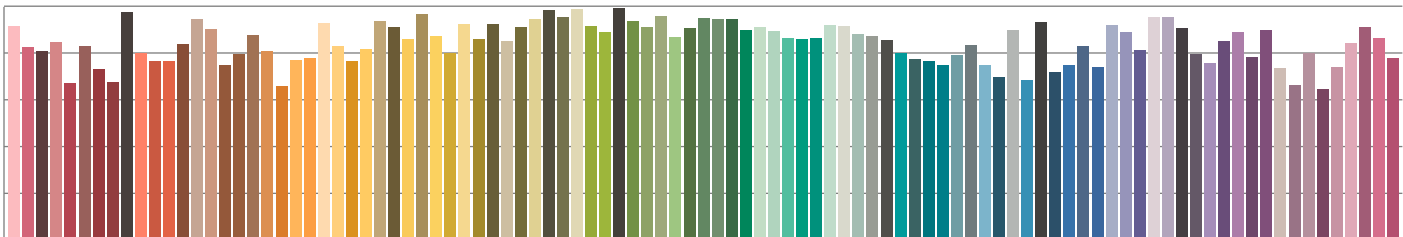
TM30 C values, 16 binned values out of total of 99 C values

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	77.6	87.4	90.1	94.0	92.2	90.3	88.2	78.8	78.7	82.7	86.0	88.2	78.6	78.7

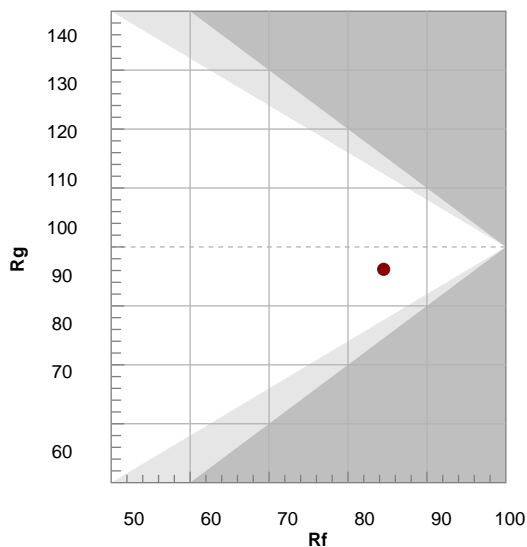
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
82.0	89.5	94.8	82.9	82.1	85.5	86.0	65.1	10.0	74.8	82.0	65.1	83.9	97.2	75.3

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	6%	-7%
15	79	-1%	-16%
16	79	-6%	-12%



FIDELITY INDEX

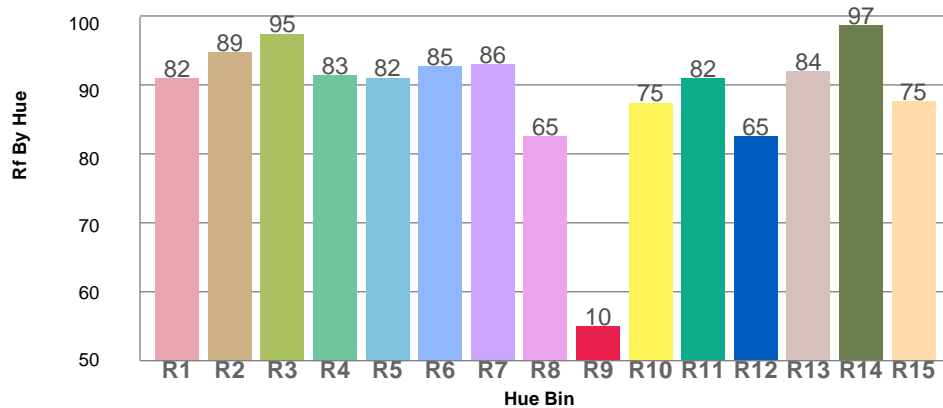
**R<sub>f</sub> 84.5**

GAMUT INDEX

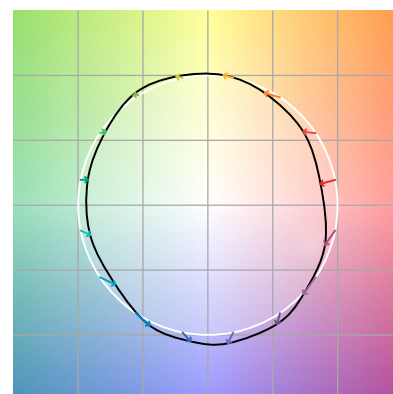
**R<sub>g</sub> 96.2**

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

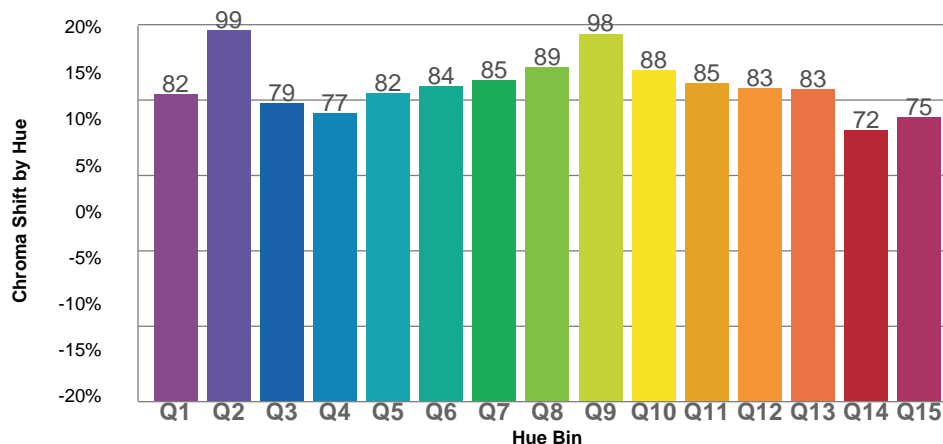
TM30 OVER 50



COLOR VECTOR GRAPHICS



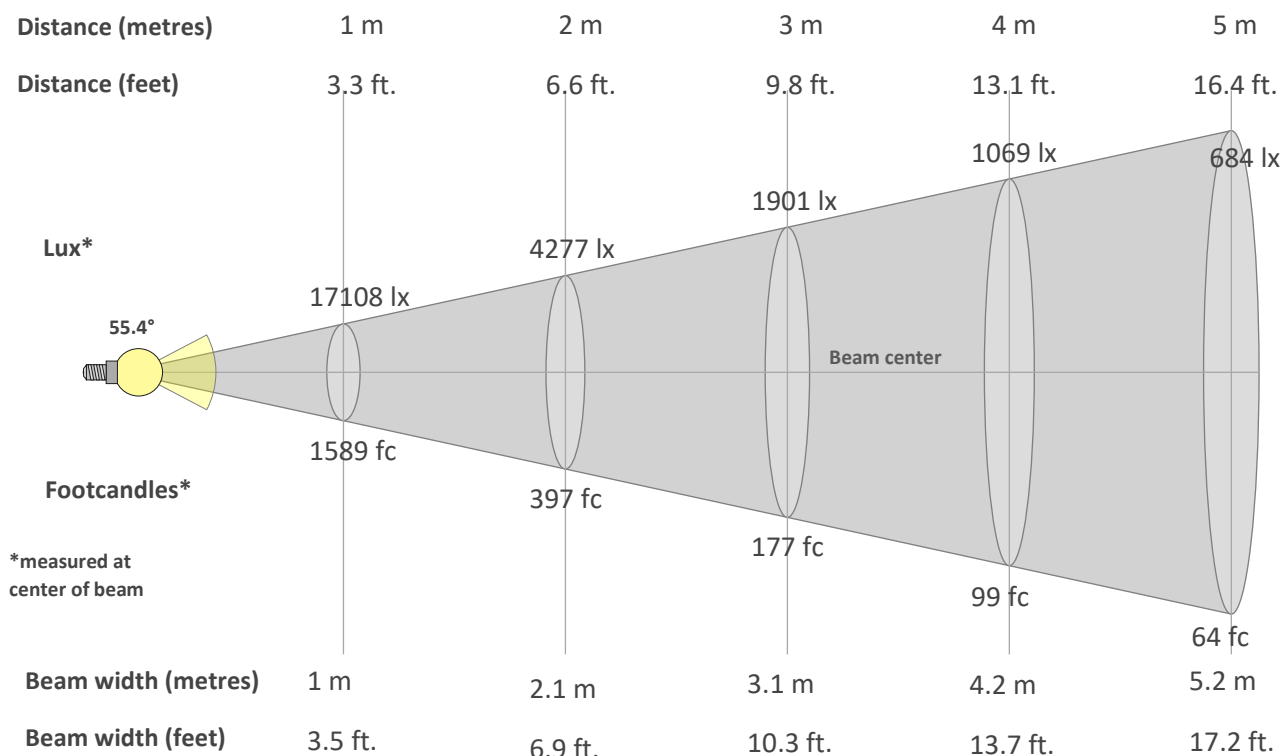
TM30 CHROMA SHIFT



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
17108lx	4277lx	1901lx	1069lx	684lx	475lx	349lx	267lx	211lx	171lx	141lx	119lx	101lx	87lx	76lx	67lx	59lx	53lx	47lx	43lx
1589.4fc	397.3fc	176.6fc	99.3fc	63.6fc	44.1fc	32.4fc	24.8fc	19.6fc	15.9fc	13.1fc	11fc	9.4fc	8.1fc	7.1fc	6.2fc	5.5fc	4.9fc	4.4fc	4fc

**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°
17.1K	17.0K	16.9K	16.6K	16.2K	15.7K	15.1K	14.3K	13.5K	12.6K	11.7K	10.9K	10.1K	9.3K	8.6K	7.9K	7.2K	6.4K	5.7K	5.0K
100%	100%	99%	97%	95%	92%	88%	84%	79%	74%	68%	64%	59%	54%	50%	46%	42%	38%	33%	29%

**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°
17.1K	17.1K	16.9K	16.7K	16.3K	15.8K	15.2K	14.4K	13.6K	12.7K	11.8K	10.9K	10.1K	9.4K	8.6K	7.9K	7.2K	6.4K	5.7K	5.0K
100%	100%	99%	98%	96%	93%	89%	84%	79%	74%	69%	64%	59%	55%	51%	46%	42%	38%	33%	29%

**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°
17.1K	17.0K	16.9K	16.6K	16.2K	15.7K	15.1K	14.3K	13.5K	12.6K	11.7K	10.9K	10.1K	9.3K	8.6K	7.9K	7.2K	6.4K	5.7K	5.0K
100%	100%	99%	97%	95%	92%	88%	84%	79%	74%	68%	64%	59%	54%	50%	46%	42%	38%	33%	29%

**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°
17.1K	17.1K	16.9K	16.7K	16.3K	15.8K	15.2K	14.4K	13.6K	12.7K	11.8K	10.9K	10.1K	9.4K	8.6K	7.9K	7.2K	6.4K	5.7K	5.0K
100%	100%	99%	98%	96%	93%	89%	84%	79%	74%	69%	64%	59%	55%	51%	46%	42%	38%	33%	29%