



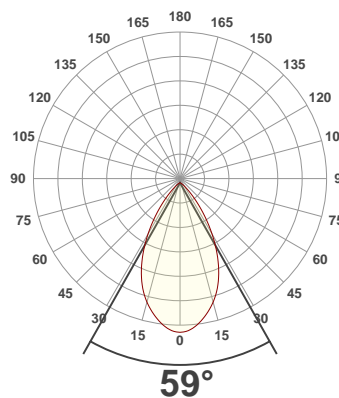
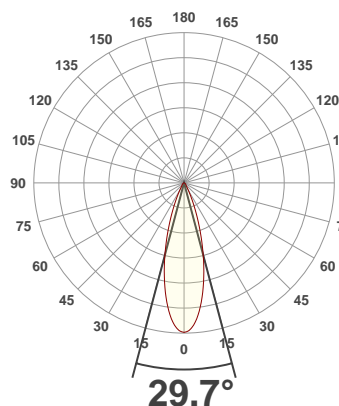
**PRODUCT INFORMATION**

SERIAL NUMBER:	LL-20191008-837
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**

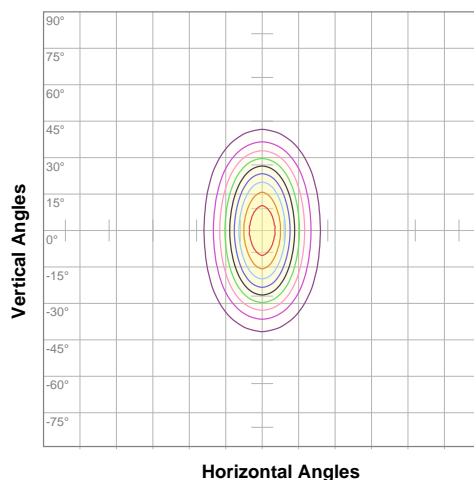


TOTAL LUMEN OUTPUT:	16719 lm
EFFICACY:	85 lm/W
PEAK INTENSITY:	29630 cd
COLOR RENDERING INDEX (CRI):	83.5
COLOR TEMPERATURE (CCT):	3965K
FIDELITY INDEX (TM30rf):	84.5
GAMUT INDEX (TM30Rg):	96.1

**BEAM OUTPUT DATA**

BEAM ANGLE (FWHM)   C0/180:	29.7°
BEAM ANGLE (FWHM)   C90/270:	59°
FIELD ANGLE (10%)   C0/180:	53.4°
FIELD ANGLE (10%)   C90/270:	92.5°
NUMBER OF PLANES MEASURED:	36

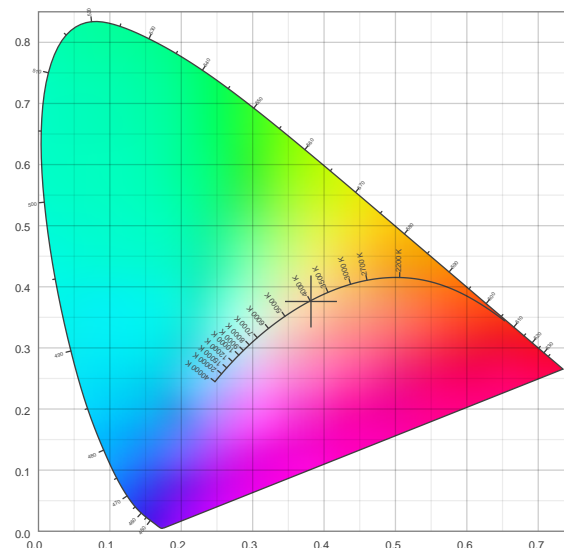
**ISO CANDELA DIAGRAM DATA**



10%	2961 cd
20%	5921 cd
30%	8882 cd
40%	11843 cd
50%	14803 cd
60%	17764 cd
70%	20725 cd
80%	23685 cd
90%	26646 cd

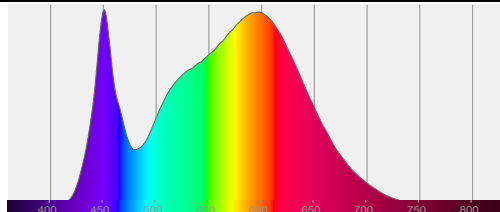
INPUT POWER:	197.4 W
POWER FACTOR:	1.0
OPTICAL POWER:	50.8 mW
PEAK WAVELENGTH:	451 nm
DOMINANT WAVELENGTH:	582 nm

**CIE 1931:**



**SPECTRA**

**CIE 1931 ZOOM**



x:	0.382
y:	0.376
u:	0.226
v:	0.334
Δuv:	-0.0007

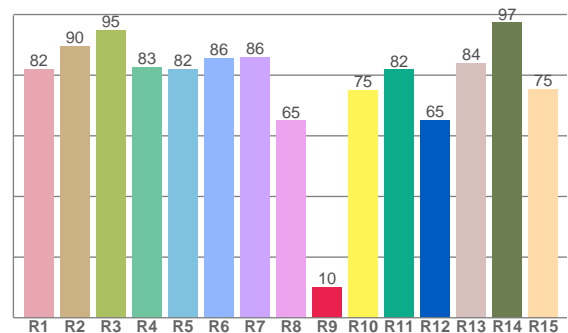
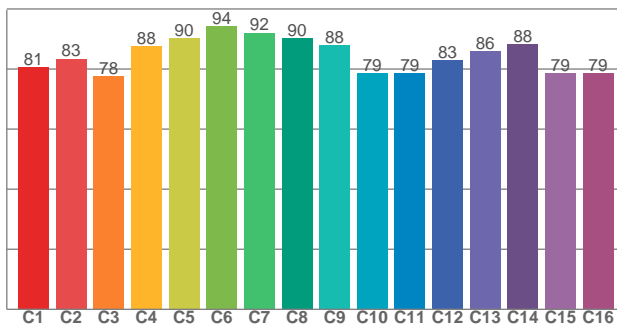
ZONAL LUMEN SUMMARY

0°-10° 2361 lm	10°-20° 5205 lm	20°-30° 4628 lm	30°-40° 2516 lm	40°-50° 1110 lm	50°-60° 480 lm	60°-70° 269 lm	70°-80° 128 lm	80°-90° 21.8 lm
90°-100° 0.019 lm	100°-110° 0.018 lm	110°-120° 0.250 lm	120°-130° 0.010 lm	130°-140° 0.007 lm	140°-150° 0.004 lm	150°-160° 0.003 lm	160°-170° 0.002 lm	170°-180° 0.025 lm

COLOR DETAILS

TM30: 84.5

CRI: 83.5 (R1-R8)



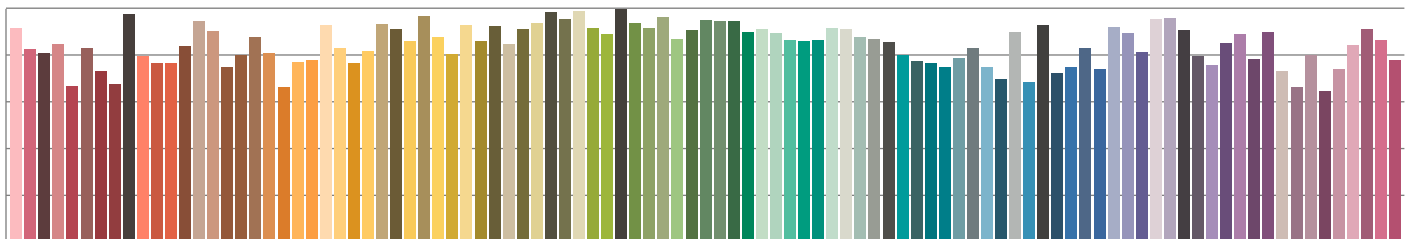
TM30 C values, 16 binned values out of total of 99 C values

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	77.7	87.5	90.1	94.1	92.1	90.3	88.0	78.6	78.7	82.9	86.0	88.3	78.6	78.7

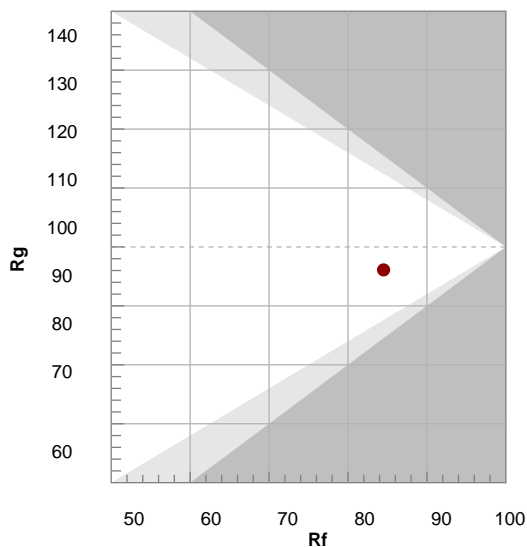
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
82.0	89.6	94.9	82.8	82.1	85.6	85.9	65.0	10.1	75.1	81.9	65.2	84.0	97.3	75.4

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	88	1%	8%
5	90	2%	4%
6	94	3%	-2%
7	92	-3%	-4%
8	90	-6%	-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

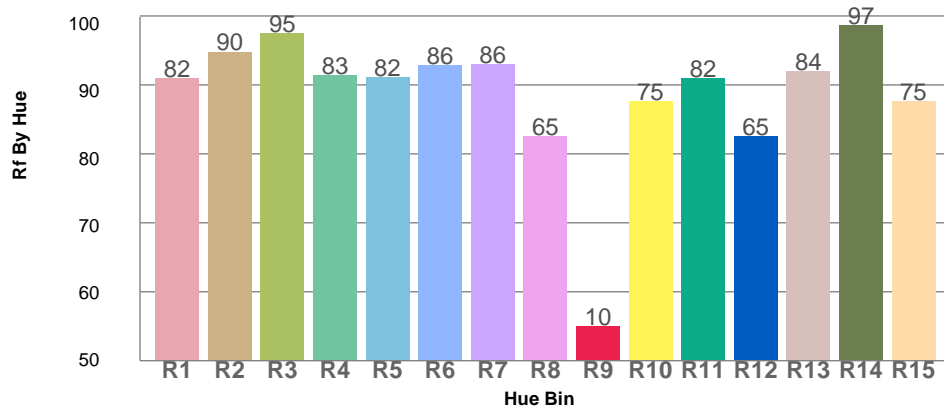
**R<sub>f</sub> 84.5**

GAMUT INDEX

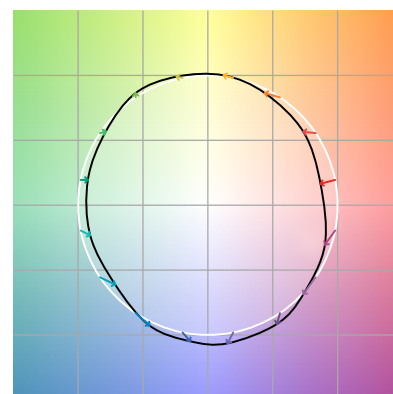
**R<sub>g</sub> 96.1**

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

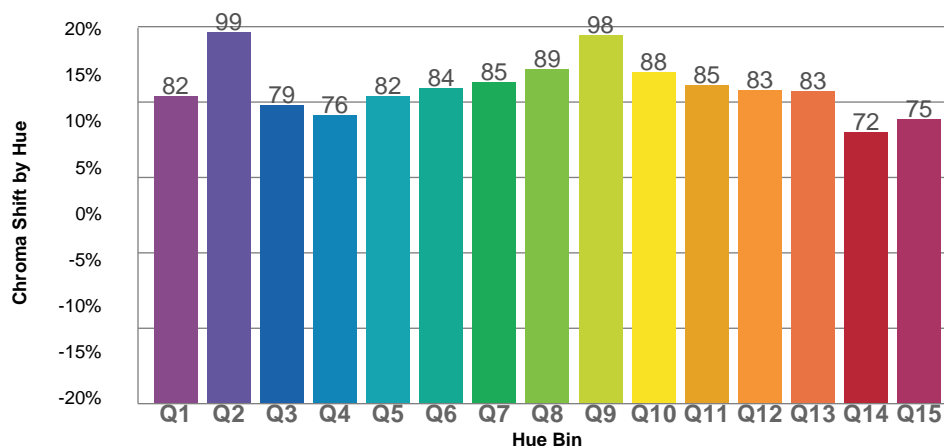
TM30 OVER 50



COLOR VECTOR GRAPHICS



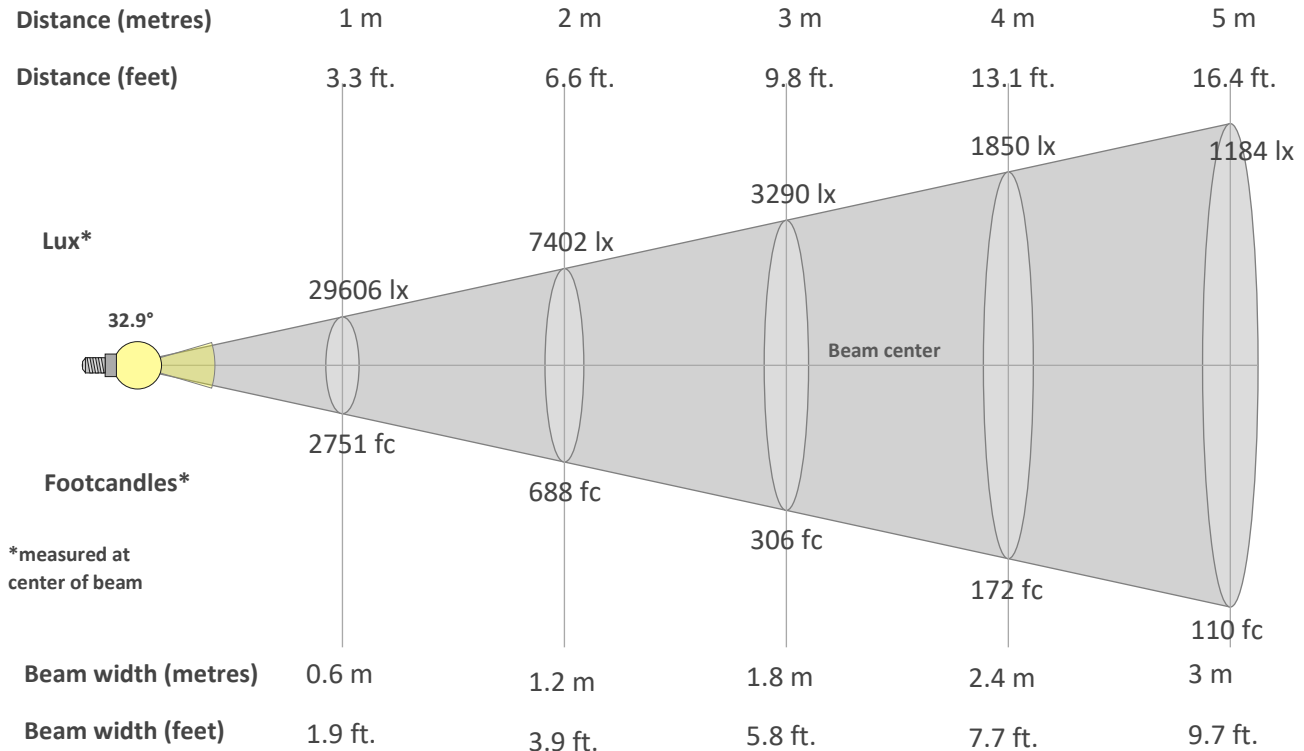
TM30 CHROMA SHIFT



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
29606lx	7402lx	3290lx	1850lx	1184lx	822lx	604lx	463lx	366lx	296lx	245lx	206lx	175lx	151lx	132lx	116lx	102lx	91lx	82lx	74lx
2750.5fc	687.6fc	305.6fc	171.9fc	110fc	76.4fc	56.1fc	43fc	34fc	27.5fc	22.7fc	19.1fc	16.3fc	14fc	12.2fc	10.7fc	9.5fc	8.5fc	7.6fc	6.9fc

**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°
29.6K	29.2K	28.1K	26.4K	24.1K	21.5K	18.8K	16.0K	13.2K	10.6K	8.3K	6.3K	4.6K	3.3K	2.4K	1.7K	1.3K	1.0K	0.9K	0.7K
100%	99%	95%	89%	81%	73%	63%	54%	45%	36%	28%	21%	16%	11%	8%	6%	4%	3%	3%	2%

**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°
29.6K	29.5K	29.2K	28.7K	28.0K	27.2K	26.4K	25.5K	24.5K	23.4K	22.2K	20.8K	19.3K	17.7K	16.1K	14.3K	12.6K	10.9K	9.3K	7.7K
100%	100%	99%	97%	95%	92%	89%	86%	83%	79%	75%	70%	65%	60%	54%	48%	43%	37%	31%	26%

**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°
29.6K	29.2K	28.1K	26.4K	24.1K	21.5K	18.8K	16.0K	13.2K	10.6K	8.3K	6.3K	4.6K	3.3K	2.4K	1.7K	1.3K	1.0K	0.9K	0.7K
100%	99%	95%	89%	81%	73%	63%	54%	45%	36%	28%	21%	16%	11%	8%	6%	4%	3%	3%	2%

**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°
29.6K	29.5K	29.2K	28.7K	28.0K	27.2K	26.4K	25.5K	24.5K	23.4K	22.2K	20.8K	19.3K	17.7K	16.1K	14.3K	12.6K	10.9K	9.3K	7.7K
100%	100%	99%	97%	95%	92%	89%	86%	83%	79%	75%	70%	65%	60%	54%	48%	43%	37%	31%	26%