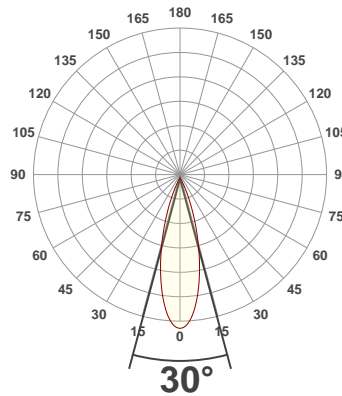
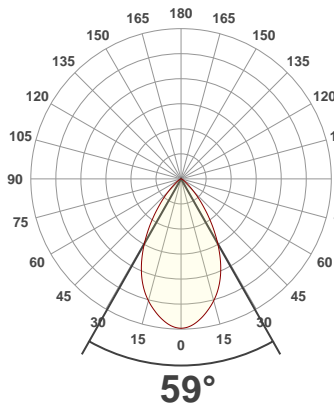




**PRODUCT INFORMATION**

SERIAL NUMBER:	LL-20191008-838
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**

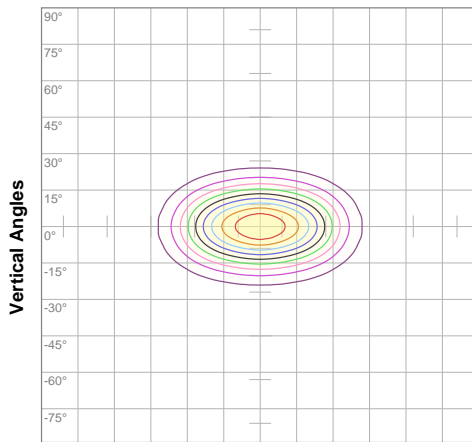


TOTAL LUMEN OUTPUT:	16771 lm
EFFICACY:	85 lm/W
PEAK INTENSITY:	29342 cd
COLOR RENDERING INDEX (CRI):	83.4
COLOR TEMPERATURE (CCT):	3962K
FIDELITY INDEX (TM30Rf):	84.5
GAMUT INDEX (TM30Rg):	96.2

**BEAM OUTPUT DATA**

BEAM ANGLE (FWHM)   C0/180:	59°
BEAM ANGLE (FWHM)   C90/270:	30°
FIELD ANGLE (10%)   C0/180:	93.3°
FIELD ANGLE (10%)   C90/270:	53.9°
NUMBER OF PLANES MEASURED:	36

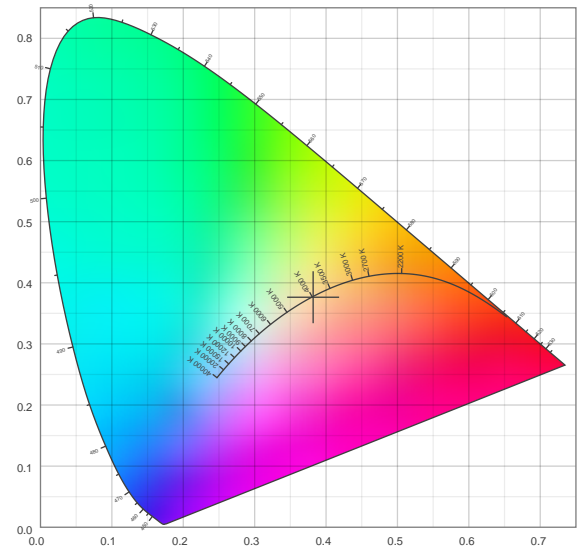
**ISO CANDELA DIAGRAM | DATA**



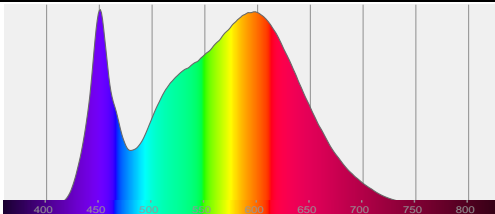
10%	2932 cd
20%	5864 cd
30%	8796 cd
40%	11728 cd
50%	14660 cd
60%	17592 cd
70%	20525 cd
80%	23457 cd
90%	26389 cd

INPUT POWER:	197.4 W
POWER FACTOR:	1.0
OPTICAL POWER:	50.9 mW
PEAK WAVELENGTH:	451 nm
DOMINANT WAVELENGTH:	582 nm

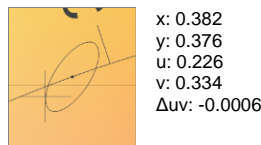
**CIE 1931:**



**SPECTRA**



**CIE 1931 ZOOM**



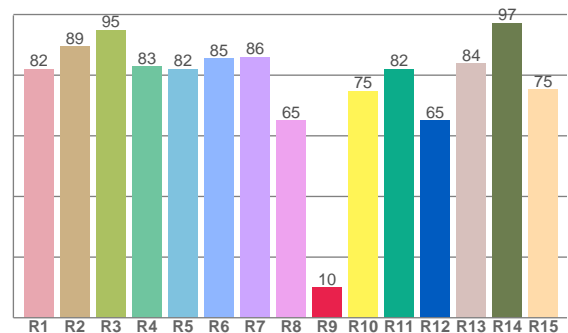
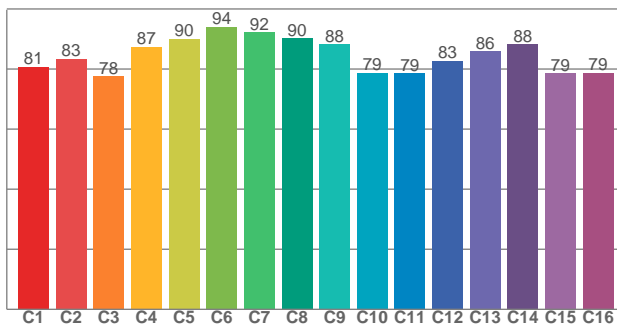
ZONAL LUMEN SUMMARY

0°-10° 2425 lm	10°-20° 5330 lm	20°-30° 4556 lm	30°-40° 2496 lm	40°-50° 1068 lm	50°-60° 483 lm	60°-70° 267 lm	70°-80° 127 lm	80°-90° 19.4 lm
90°-100° 0.064 lm	100°-110° 0.056 lm	110°-120° 0.058 lm	120°-130° 0.016 lm	130°-140° 0.017 lm	140°-150° 0.011 lm	150°-160° 0.008 lm	160°-170° 0.005 lm	170°-180° 0.028 lm

COLOR DETAILS

TM30: 84.5

CRI: 83.4 (R1-R8)



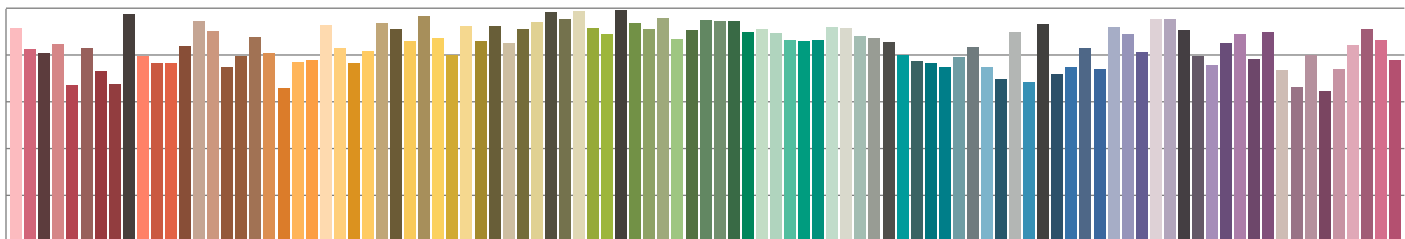
TM30 C values, 16 binned values out of total of 99 C values

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
80.7	83.4	77.6	87.4	90.1	94.0	92.2	90.3	88.1	78.7	78.7	82.8	86.0	88.2	78.6	78.7

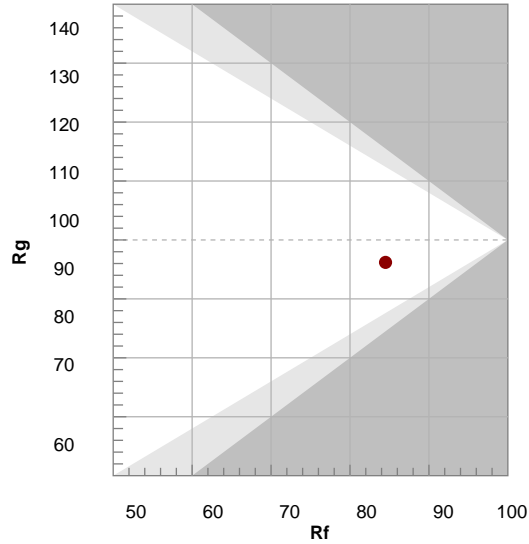
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
82.0	89.5	94.8	82.8	82.0	85.5	86.0	65.1	9.9	74.8	82.0	65.1	83.9	97.2	75.2

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

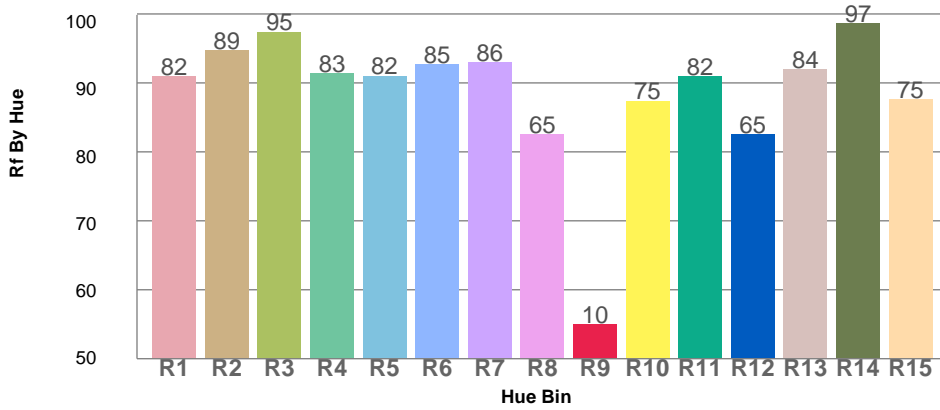
**R<sub>f</sub> 84.5**

GAMUT INDEX

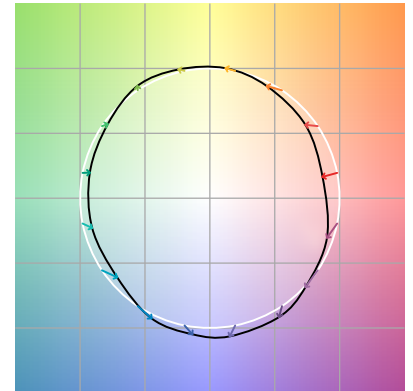
**R<sub>g</sub> 96.2**

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

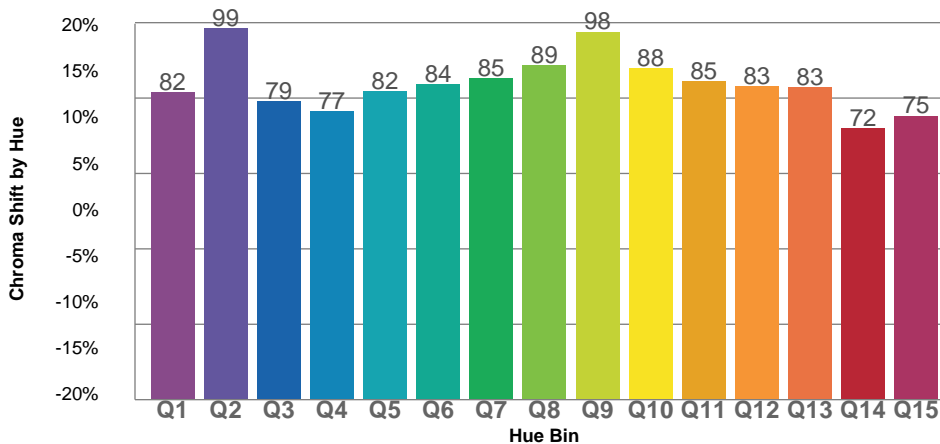
TM30 OVER 50



COLOR VECTOR GRAPHICS



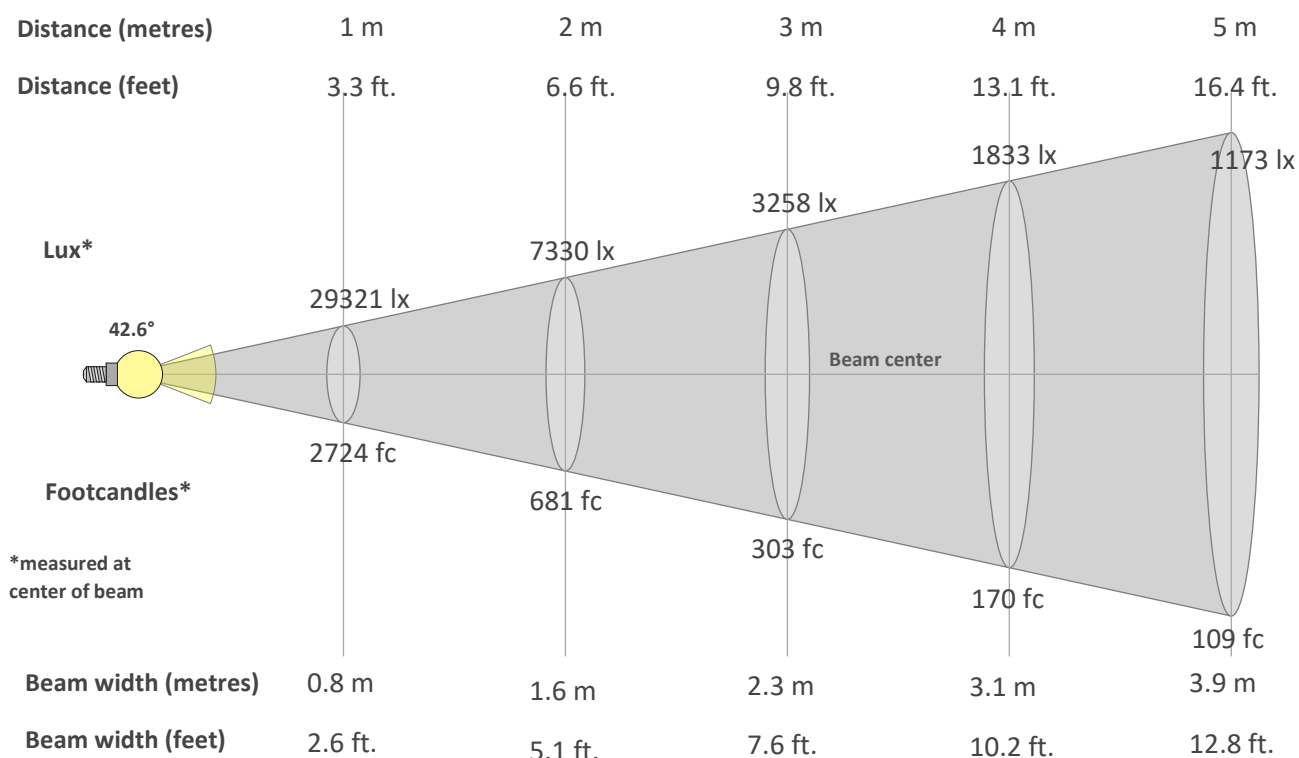
TM30 CHROMA SHIFT



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
29321lx	7330lx	3258lx	1833lx	1173lx	814lx	598lx	458lx	362lx	293lx	242lx	204lx	173lx	150lx	130lx	115lx	101lx	90lx	81lx	73lx
2724fc	681fc	302.7fc	170.2fc	109fc	75.7fc	55.6fc	42.6fc	33.6fc	27.2fc	22.5fc	18.9fc	16.1fc	13.9fc	12.1fc	10.6fc	9.4fc	8.4fc	7.5fc	6.8fc

**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°
29.3K	29.2K	28.9K	28.4K	27.7K	26.9K	26.1K	25.2K	24.3K	23.2K	22.0K	20.6K	19.1K	17.6K	15.9K	14.2K	12.5K	10.9K	9.2K	7.7K
100%	100%	98%	97%	94%	92%	89%	86%	83%	79%	75%	70%	65%	60%	54%	49%	43%	37%	31%	26%

**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°
29.3K	28.9K	27.8K	26.2K	24.0K	21.5K	18.8K	16.0K	13.3K	10.7K	8.4K	6.4K	4.7K	3.4K	2.5K	1.8K	1.3K	1.1K	0.9K	0.7K
100%	99%	95%	89%	82%	73%	64%	55%	45%	37%	29%	22%	16%	12%	8%	6%	5%	4%	3%	3%

**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°
29.3K	29.2K	28.9K	28.4K	27.7K	26.9K	26.1K	25.2K	24.3K	23.2K	22.0K	20.6K	19.1K	17.6K	15.9K	14.2K	12.5K	10.9K	9.2K	7.7K
100%	100%	98%	97%	94%	92%	89%	86%	83%	79%	75%	70%	65%	60%	54%	49%	43%	37%	31%	26%

**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°
29.3K	28.9K	27.8K	26.2K	24.0K	21.5K	18.8K	16.0K	13.3K	10.7K	8.4K	6.4K	4.7K	3.4K	2.5K	1.8K	1.3K	1.1K	0.9K	0.7K
100%	99%	95%	89%	82%	73%	64%	55%	45%	37%	29%	22%	16%	12%	8%	6%	5%	4%	3%	3%