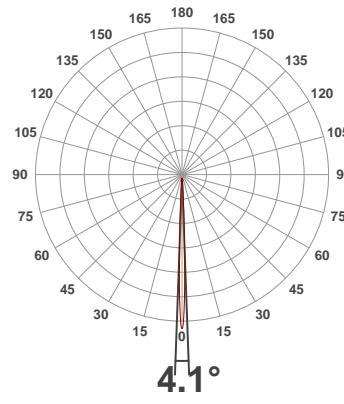
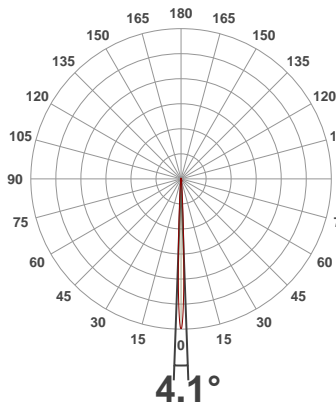




**PRODUCT INFORMATION**

SERIAL NUMBER:	LL-20191002-788
DATE OF MEASUREMENT:	2019-10-02
SIZE (dia. x h):	440 mm x 92 mm

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

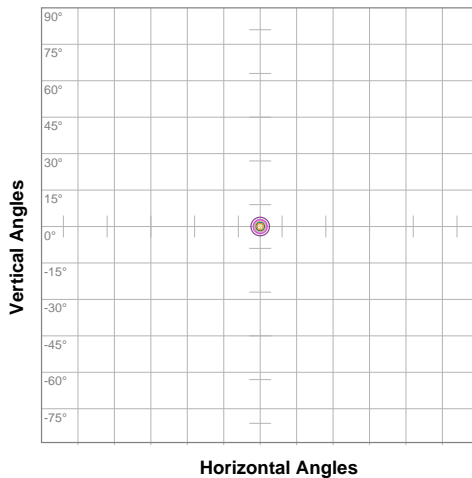


TOTAL LUMEN OUTPUT:	12125 lm
EFFICACY:	62 lm/W
PEAK INTENSITY:	1343923 cd
COLOR RENDERING INDEX (CRI):	81.4
COLOR TEMPERATURE (CCT):	4067K
FIDELITY INDEX (TM30Rf):	82.8
GAMUT INDEX (TM30Rg):	96.3

**BEAM OUTPUT DATA**

BEAM ANGLE (FWHM)   C0/180:	4.1°
BEAM ANGLE (FWHM)   C90/270:	4.1°
FIELD ANGLE (10%)   C0/180:	8.9°
FIELD ANGLE (10%)   C90/270:	8.9°
NUMBER OF PLANES MEASURED:	12

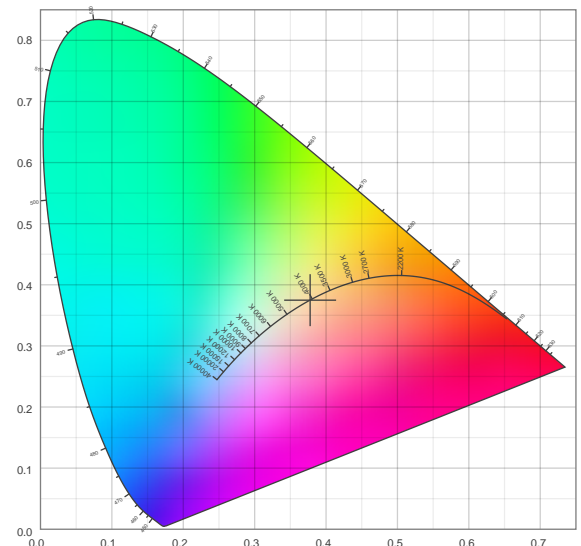
**ISO CANDELA DIAGRAM | DATA**



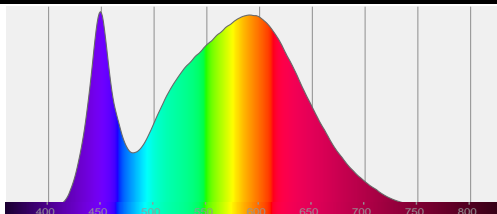
10%	134392 cd
20%	268785 cd
30%	403177 cd
40%	537569 cd
50%	671961 cd
60%	806354 cd
70%	940746 cd
80%	1075138 cd
90%	1209530 cd

INPUT POWER:	194.6 W
POWER FACTOR:	1.0
OPTICAL POWER:	37.0 mW
PEAK WAVELENGTH:	449 nm
DOMINANT WAVELENGTH:	581 nm

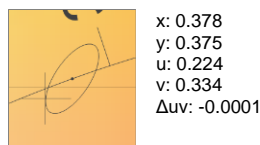
**CIE 1931:**



**SPECTRA**



**CIE 1931 ZOOM**



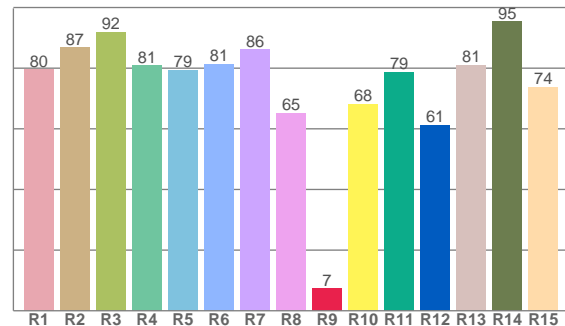
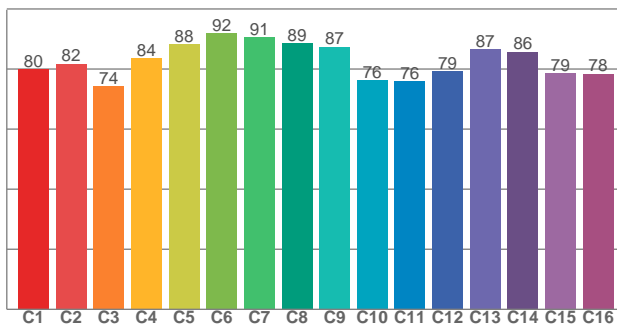
ZONAL LUMEN SUMMARY

0°-10° 11409 lm	10°-20° 711 lm	20°-30° 3.18 lm	30°-40° 0.561 lm	40°-50° 0.203 lm	50°-60° 0.228 lm	60°-70° 0.207 lm	70°-80° 0.166 lm	80°-90° 0.141 lm
90°-100° 0.090 lm	100°-110° 0.088 lm	110°-120° 0.082 lm	120°-130° 0.074 lm	130°-140° 0.064 lm	140°-150° 0.052 lm	150°-160° 0.038 lm	160°-170° 0.023 lm	170°-180° 0.008 lm

COLOR DETAILS

TM30: 82.8

CRI: 81.4 (R1-R8)



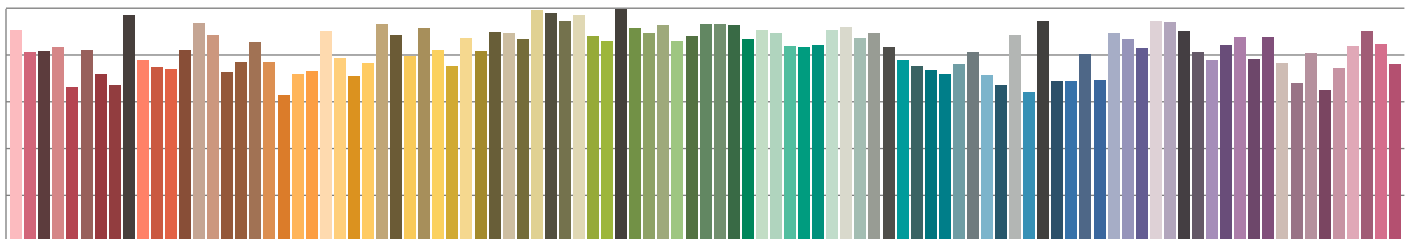
TM30 C values, 16 binned values out of total of 99 C values

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
80.0	81.8	74.2	83.5	88.2	91.9	90.6	88.6	87.4	76.2	76.0	79.3	86.6	85.7	78.6	78.4

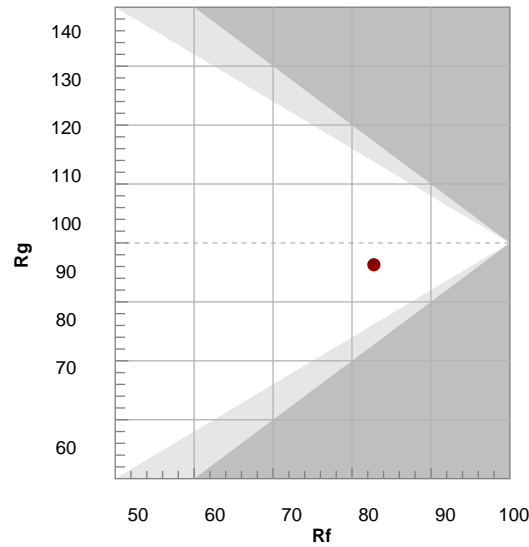
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
79.6	86.8	91.9	80.9	79.4	81.4	86.1	65.1	7.3	68.1	78.7	61.2	81.1	95.3	73.7

TM30 COLOR EVALUATION SAMPLE



TM30 DETAILS

Hue Bin	R <sub>f</sub>	Graphic shifts (%)	
		Chroma	Hue
1	80	-12%	-2%
2	82	-8%	7%
3	74	-4%	13%
4	84	2%	10%
5	88	4%	6%
6	92	5%	-2%
7	91	-2%	-5%
8	89	-6%	-3%
9	87	-8%	3%
10	76	-9%	12%
11	76	0%	16%
12	79	5%	10%
13	87	9%	-3%
14	86	6%	-6%
15	79	0%	-16%
16	78	-5%	-13%



FIDELITY INDEX

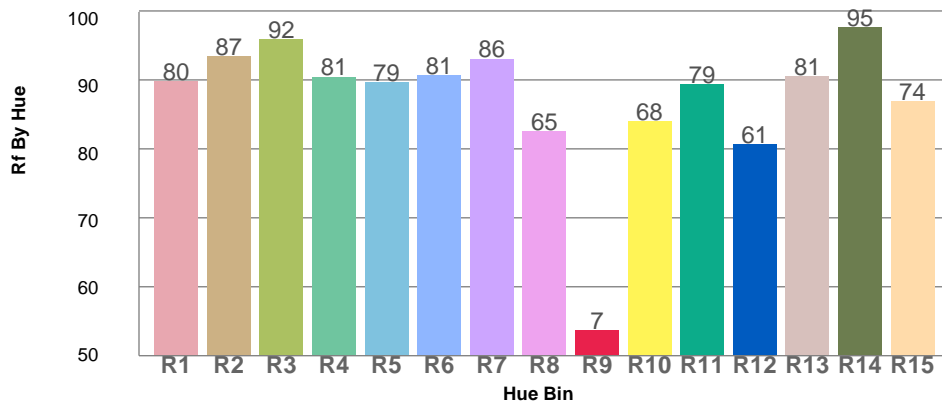
**R<sub>f</sub> 82.8**

GAMUT INDEX

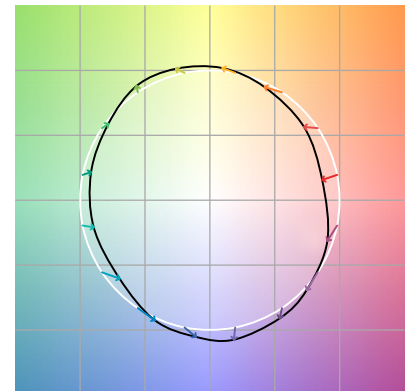
**R<sub>g</sub> 96.3**

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

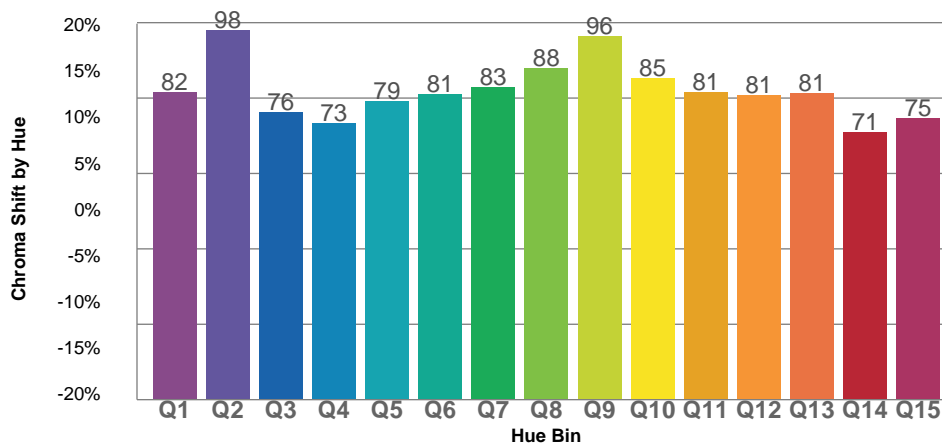
TM30 OVER 50



COLOR VECTOR GRAPHICS



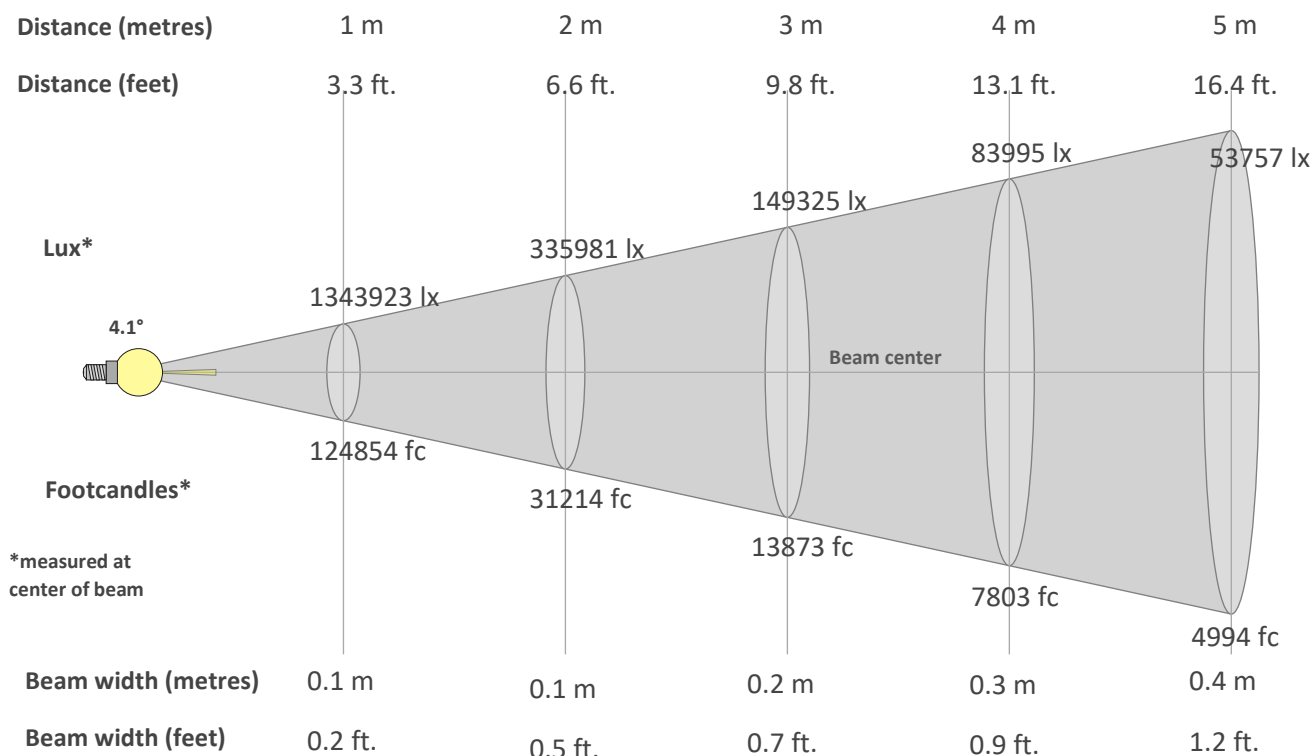
TM30 CHROMA SHIFT



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
1343923lx	335981lx	149325lx	83995lx	53757lx	37331lx	27427lx	20999lx	16592lx	13439lx	11107lx	9333lx	7952lx	6857lx	5973lx	5250lx	4650lx	4148lx	3723lx	3360lx
124854.5fc	31213.6fc	13872.7fc	7803.4fc	4994.2fc	3468.2fc	2548.1fc	1950.9fc	1541.4fc	1248.5fc	1031.9fc	867fc	738.8fc	637fc	554.9fc	487.7fc	432fc	385.4fc	345.9fc	312.1fc

**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°
1.3M	1.1M	0.7M	0.3M	0.2M	0.1M	0.1M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M
100%	85%	52%	25%	13%	8%	5%	3%	2%	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%

**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°
1.3M	1.1M	0.7M	0.3M	0.2M	0.1M	0.1M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M
100%	85%	52%	25%	13%	8%	5%	3%	2%	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%

**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°
1.3M	1.1M	0.7M	0.3M	0.2M	0.1M	0.1M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M
100%	85%	52%	25%	13%	8%	5%	3%	2%	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%

**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°
1.3M	1.1M	0.7M	0.3M	0.2M	0.1M	0.1M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M	0.0M
100%	85%	52%	25%	13%	8%	5%	3%	2%	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%