



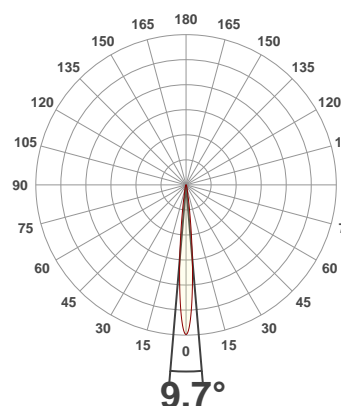
# PRODUCT INFORMATION

SERIAL NUMBER: LL-20190816-511-BMS

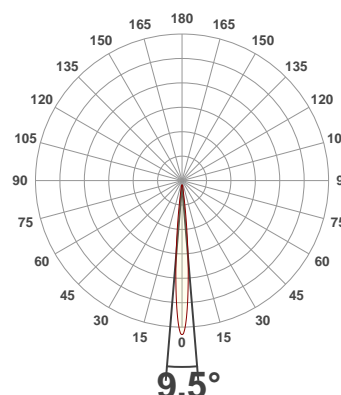
DATE OF MEASUREMENT: 2019-08-16

SIZE (mm): (L x W x H) 298 x 71 x 59.5

# ANGULAR DISTRIBUTION AT C0/180



# ANGULAR DISTRIBUTION AT C90/270



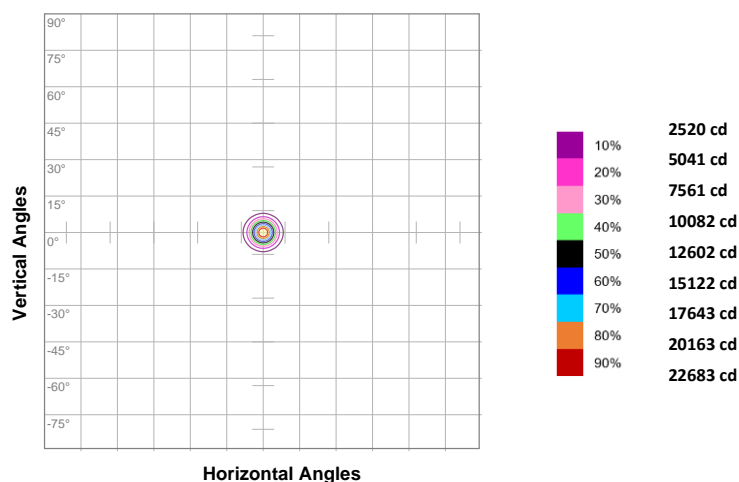
# LIGHT OUTPUT DATA

TOTAL LUMEN OUTPUT: 1103 lm  
EFFICACY: 74 lm/W  
PEAK INTENSITY: 25223 cd  
COLOR RENDERING INDEX (CRI): 83.6  
COLOR TEMPERATURE (CCT): 3724K  
FIDELITY INDEX (TM30Rf): 84.7  
GAMUT INDEX (TM30Rg): 93.5

# BEAM OUTPUT DATA

BEAM ANGLE (FWHM) | C0/180: 9.7°  
BEAM ANGLE (FWHM) | C90/270: 9.5°  
FIELD ANGLE (10%) | C0/180: 18.5°  
FIELD ANGLE (10%) | C90/270: 17.7°  
NUMBER OF PLANES MEASURED: 12

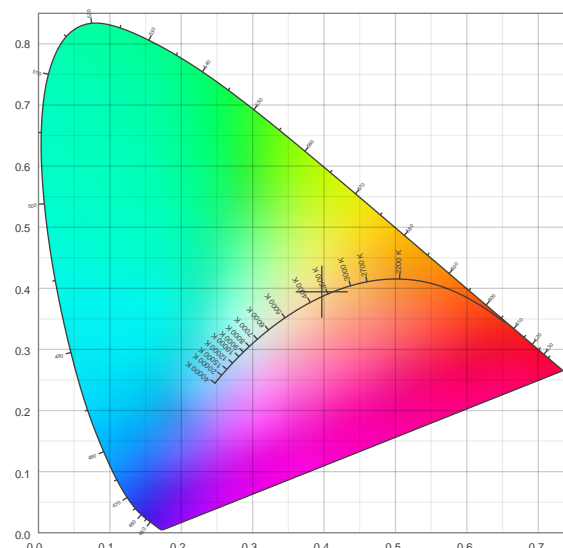
# ISO CANDELA DIAGRAM



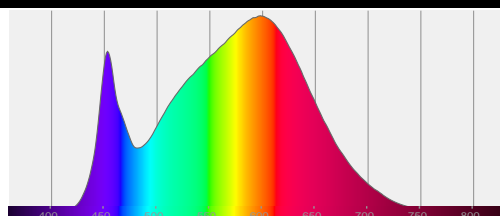
# DATA

INPUT POWER: 14.8 W  
POWER FACTOR: 1.0  
OPTICAL POWER: 3.32 mW  
PEAK WAVELENGTH: 597 nm  
DOMINANT WAVELENGTH: 580 nm

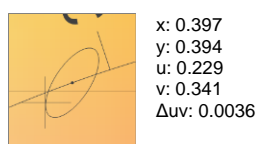
# CIE 1931:



# SPECTRA



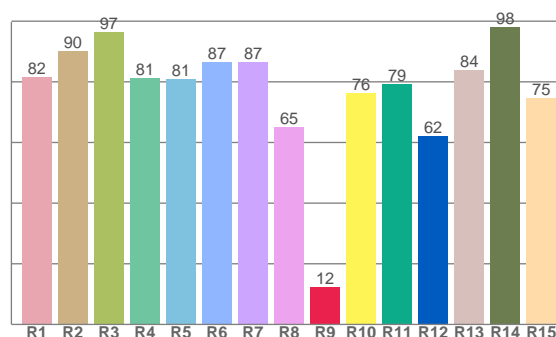
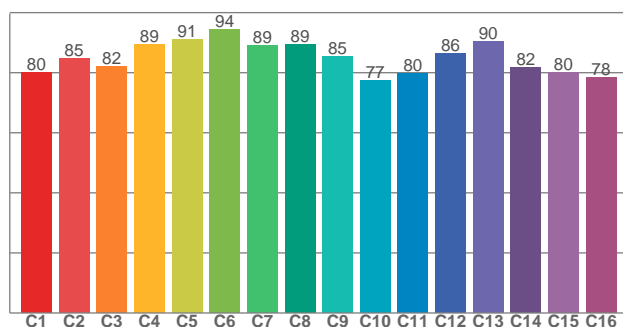
# CIE 1931 ZOOM



x: 0.397  
y: 0.394  
u: 0.229  
v: 0.341  
 $\Delta u_v$ : 0.0036

**ZONAL LUMEN SUMMARY**

0°-10° 771 lm	10°-20° 190 lm	20°-30° 83.7 lm	30°-40° 38.5 lm	40°-50° 16.2 lm	50°-60° 2.97 lm	60°-70° 0.212 lm	70°-80° 0.023 lm	80°-90° 0.011 lm
90°-100° 0.003 lm	100°-110° 0.003 lm	110°-120° 0.002 lm	120°-130° 0.001 lm	130°-140° 0.000 lm	140°-150° 0.000 lm	150°-160° 0.000 lm	160°-170° 0.000 lm	170°-180° 0.000 lm

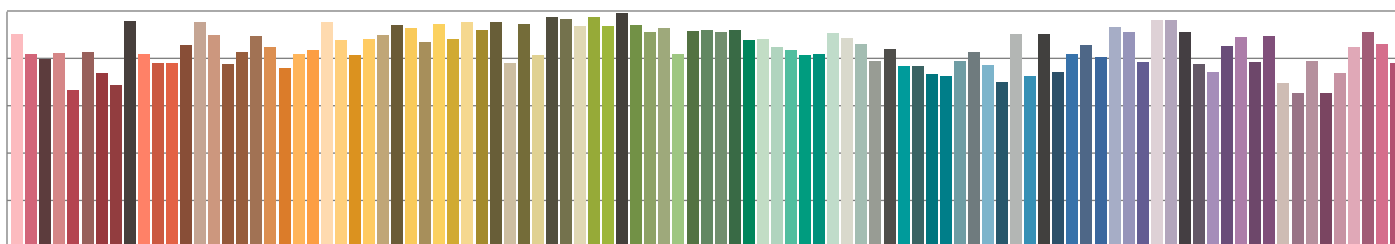
**COLOR DETAILS**
**TM30: 84.7**
**CRI: 83.6 (R1-R8)**


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

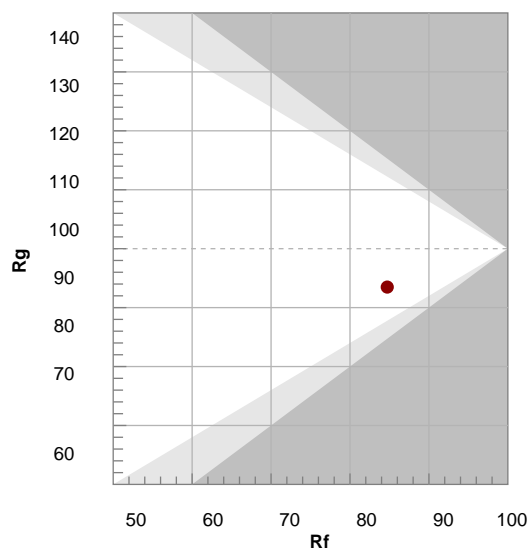
CRI R values, only R1-R8 are used to calculate final CRI value

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
80.1	84.7	82.1	89.4	91.2	94.4	88.9	89.2	85.3	77.2	79.8	86.3	90.3	81.8	80.1	78.3

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
81.6	90.3	96.6	81.2	80.9	86.5	86.7	65.0	12.4	76.4	79.3	62.2	83.8	98.2	74.6

**TM30 COLOR EVALUATION SAMPLE**

**TM30 DETAILS**

Hue Bin	$R_f$	Graphic shifts (%)	
		Chroma	Hue
1	80	-11%	0%
2	85	-7%	5%
3	82	-4%	8%
4	89	-2%	4%
5	91	-3%	2%
6	94	-2%	-1%
7	89	-7%	-1%
8	89	-6%	2%
9	85	-6%	8%
10	77	-5%	15%
11	80	3%	14%
12	86	6%	3%
13	90	3%	-5%
14	82	5%	-14%
15	80	-3%	-13%
16	78	-7%	-11%

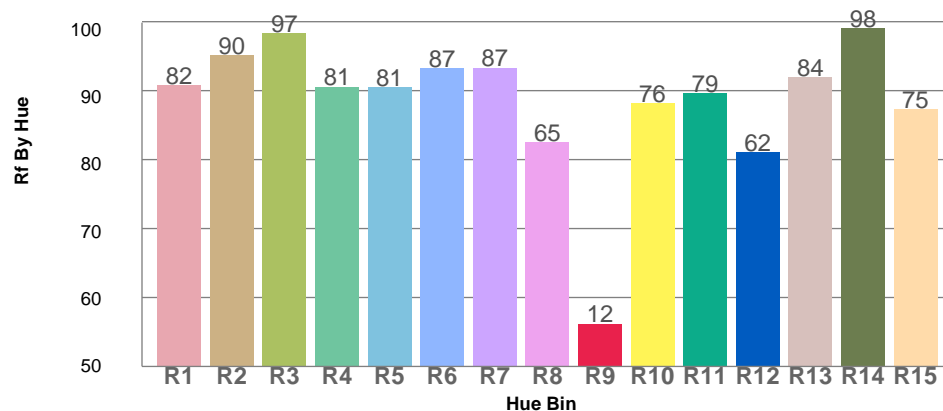


FIDELITY INDEX  
 **$R_f$  84.7**

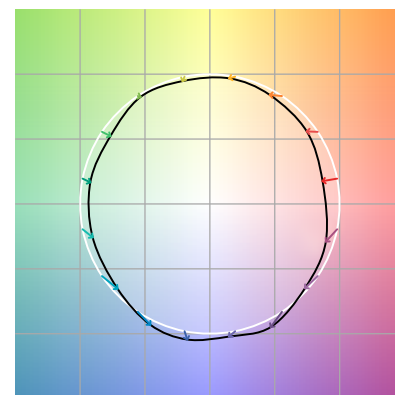
GAMUT INDEX  
 **$R_g$  93.5**

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

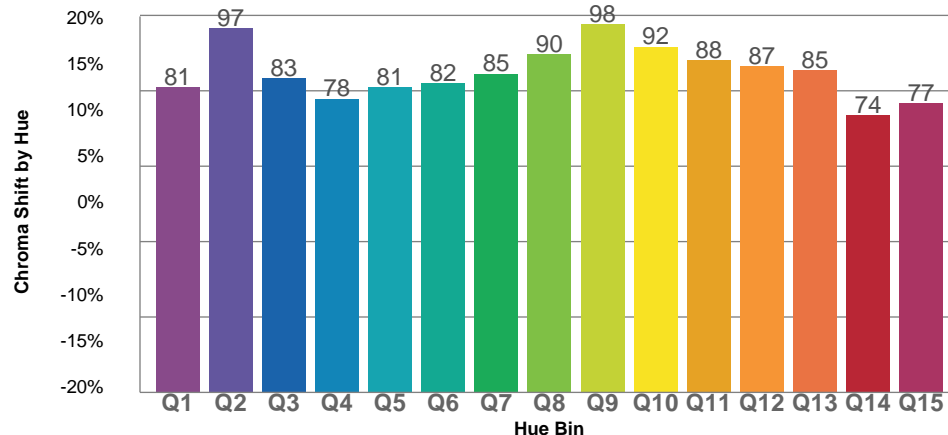
TM30 OVER 50



COLOR VECTOR GRAPHICS



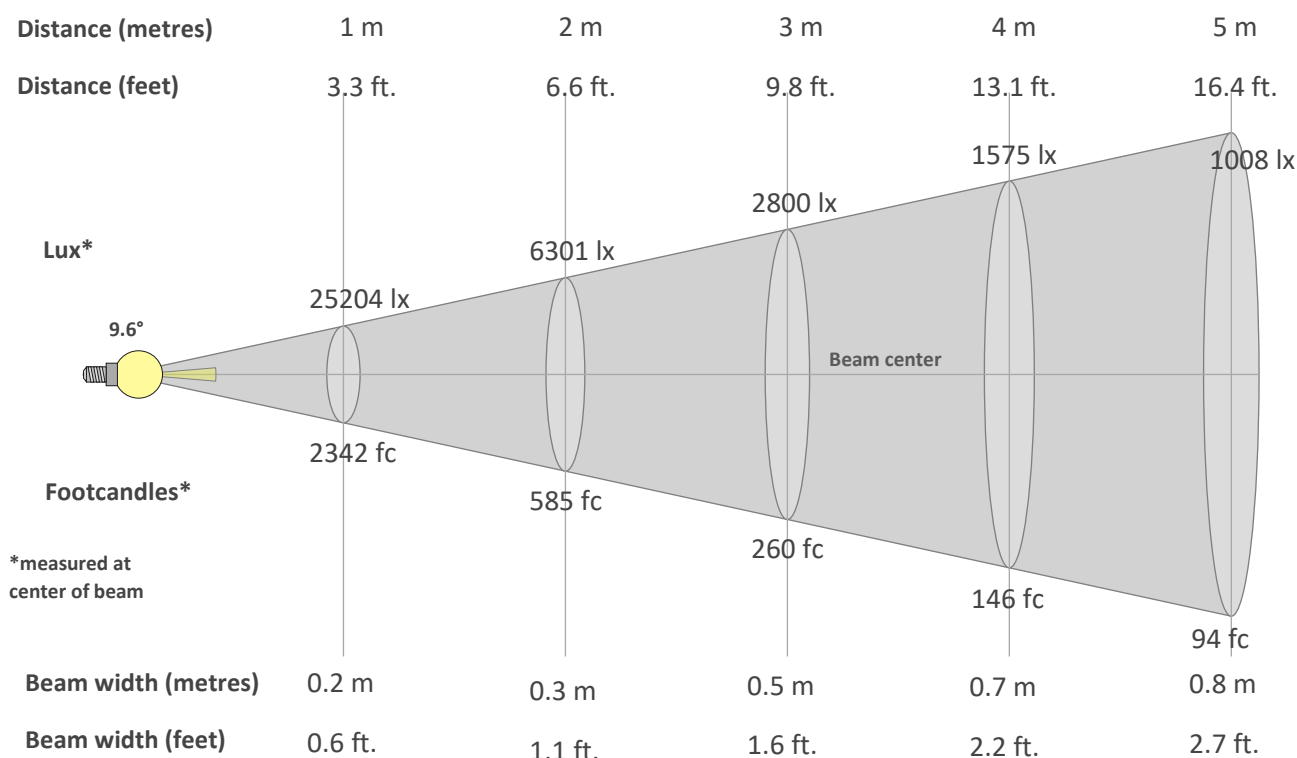
TM30 CHROMA SHIFT



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
25204lx	6301lx	2800lx	1575lx	1008lx	700lx	514lx	394lx	311lx	252lx	208lx	175lx	149lx	129lx	112lx	98lx	87lx	78lx	70lx	63lx
2341.5fc	585.4fc	260.2fc	146.3fc	93.7fc	65fc	47.8fc	36.6fc	28.9fc	23.4fc	19.4fc	16.3fc	13.9fc	11.9fc	10.4fc	9.1fc	8.1fc	7.2fc	6.5fc	5.9fc

## 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°
25.2K	24.4K	22.3K	19.2K	15.6K	12.0K	8.8K	6.1K	4.1K	2.8K	1.9K	1.4K	1.1K	0.9K	0.8K	0.7K	0.6K	0.5K	0.4K	0.4K
100%	97%	89%	76%	62%	48%	35%	24%	16%	11%	8%	6%	4%	4%	3%	3%	2%	2%	2%	2%

## 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°
25.2K	24.4K	22.2K	19.0K	15.3K	11.7K	8.3K	5.6K	3.7K	2.4K	1.6K	1.2K	0.9K	0.8K	0.7K	0.6K	0.5K	0.5K	0.4K	0.4K
100%	97%	88%	75%	61%	46%	33%	22%	14%	9%	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°
25.2K	24.4K	22.3K	19.2K	15.6K	12.0K	8.8K	6.1K	4.1K	2.8K	1.9K	1.4K	1.1K	0.9K	0.8K	0.7K	0.6K	0.5K	0.4K	0.4K
100%	97%	89%	76%	62%	48%	35%	24%	16%	11%	8%	6%	4%	4%	3%	3%	2%	2%	2%	2%

## 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°
25.2K	24.4K	22.2K	19.0K	15.3K	11.7K	8.3K	5.6K	3.7K	2.4K	1.6K	1.2K	0.9K	0.8K	0.7K	0.6K	0.5K	0.5K	0.4K	0.4K
100%	97%	88%	75%	61%	46%	33%	22%	14%	9%	6%	5%	4%	3%	3%	2%	2%	2%	2%	1%