



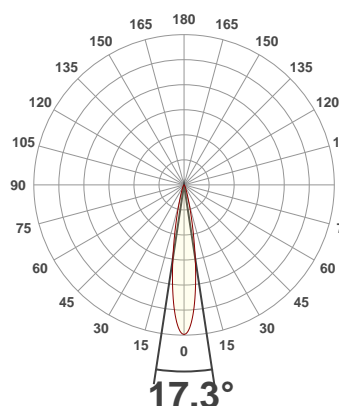
# PRODUCT INFORMATION

SERIAL NUMBER: LL-20190725-397-BMS

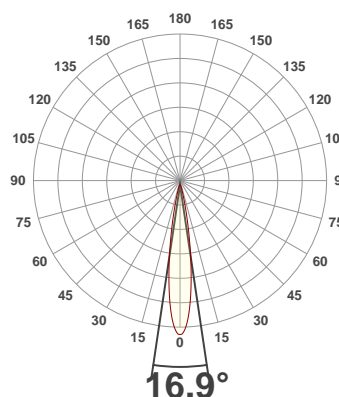
DATE OF MEASUREMENT: 2019-07-25

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

## ANGULAR DISTRIBUTION AT C0/180



## ANGULAR DISTRIBUTION AT C90/270



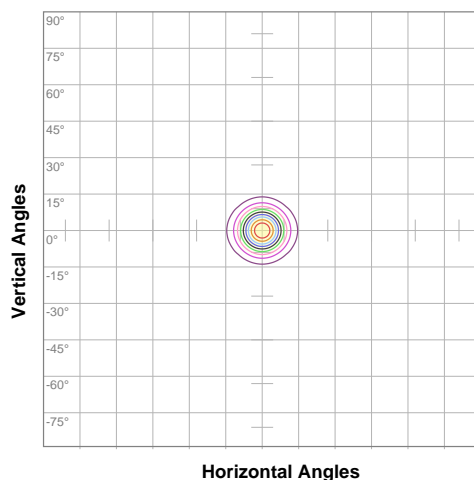
## LIGHT OUTPUT DATA

TOTAL LUMEN OUTPUT: 1163 lm  
EFFICACY: 77 lm/W  
PEAK INTENSITY: 9406 cd  
COLOR RENDERING INDEX (CRI): 83.8  
COLOR TEMPERATURE (CCT): 3769K  
FIDELITY INDEX (TM30Rf): 84.7  
GAMUT INDEX (TM30Rg): 93.6

## BEAM OUTPUT DATA

BEAM ANGLE (FWHM) | C0/180: 17.3°  
BEAM ANGLE (FWHM) | C90/270: 16.9°  
FIELD ANGLE (10%) | C0/180: 32.7°  
FIELD ANGLE (10%) | C90/270: 31°  
NUMBER OF PLANES MEASURED: 12

## ISO CANDELA DIAGRAM

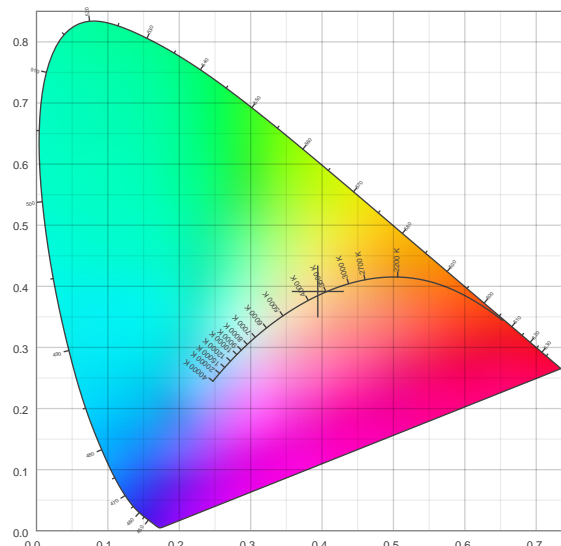


10% 940 cd  
20% 1880 cd  
30% 2820 cd  
40% 3759 cd  
50% 4699 cd  
60% 5639 cd  
70% 6579 cd  
80% 7519 cd  
90% 8459 cd

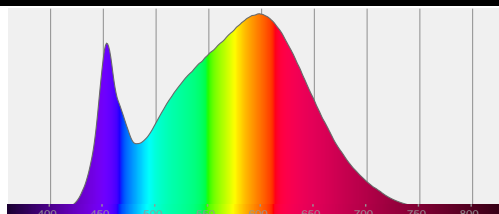
## DATA

INPUT POWER: 15.1 W  
POWER FACTOR: 1.0  
OPTICAL POWER: 3.52 mW  
PEAK WAVELENGTH: 597 nm  
DOMINANT WAVELENGTH: 580 nm

## CIE 1931:



## SPECTRA

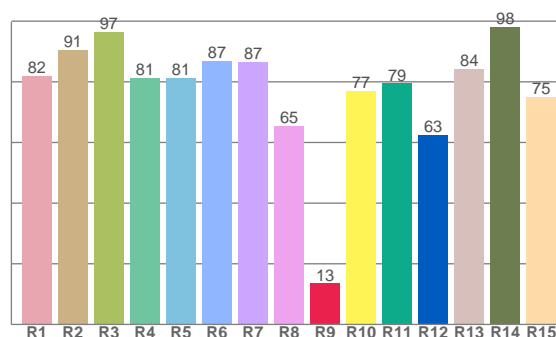
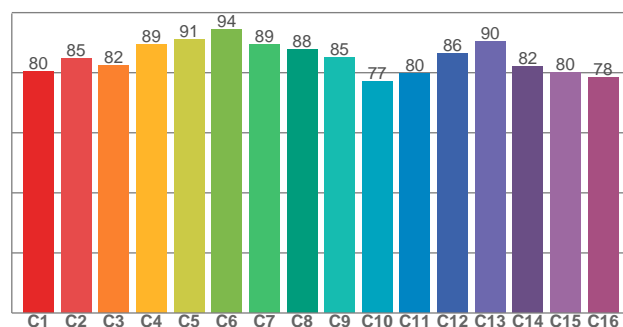


## CIE 1931 ZOOM

x: 0.394  
y: 0.392  
u: 0.228  
v: 0.340  
Δuv: 0.0031

**ZONAL LUMEN SUMMARY**

0°-10° 580 lm	10°-20° 356 lm	20°-30° 112 lm	30°-40° 57.4 lm	40°-50° 32.5 lm	50°-60° 16.9 lm	60°-70° 6.88 lm	70°-80° 1.41 lm	80°-90° 0.072 lm
90°-100° 0.009 lm	100°-110° 0.006 lm	110°-120° 0.005 lm	120°-130° 0.005 lm	130°-140° 0.003 lm	140°-150° 0.001 lm	150°-160° 0.001 lm	160°-170° 0.001 lm	170°-180° 0.000 lm

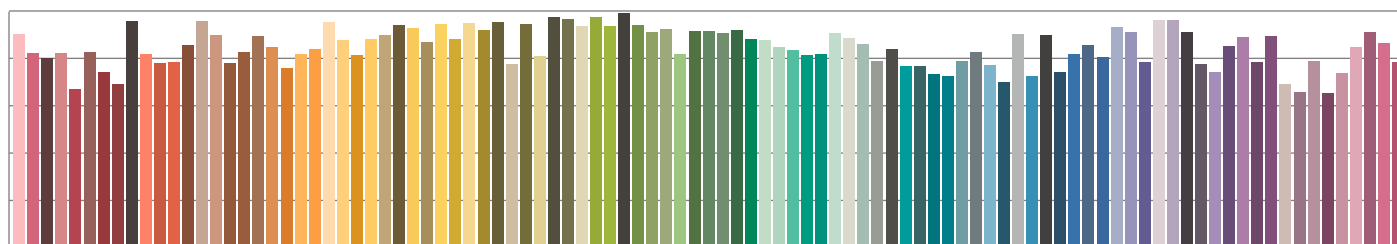
**COLOR DETAILS**
**TM30: 84.7**
**CRI: 83.8 (R1-R8)**


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

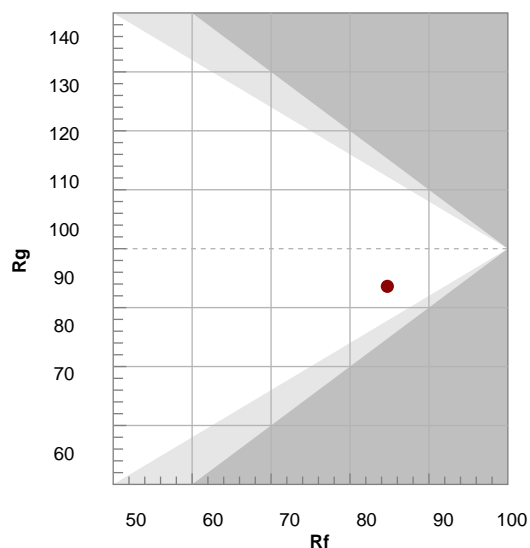
C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
80.2	84.8	82.3	89.4	91.1	94.4	89.5	87.8	85.2	77.2	79.7	86.3	90.3	81.9	80.2	78.3

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

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
81.9	90.6	96.6	81.3	81.3	86.9	86.6	65.4	13.5	77.1	79.5	62.6	84.2	98.2	75.1

**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	88	-7%	2%
9	85	-6%	8%
10	77	-4%	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%

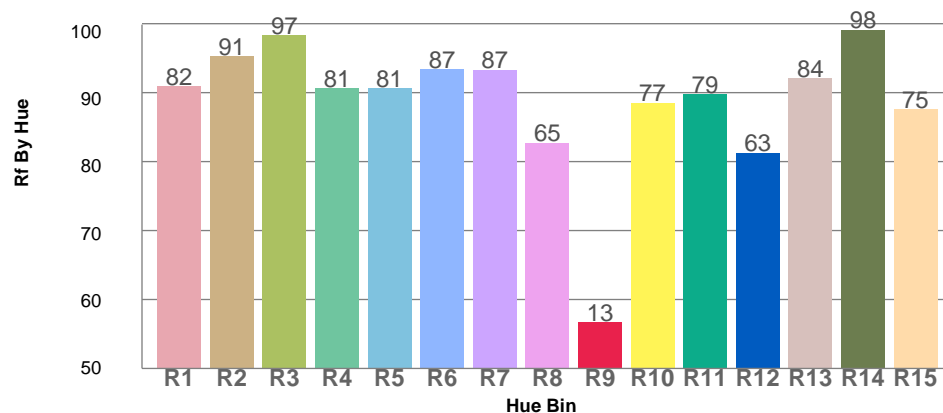


FIDELITY INDEX  
 **$R_f$  84.7**

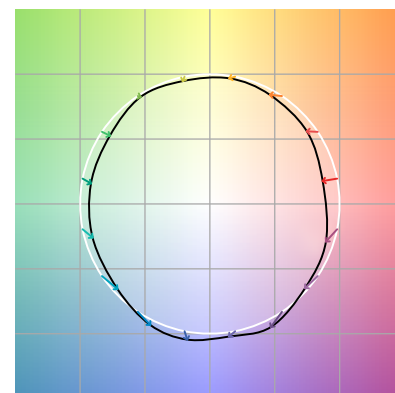
GAMUT INDEX  
 **$R_g$  93.6**

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

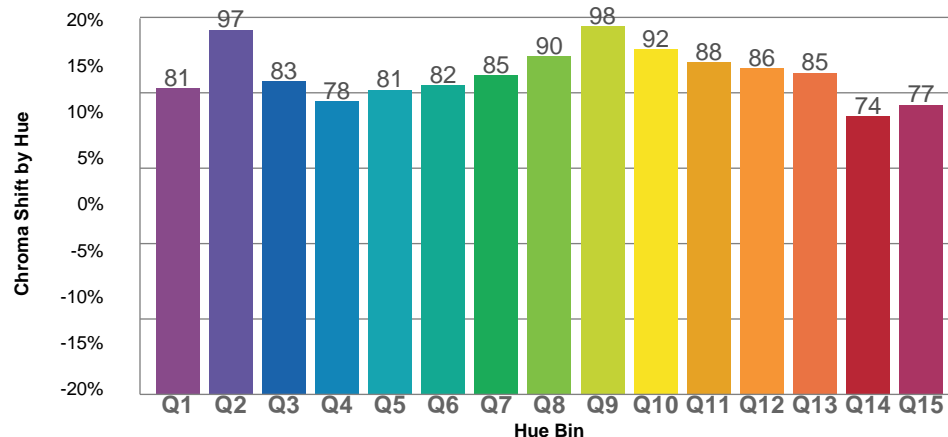
TM30 OVER 50



COLOR VECTOR GRAPHICS



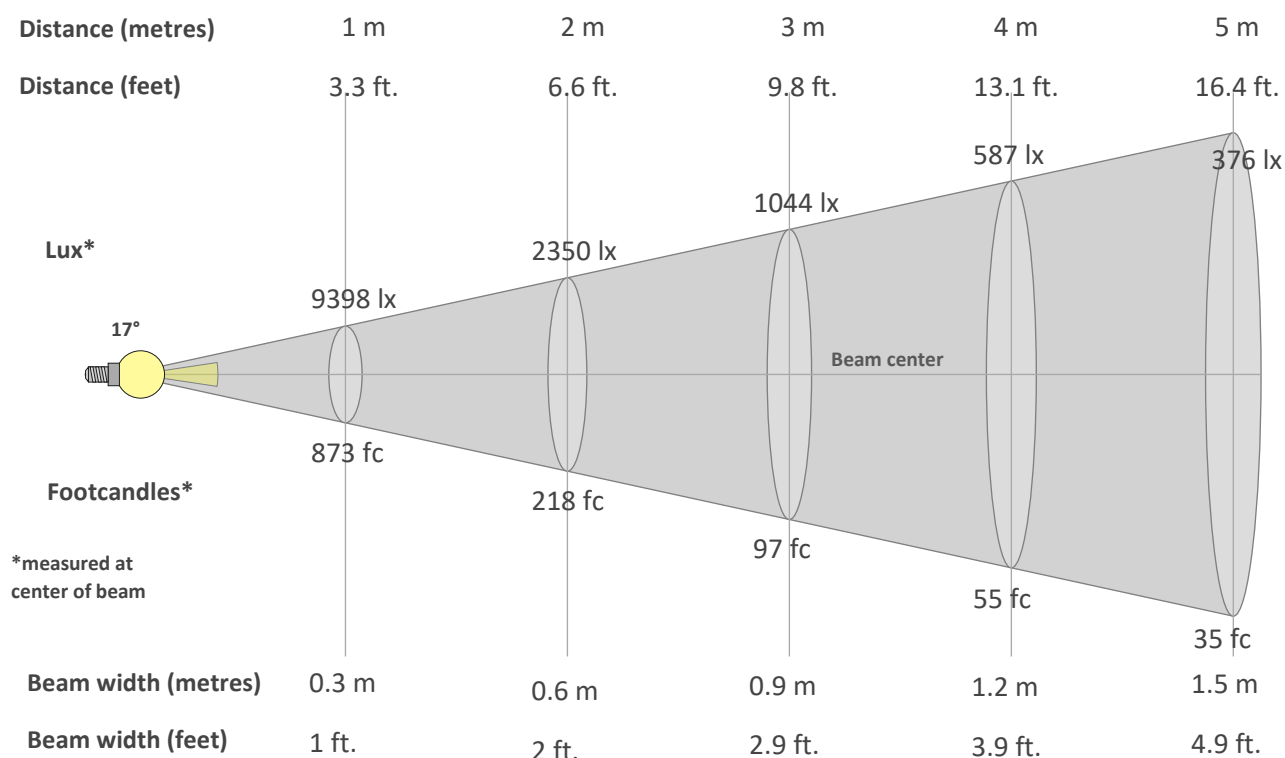
TM30 CHROMA SHIFT



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
9398lx	2350lx	1044lx	587lx	376lx	261lx	192lx	147lx	116lx	94lx	78lx	65lx	56lx	48lx	42lx	37lx	33lx	29lx	26lx	23lx
873.1fc	218.3fc	97fc	54.6fc	34.9fc	24.3fc	17.8fc	13.6fc	10.8fc	8.7fc	7.2fc	6.1fc	5.2fc	4.5fc	3.9fc	3.4fc	3fc	2.7fc	2.4fc	2.2fc

**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°
9398	9324	9078	8673	8142	7506	6769	5984	5191	4413	3679	3015	2433	1951	1559	1247	1005	823	684	575
100%	99%	97%	92%	87%	80%	72%	64%	55%	47%	39%	32%	26%	21%	17%	13%	11%	9%	7%	6%

**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°
9398	9305	9054	8652	8093	7426	6674	5868	5049	4250	3494	2814	2232	1746	1355	1062	840	677	557	472
100%	99%	96%	92%	86%	79%	71%	62%	54%	45%	37%	30%	24%	19%	14%	11%	9%	7%	6%	5%

**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°
9398	9324	9078	8673	8142	7506	6769	5984	5191	4413	3679	3015	2433	1951	1559	1247	1005	823	684	575
100%	99%	97%	92%	87%	80%	72%	64%	55%	47%	39%	32%	26%	21%	17%	13%	11%	9%	7%	6%

**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°
9398	9305	9054	8652	8093	7426	6674	5868	5049	4250	3494	2814	2232	1746	1355	1062	840	677	557	472
100%	99%	96%	92%	86%	79%	71%	62%	54%	45%	37%	30%	24%	19%	14%	11%	9%	7%	6%	5%