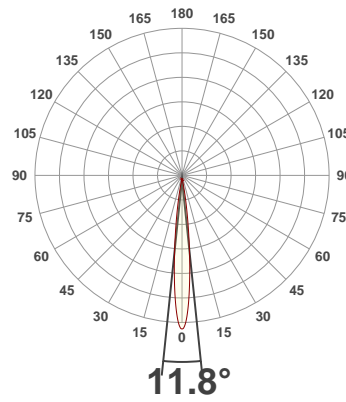
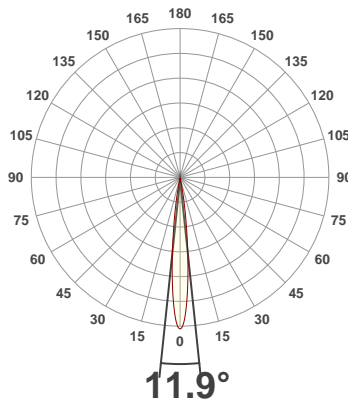




**PRODUCT INFORMATION**

SERIAL NUMBER:	LL-200325-0498
DATE OF MEASUREMENT:	25/03/2020
SIZE (dia. x h):	73 mm x 47 mm

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

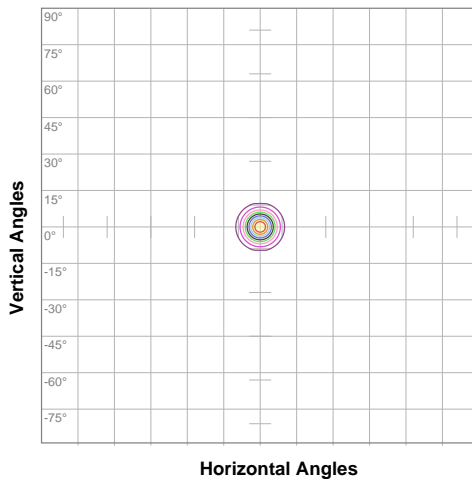


TOTAL LUMEN OUTPUT:	276 lm
EFFICACY:	33 lm/W
PEAK INTENSITY:	5255 cd
COLOR RENDERING INDEX (CRI):	74.1
COLOR TEMPERATURE (CCT):	8033K
FIDELITY INDEX (TM30Rf):	71.7
GAMUT INDEX (TM30Rg):	97.1

**BEAM OUTPUT DATA**

BEAM ANGLE (FWHM)   C0/180:	11.9°
BEAM ANGLE (FWHM)   C90/270:	11.8°
FIELD ANGLE (10%)   C0/180:	22.3°
FIELD ANGLE (10%)   C90/270:	22°
NUMBER OF PLANES MEASURED:	12

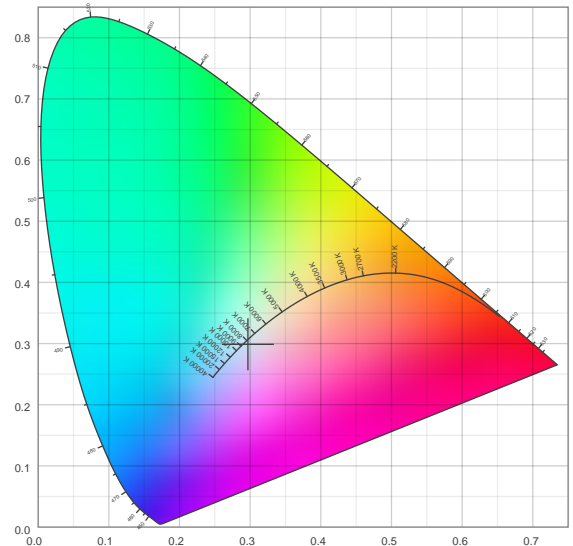
**ISOCANDELA DIAGRAM**



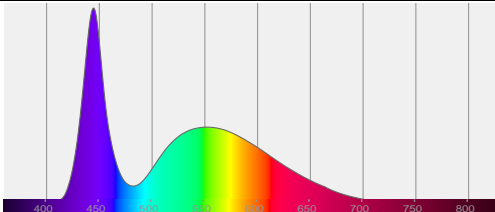
10%	525 cd
20%	1050 cd
30%	1575 cd
40%	2101 cd
50%	2626 cd
60%	3151 cd
70%	3676 cd
80%	4201 cd
90%	4726 cd

INPUT POWER:	8.3 W
POWER FACTOR:	1.0
OPTICAL POWER:	0.936 mW
PEAK WAVELENGTH:	445 nm
DOMINANT WAVELENGTH:	454 nm

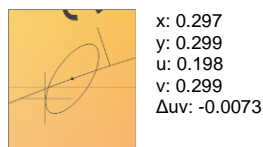
**CIE 1931**



**SPECTRAL DISTRIBUTION**



**CIE 1931 ZOOM**



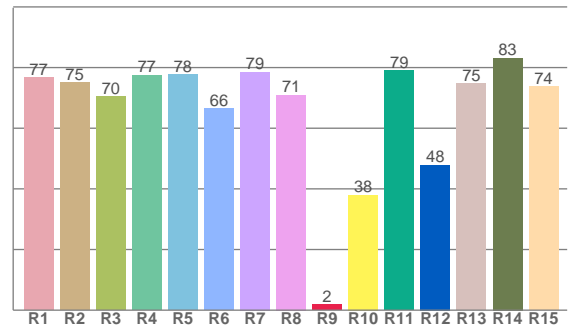
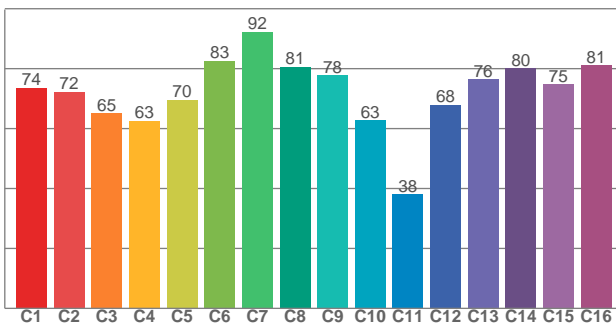
ZONAL LUMEN SUMMARY

0°-10° 221 lm	10°-20° 48.4 lm	20°-30° 5.73 lm	30°-40° 0.895 lm	40°-50° 0.192 lm	50°-60° 0.077 lm	60°-70° 0.042 lm	70°-80° 0.030 lm	80°-90° 0.024 lm
90°-100° 0.006 lm	100°-110° 0.002 lm	110°-120° 0.002 lm	120°-130° 0.001 lm	130°-140° 0.001 lm	140°-150° 0.001 lm	150°-160° 0.001 lm	160°-170° 0.000 lm	170°-180° 0.000 lm

COLOR DETAILS

TM30: 71.7

CRI: 74.1 (R1-R8)



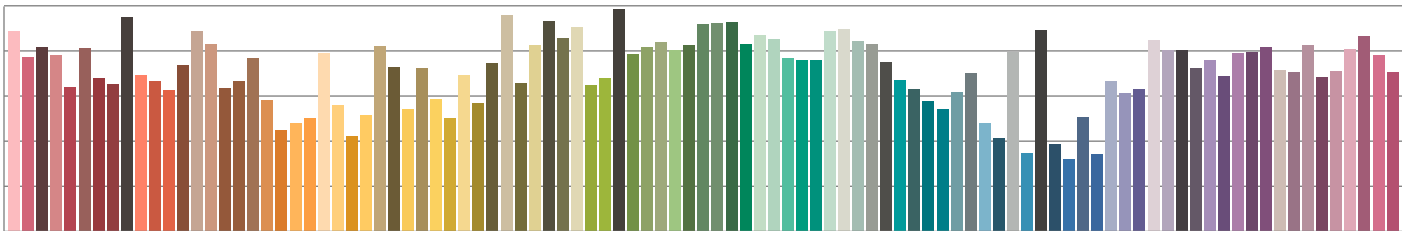
TM30 C values, 16 binned values out of total of 99 C values

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
73.6	72.2	65.1	62.6	69.6	82.6	92.3	80.6	77.8	62.8	38.2	67.9	76.5	80.0	74.7	81.0

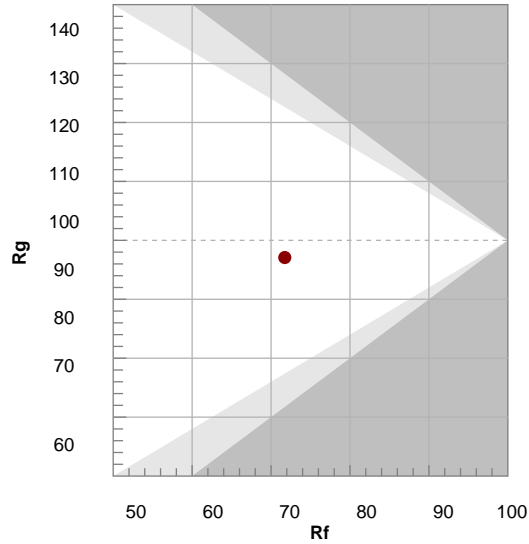
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
76.6	75.1	70.4	77.5	77.7	66.5	78.5	70.9	1.8	38.0	79.1	47.8	74.7	83.2	73.7

TM30 COLOR EVALUATION SAMPLE



TM30 DETAILS

Hue Bin	R <sub>f</sub>	Graphic shifts (%)	
		Chroma	Hue
1	74	-14%	-4%
2	72	-12%	10%
3	65	-6%	22%
4	63	4%	23%
5	70	13%	14%
6	83	11%	0%
7	92	1%	-5%
8	81	-8%	-8%
9	78	-22%	11%
10	63	-13%	23%
11	38	-5%	31%
12	68	6%	23%
13	76	14%	12%
14	80	11%	-3%
15	75	11%	-19%
16	81	-3%	-10%



FIDELITY INDEX

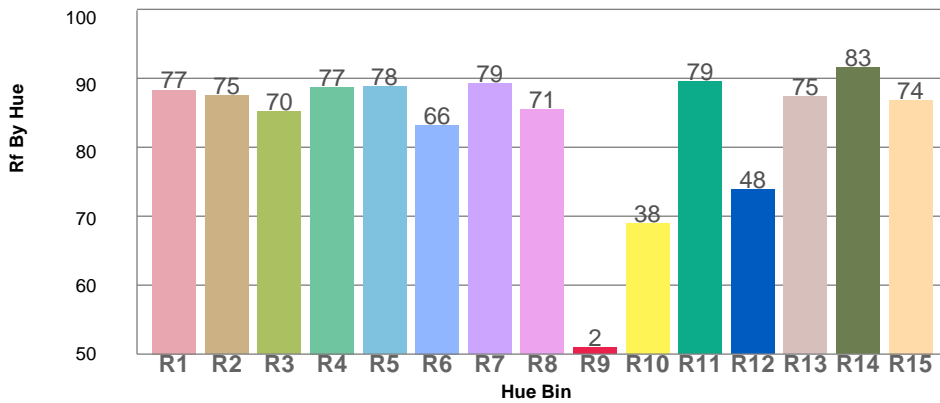
**R<sub>f</sub> 71.7**

GAMUT INDEX

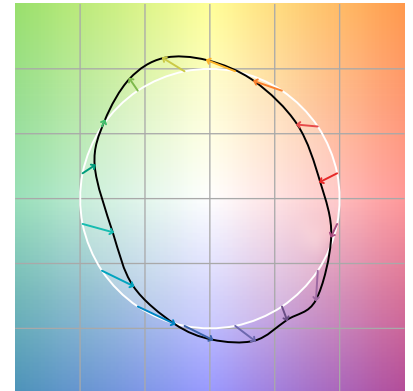
**R<sub>g</sub> 97.1**

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

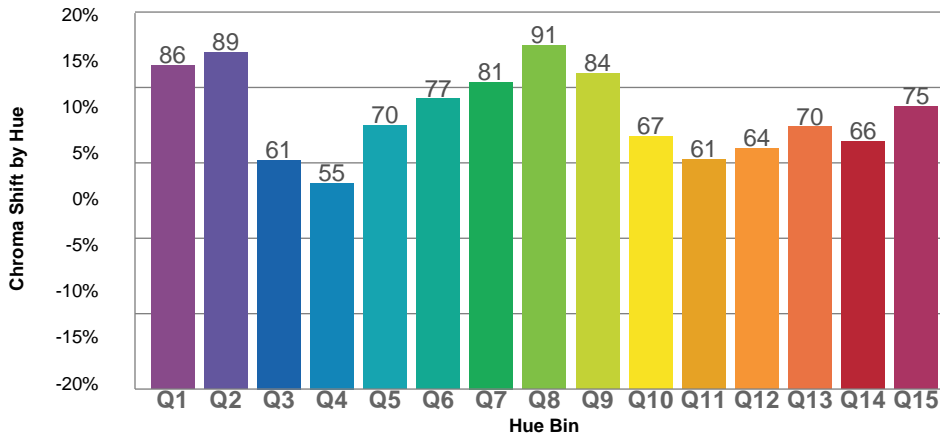
TM30 OVER 50



COLOR VECTOR GRAPHICS



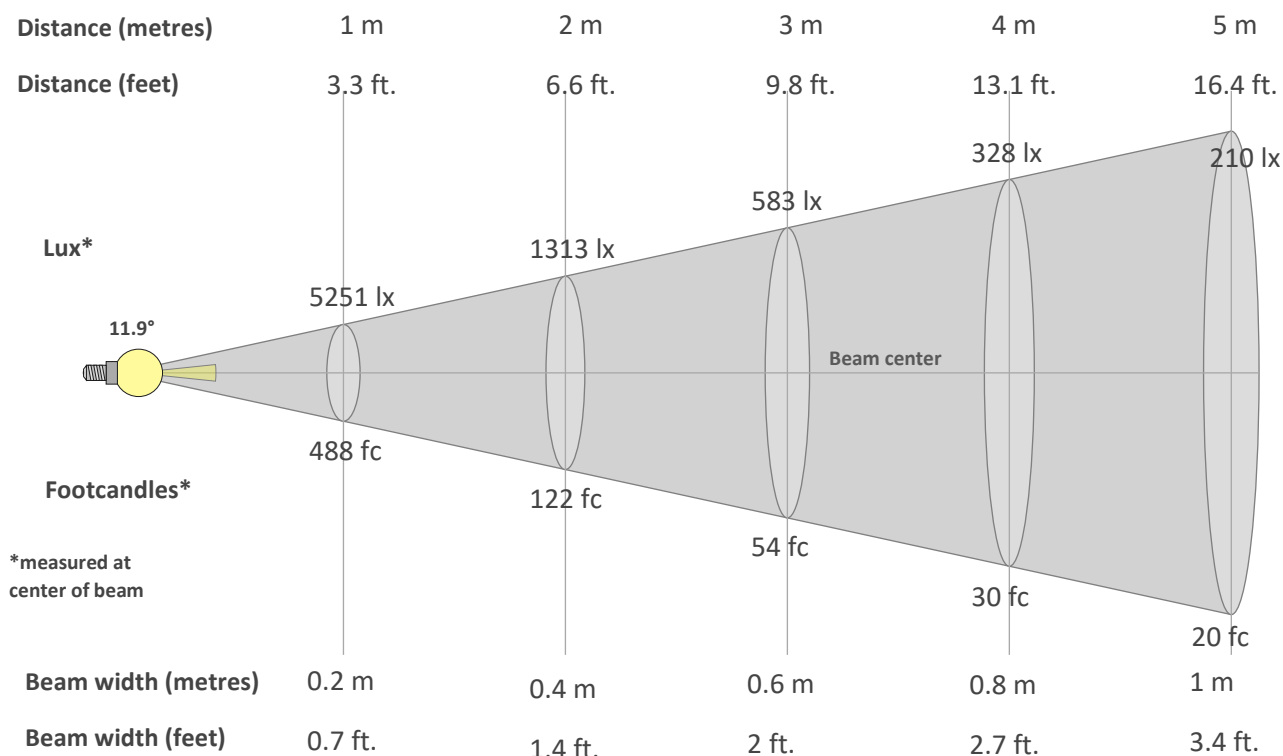
TM30 CHROMA SHIFT



COLOR DISTORTION GRAPHICS



**BEAM DETAILS**



\*measured at center of beam

**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
5251lx	1313lx	583lx	328lx	210lx	146lx	107lx	82lx	65lx	53lx	43lx	36lx	31lx	27lx	23lx	21lx	18lx	16lx	15lx	13lx
487.9fc	122fc	54.2fc	30.5fc	19.5fc	13.6fc	10fc	7.6fc	6fc	4.9fc	4fc	3.4fc	2.9fc	2.5fc	2.2fc	1.9fc	1.7fc	1.5fc	1.4fc	1.2fc

**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°
5251	5151	4852	4388	3827	3218	2603	2034	1545	1137	807	560	384	261	177	124	89	67	51	40
100%	98%	92%	84%	73%	61%	50%	39%	29%	22%	15%	11%	7%	5%	3%	2%	2%	1%	1%	1%

**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°
5251	5146	4845	4377	3802	3180	2563	1992	1496	1086	763	523	351	234	156	108	78	60	46	37
100%	98%	92%	83%	72%	61%	49%	38%	28%	21%	15%	10%	7%	4%	3%	2%	1%	1%	1%	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°
5251	5151	4852	4388	3827	3218	2603	2034	1545	1137	807	560	384	261	177	124	89	67	51	40
100%	98%	92%	84%	73%	61%	50%	39%	29%	22%	15%	11%	7%	5%	3%	2%	2%	1%	1%	1%

**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°
5251	5146	4845	4377	3802	3180	2563	1992	1496	1086	763	523	351	234	156	108	78	60	46	37
100%	98%	92%	83%	72%	61%	49%	38%	28%	21%	15%	10%	7%	4%	3%	2%	1%	1%	1%	1%