

Light efficiency:



Light quality:



Color temperature:

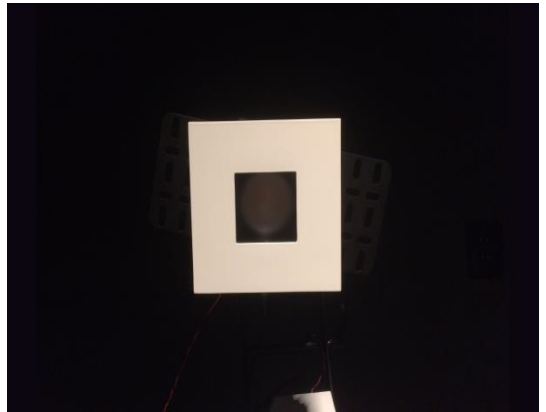


Output: 808 lm

Peak: 1640 cd

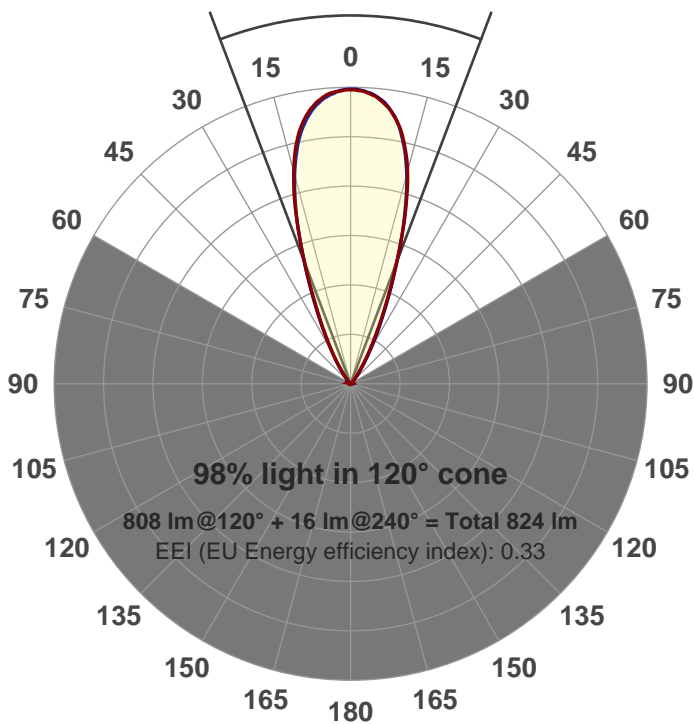
Power: 21.1 W

PF: 0.99



Beam angle

41.5°



Product name:

GRF-CZ20-WF-SQ-91A

Item number:

GRF-CZ20-WF-SQ-91A

Date and time:

3/31/2017 2:45:44 PM

Description:

LUM: 808

PPF: 13.0

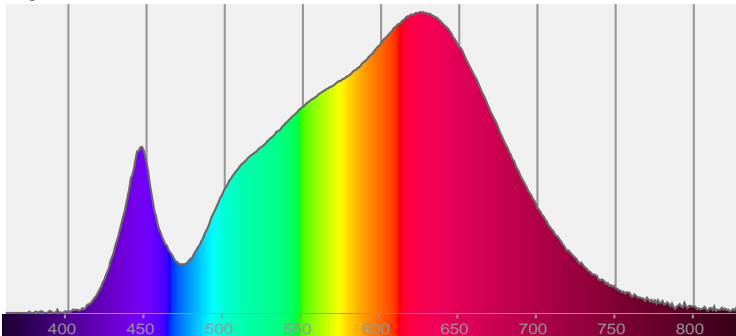


CIE 1931

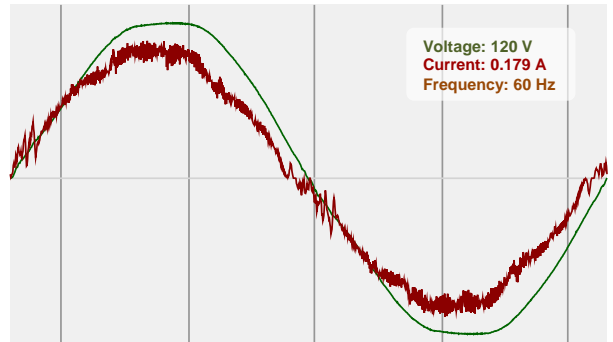
x: 0.429

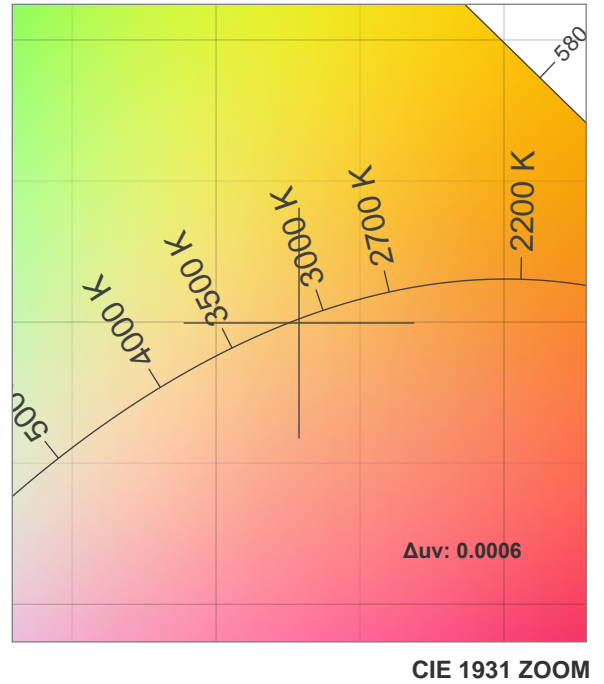
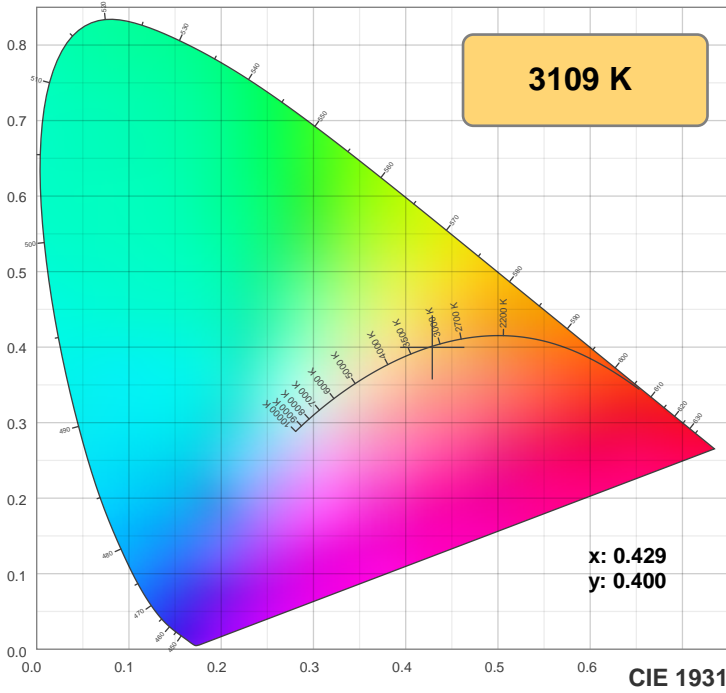
y: 0.400

Spectra



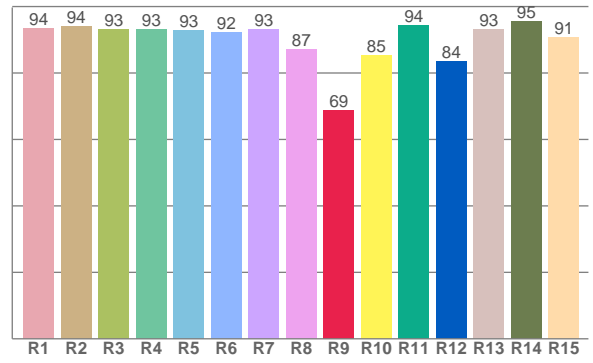
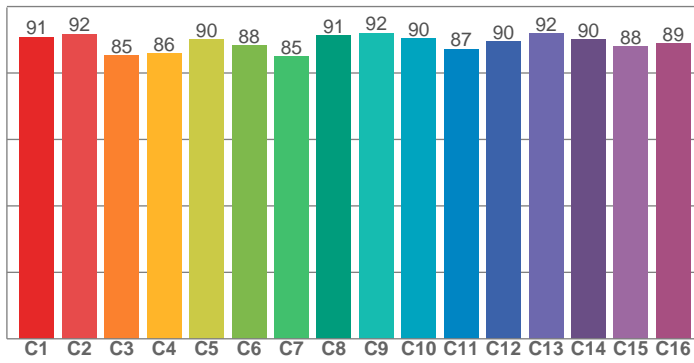
Power





**TM30: 89.2**

**CRI: 92.4 (R1-R8)**



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
93.5	94.0	93.1	93.1	92.7	92.2	93.2	87.2	68.9	85.3	94.2	83.6	93.3	95.5	90.8

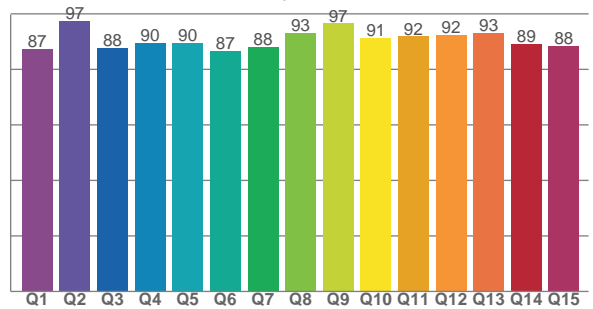
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
90.9	91.7	85.3	85.8	90.0	88.4	85.0	91.3	92.1	90.4	87.2	89.5	91.9	90.1	88.0	88.9

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
87.5	97.3	87.7	89.6	89.6	86.6	88.0	93.0	96.5	91.4	91.8	92.4	93.3	89.1	88.3

**CQS: 90.2**



## Color parameters

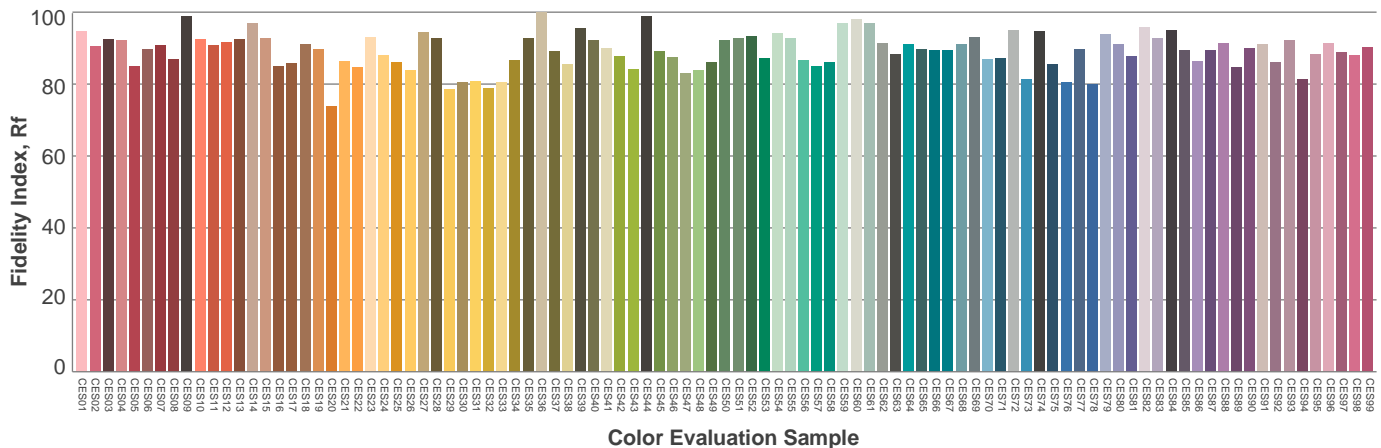
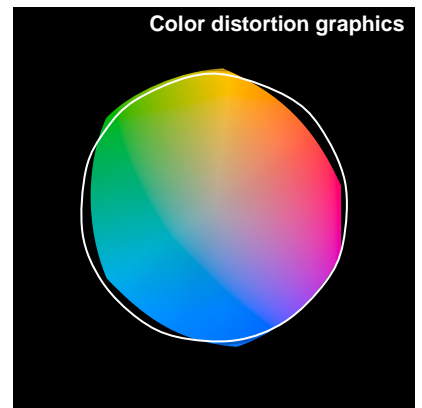
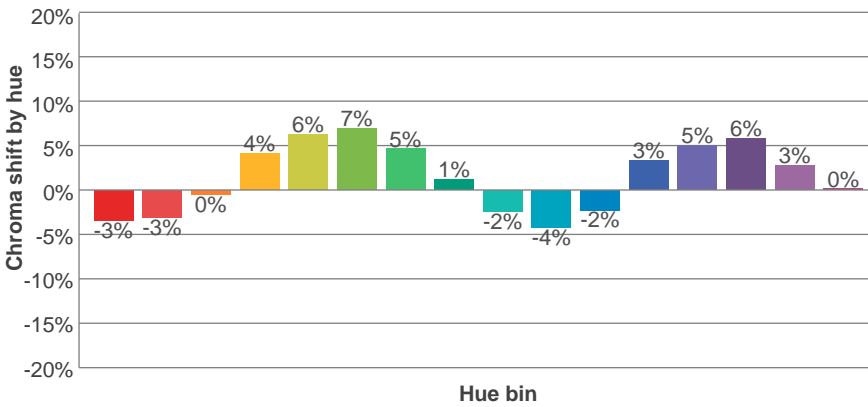
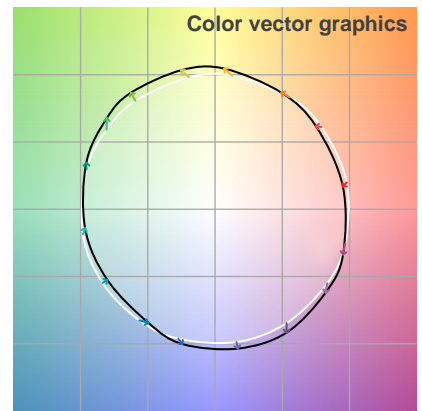
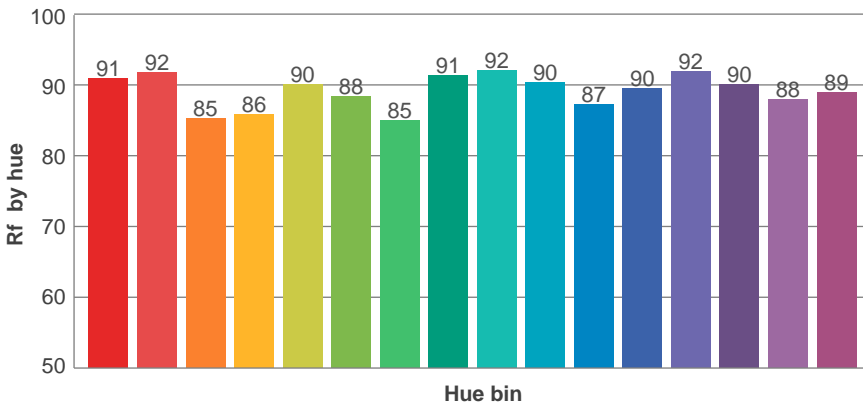
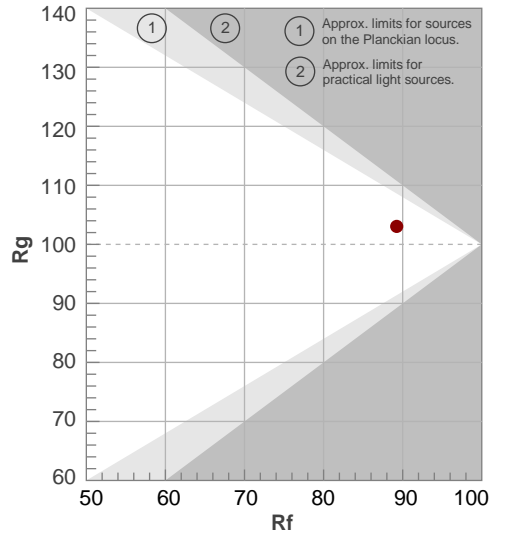
Color temperature	Color rendering index	Red component	Color fidelity	Color gamut	Color quality scale	Color coordinate cie 1931	Color coordinate cie 1931	Color coordinate	Color coordinate	Color deviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	$\Delta uv$
3109 K	92.4	68.9	89.2	103.0	90.2	0.429	0.400	0.247	0.346	0.0006

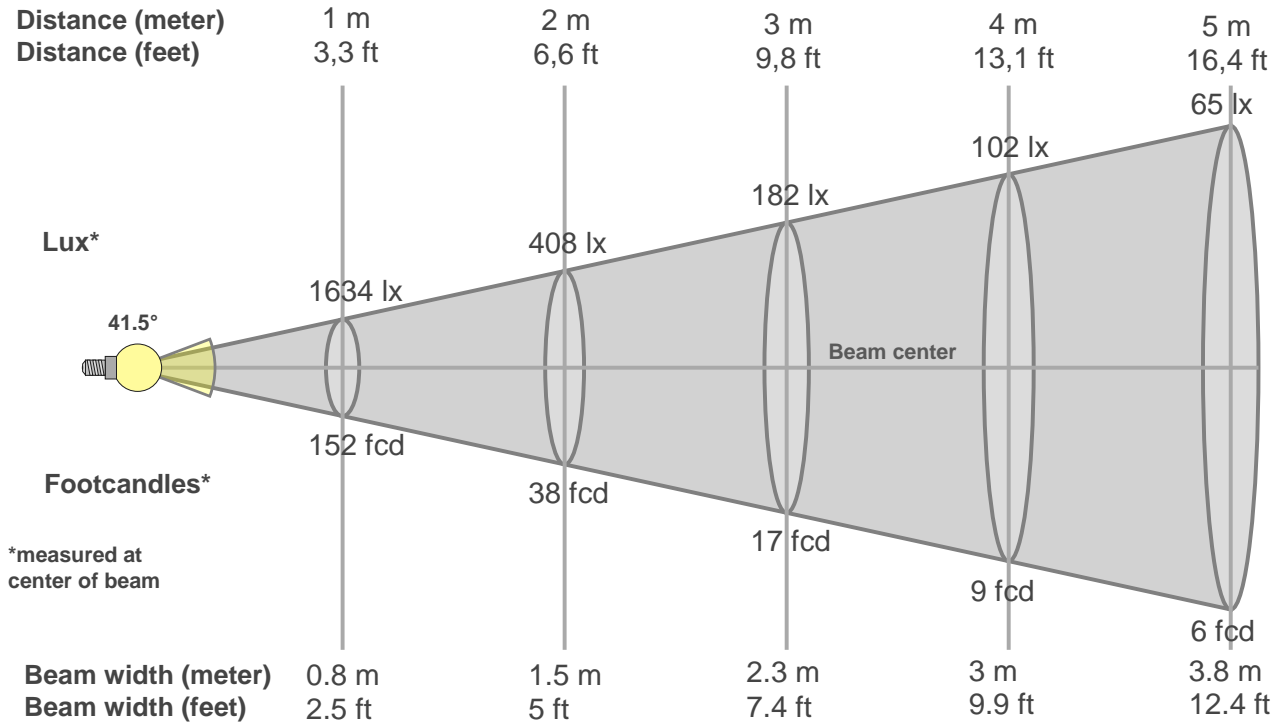
# TM30 details

**Rf 89.2**  
Fidelity index Rf

**Rg 103.0**  
Gammut index Rg

Hue Bin	R <sub>f</sub>	Graphic shifts (%)	
		Chroma	Hue
1	91	-3%	-3%
2	92	-3%	3%
3	85	0%	7%
4	86	4%	7%
5	90	6%	5%
6	88	7%	0%
7	85	5%	-7%
8	91	1%	-5%
9	92	-2%	-4%
10	90	-4%	0%
11	87	-2%	7%
12	90	3%	4%
13	92	5%	0%
14	90	6%	-4%
15	88	3%	-6%
16	89	0%	-8%





### Beam intensities 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
1634lx	408lx	182lx	102lx	65lx	45lx	33lx	26lx	20lx	16lx	14lx	11lx	10lx	8lx	7lx	6lx	6lx	5lx	5lx	4lx
151.8fcd	37.9fcd	16.9fcd	9.5fcd	6.1fcd	4.2fcd	3.1fcd	2.4fcd	1.9fcd	1.5fcd	1.3fcd	1.1fcd	0.9fcd	0.8fcd	0.7fcd	0.6fcd	0.5fcd	0.5fcd	0.4fcd	0.4fcd

### Intensities in 0° c-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
1634	1625	1617	1589	1548	1488	1404	1289	1145	973	789	619	473	364	274	205	150	107	75	52
100%	99%	99%	97%	95%	91%	86%	79%	70%	60%	48%	38%	29%	22%	17%	13%	9%	7%	5%	3%

### Intensities in 90° c-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
1634	1629	1608	1578	1533	1467	1382	1266	1127	966	791	631	490	377	283	210	153	109	77	54
100%	100%	98%	97%	94%	90%	85%	77%	69%	59%	48%	39%	30%	23%	17%	13%	9%	7%	5%	3%

### Intensities in 180° c-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
1634	1626	1610	1582	1541	1479	1397	1288	1147	975	789	621	477	362	270	201	145	103	72	49
100%	100%	99%	97%	94%	91%	85%	79%	70%	60%	48%	38%	29%	22%	17%	12%	9%	6%	4%	3%

### Intensities in 270° c-plane

0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
1634	1630	1615	1587	1543	1481	1386	1270	1127	963	790	631	497	387	297	223	166	120	85	60
100%	100%	99%	97%	94%	91%	85%	78%	69%	59%	48%	39%	30%	24%	18%	14%	10%	7%	5%	4%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
41.5°	64.4°	79.9°	1.0%	1.0%



