

Light efficiency:



Light quality:



Color temperature:



Output: 1017 lm

Peak: 8015 cd

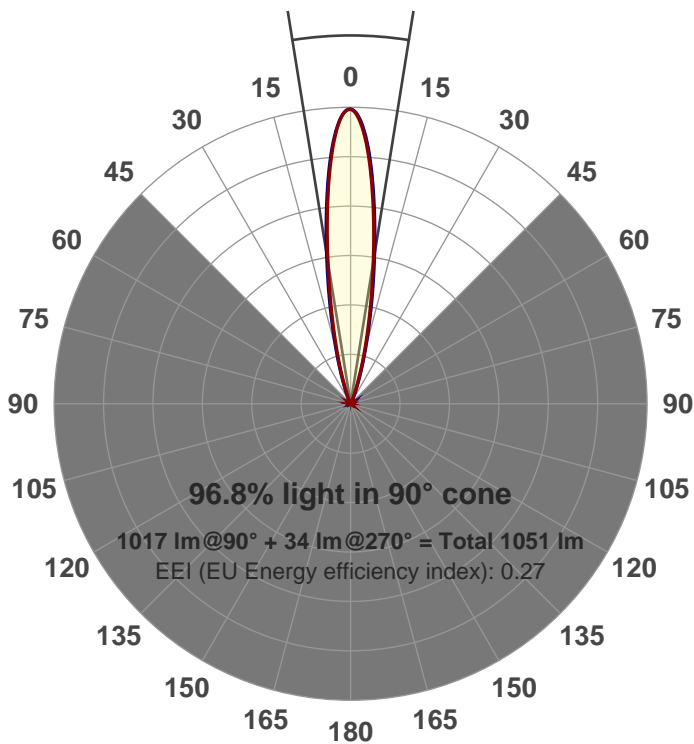
Power: 21.1 W

PF: 0.99



Beam angle

18.2°



Product name:

**GRF-CZ20-SP-RD-91A**

Item number:

**GRF-CZ20-SP-RD-91A**

Date and time:

**6/14/2017 3:58:35 PM**

Description:

**V6**

**LUM: 1017**

**PPF: 17.1**

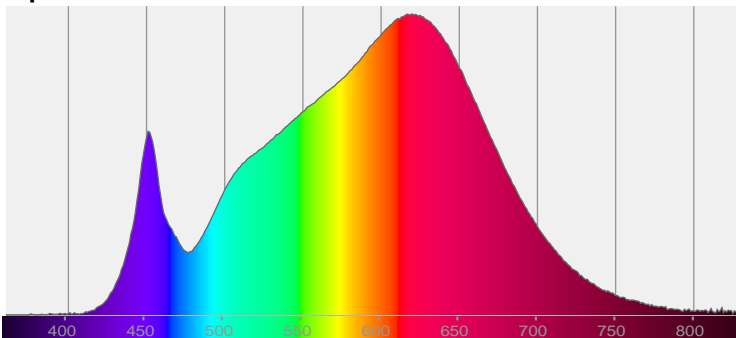


CIE 1931

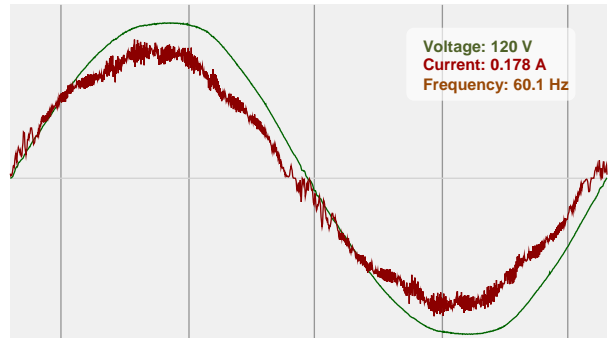
x: 0.429

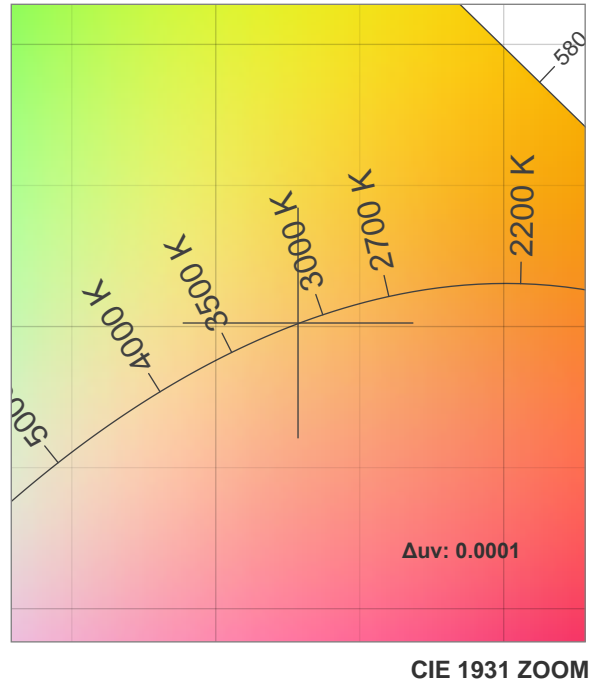
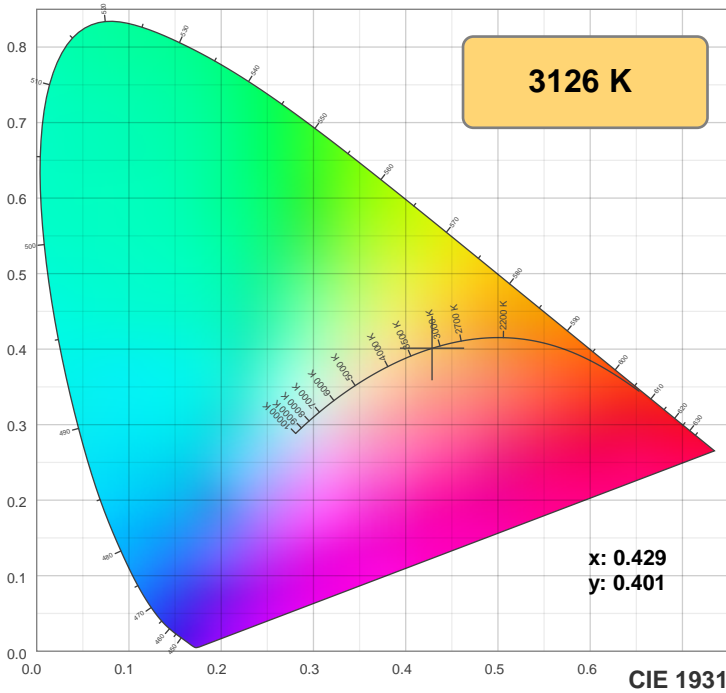
y: 0.401

Spectra

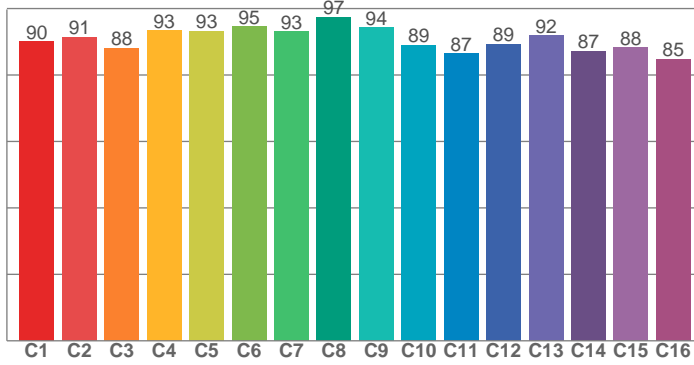


Power

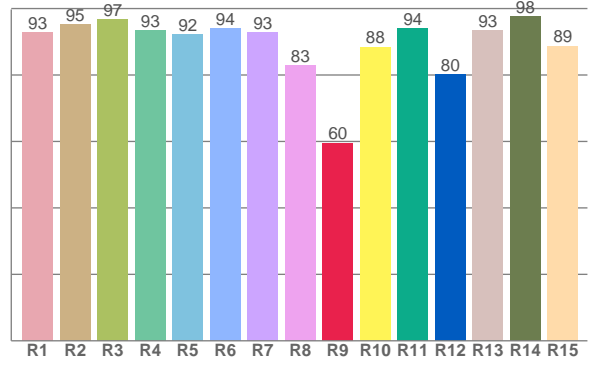




**TM30: 90.8**



**CRI: 92.6 (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
92.7	95.4	96.8	93.4	92.3	94.1	92.9	82.9	59.6	88.5	94.2	80.2	93.4	97.6	88.8

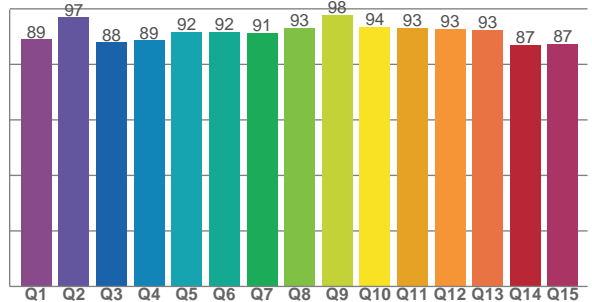
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
90.1	91.4	88.1	93.4	93.3	94.7	93.1	97.5	94.3	89.0	86.5	89.4	91.9	87.2	88.3	84.8

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
89.0	96.9	87.9	88.6	91.6	91.6	91.2	93.0	97.7	93.5	93.0	92.7	92.5	86.9	87.5

**CQS: 90.9**



## Color parameters

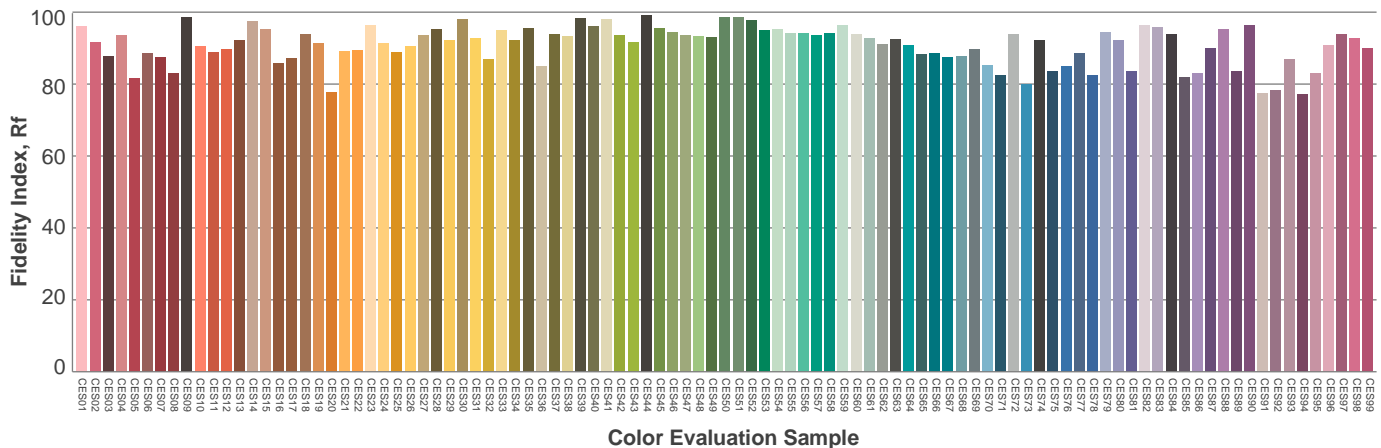
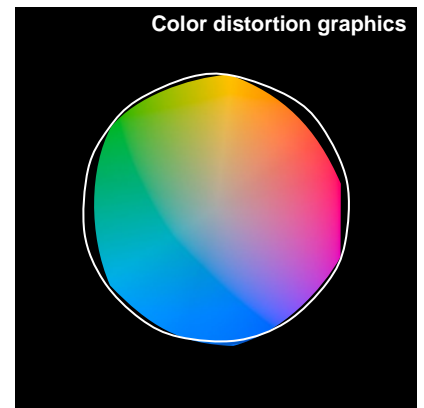
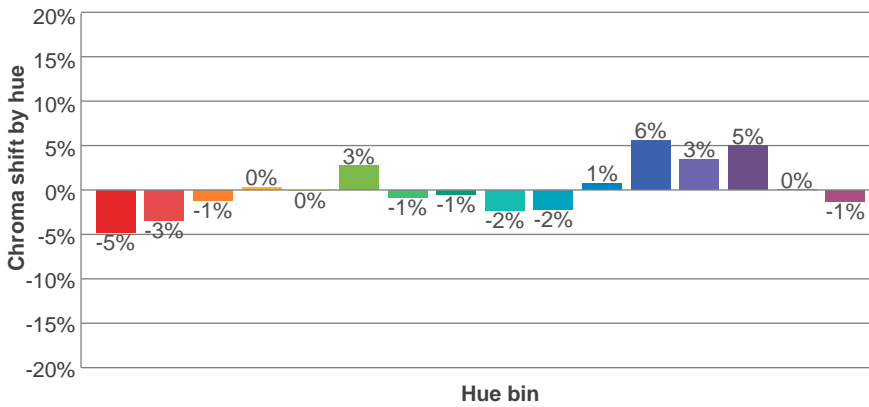
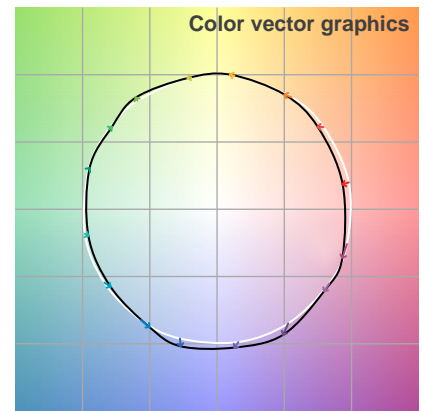
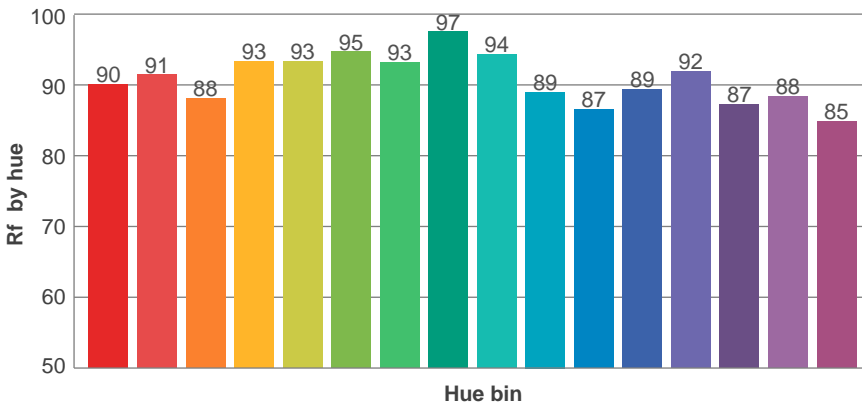
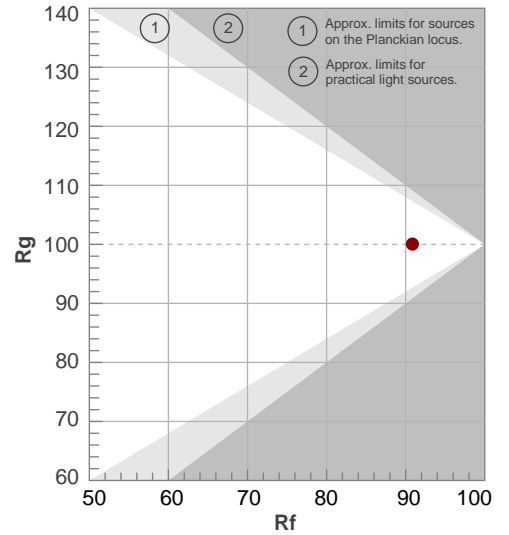
Color temperature	Color rendering index	Red component	Color fidelity	Color gamut	Color quality scale	Color coordinate cie 1931	Color coordinate cie 1931	Color coordinate	Color coordinate	Color diviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
3126 K	92.6	59.6	90.8	100.0	90.9	0.429	0.401	0.246	0.346	0.0001

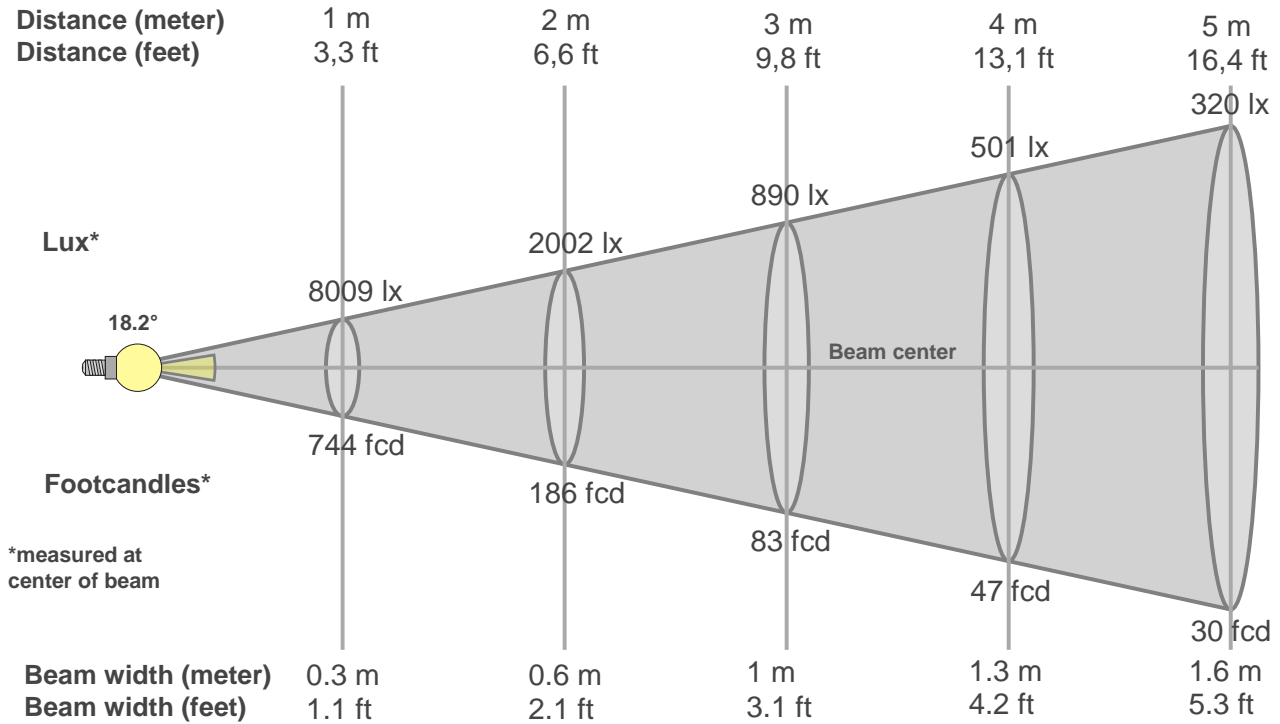
# TM30 details

**Rf 90.8**  
Fidelity index Rf

**Rg 100.0**  
Gammut index Rg

Hue Bin	R <sub>f</sub>	Graphic shifts (%)	
		Chroma	Hue
1	90	-5%	-1%
2	91	-3%	3%
3	88	-1%	5%
4	93	0%	3%
5	93	0%	3%
6	95	3%	0%
7	93	-1%	-3%
8	97	-1%	-1%
9	94	-2%	2%
10	89	-2%	5%
11	87	1%	8%
12	89	6%	2%
13	92	3%	-3%
14	87	5%	-8%
15	88	0%	-7%
16	85	-1%	-11%





### 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
8009lx	2002lx	890lx	501lx	320lx	222lx	163lx	125lx	99lx	80lx	66lx	56lx	47lx	41lx	36lx	31lx	28lx	25lx	22lx	20lx
744fcd	186fcd	82.7fcd	46.5fcd	29.8fcd	20.7fcd	15.2fcd	11.6fcd	9.2fcd	7.4fcd	6.1fcd	5.2fcd	4.4fcd	3.8fcd	3.3fcd	2.9fcd	2.6fcd	2.3fcd	2.1fcd	1.9fcd

### Intensities in 0° c-plane

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
8009	7956	7762	7422	6967	6430	5822	5189	4558	3949	3378	2861	2408	1999	1638	1333	1076	851	660	505
100%	99%	97%	93%	87%	80%	73%	65%	57%	49%	42%	36%	30%	25%	20%	17%	13%	11%	8%	6%

### Intensities in 90° c-plane

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
8009	7961	7772	7459	7043	6536	5969	5369	4773	4175	3618	3115	2645	2219	1848	1528	1240	992	785	613
100%	99%	97%	93%	88%	82%	75%	67%	60%	52%	45%	39%	33%	28%	23%	19%	15%	12%	10%	8%

### Intensities in 180° c-plane

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
8009	7899	7651	7288	6828	6287	5708	5117	4524	3954	3431	2937	2492	2096	1748	1438	1170	944	749	584
100%	99%	96%	91%	85%	78%	71%	64%	56%	49%	43%	37%	31%	26%	22%	18%	15%	12%	9%	7%

### Intensities in 270° c-plane

0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
8009	7929	7709	7374	6947	6435	5879	5296	4728	4167	3633	3145	2690	2280	1917	1597	1312	1068	858	680
100%	99%	96%	92%	87%	80%	73%	66%	59%	52%	45%	39%	34%	28%	24%	20%	16%	13%	11%	8%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
18.2°	35.6°	46°	1.0%	1.0%



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