

**Light efficiency:**



**Light quality:**



**Color temperature:**



**Output: 1096 lm**

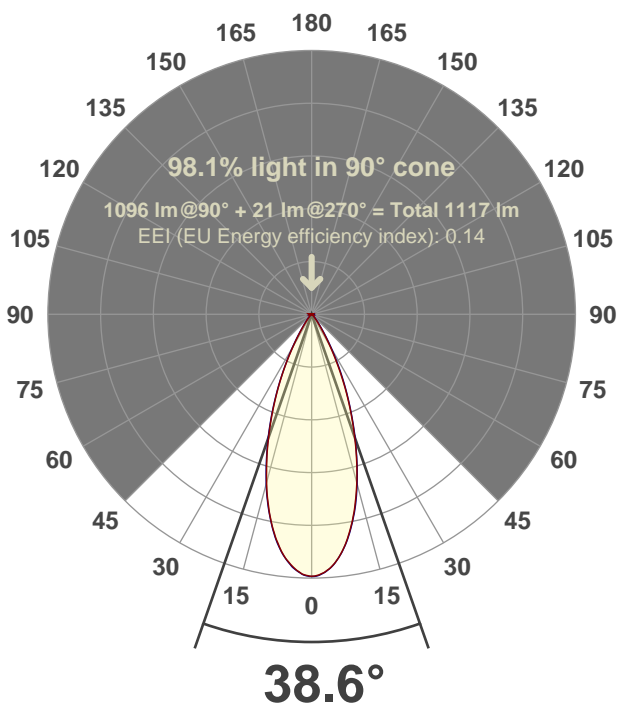
**Peak: 2440 cd**

**Power: 14.7 W**

**PF: 0.99**



**Beam angle**



Test number:

**GRO-CZ14-FL-RD-91A**

Luminaire Model:

**GRO-CZ14-FL-RD-91A**

Date and time:

**6/14/2017 5:22:30 PM**

**LUM: 1096**

CIE 1931

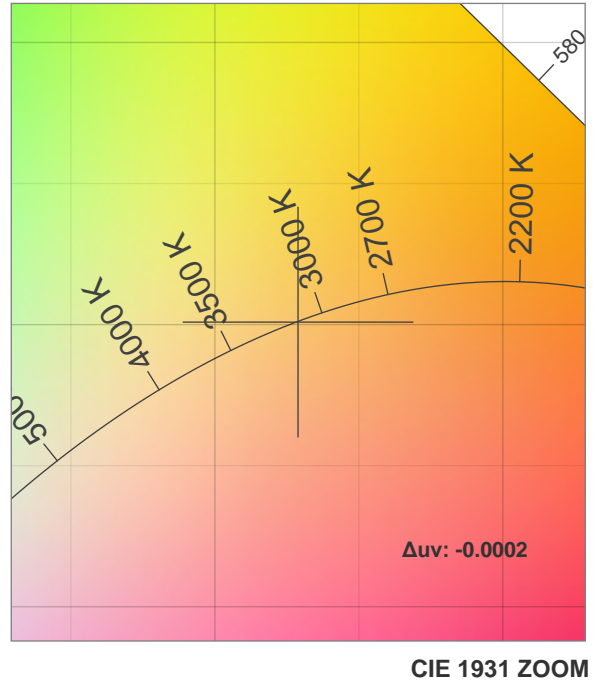
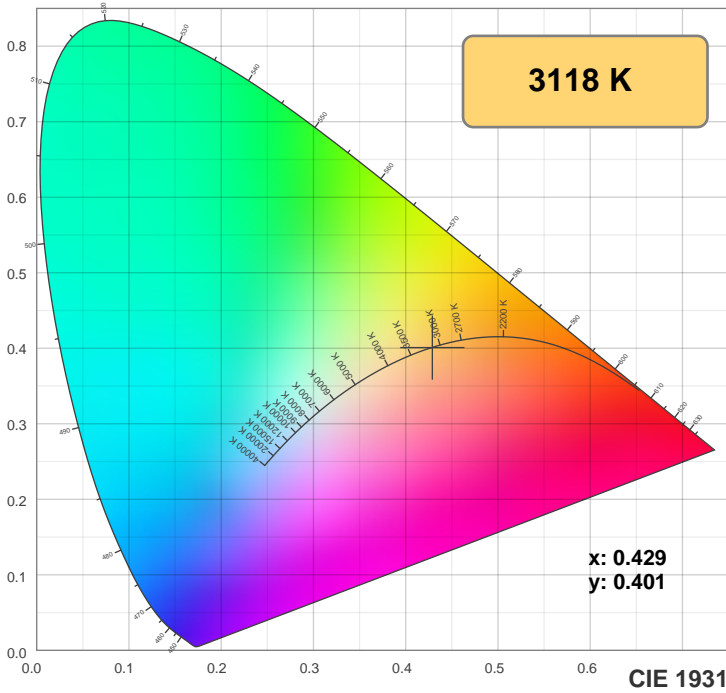
x: 0.429

y: 0.401

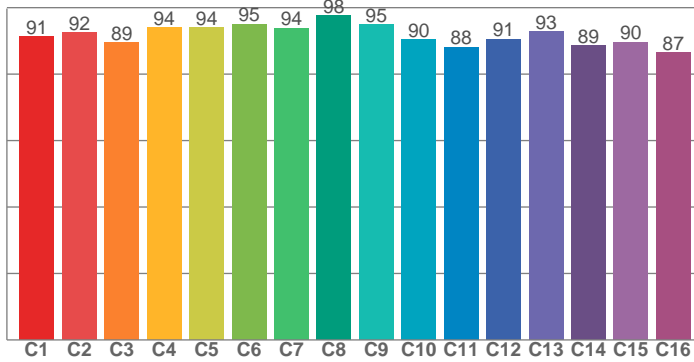


**Spectra**

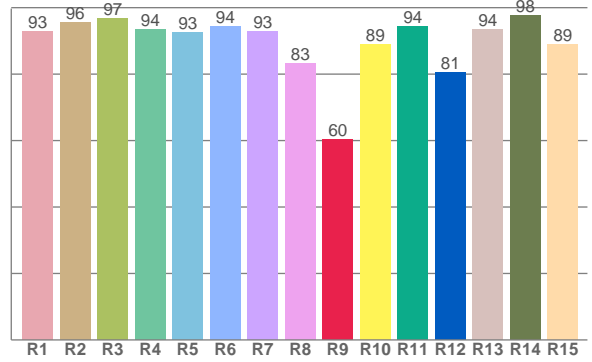




**TM30: 91.9**



**CRI: 92.7 (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
92.9	95.5	96.8	93.5	92.6	94.3	92.9	83.1	60.2	88.8	94.4	80.7	93.6	97.6	89.0

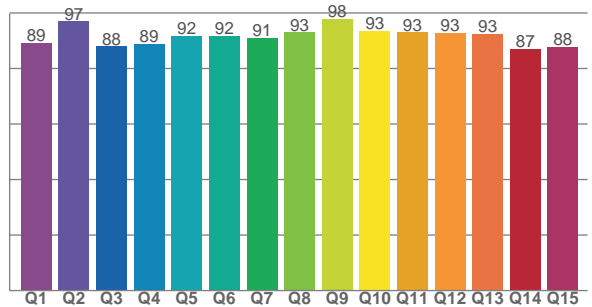
**TM30 C values, 16 binned values out of total of 99 C values**

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
91.3	92.4	89.4	94.1	94.0	95.1	93.8	97.7	95.0	90.5	88.1	90.5	92.8	88.6	89.6	86.6

**CQS Q values**

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
89.1	96.9	87.9	88.7	91.8	91.7	91.1	93.0	97.7	93.5	93.0	92.7	92.5	87.1	87.6

**CQS: 91.0**



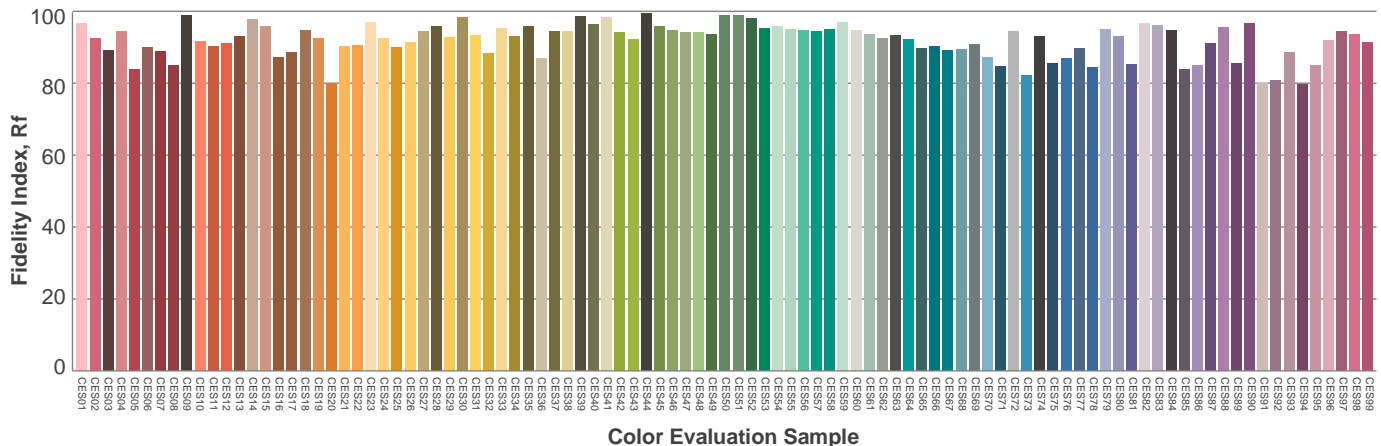
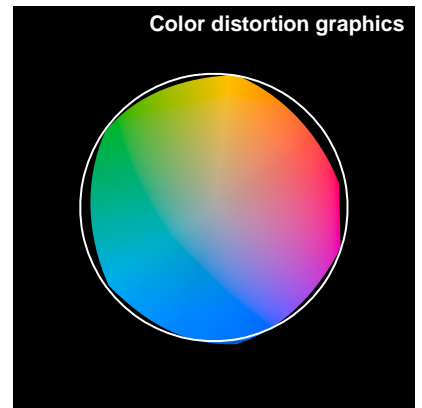
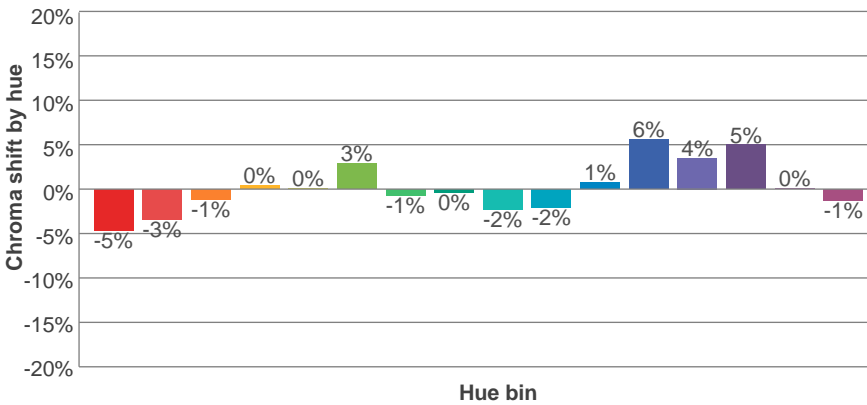
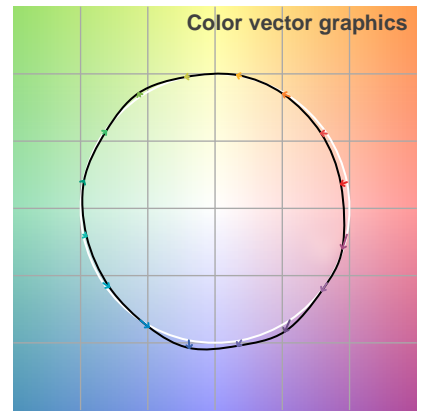
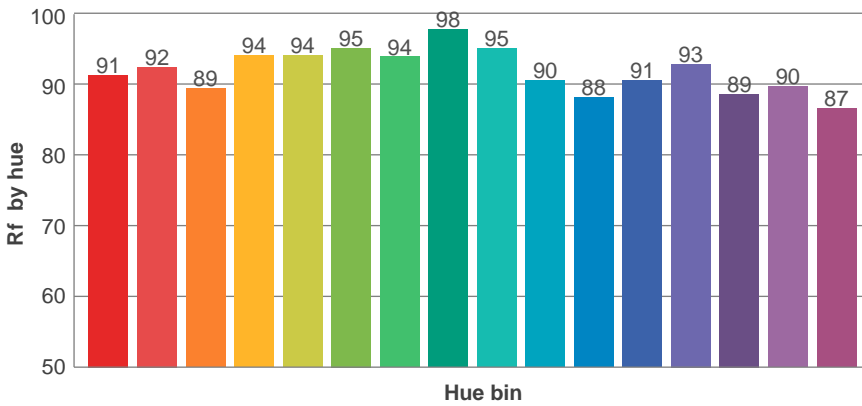
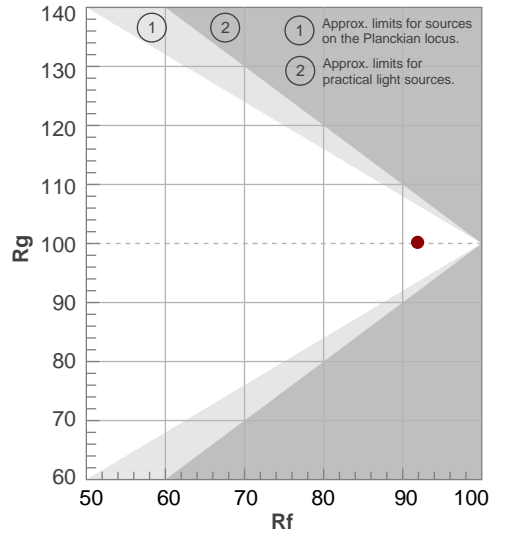
## Color parameters

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	Δuv
3118 K	92.7	60.2	91.9	100.2	91.0	0.429	0.401	0.247	0.346	-0.0002

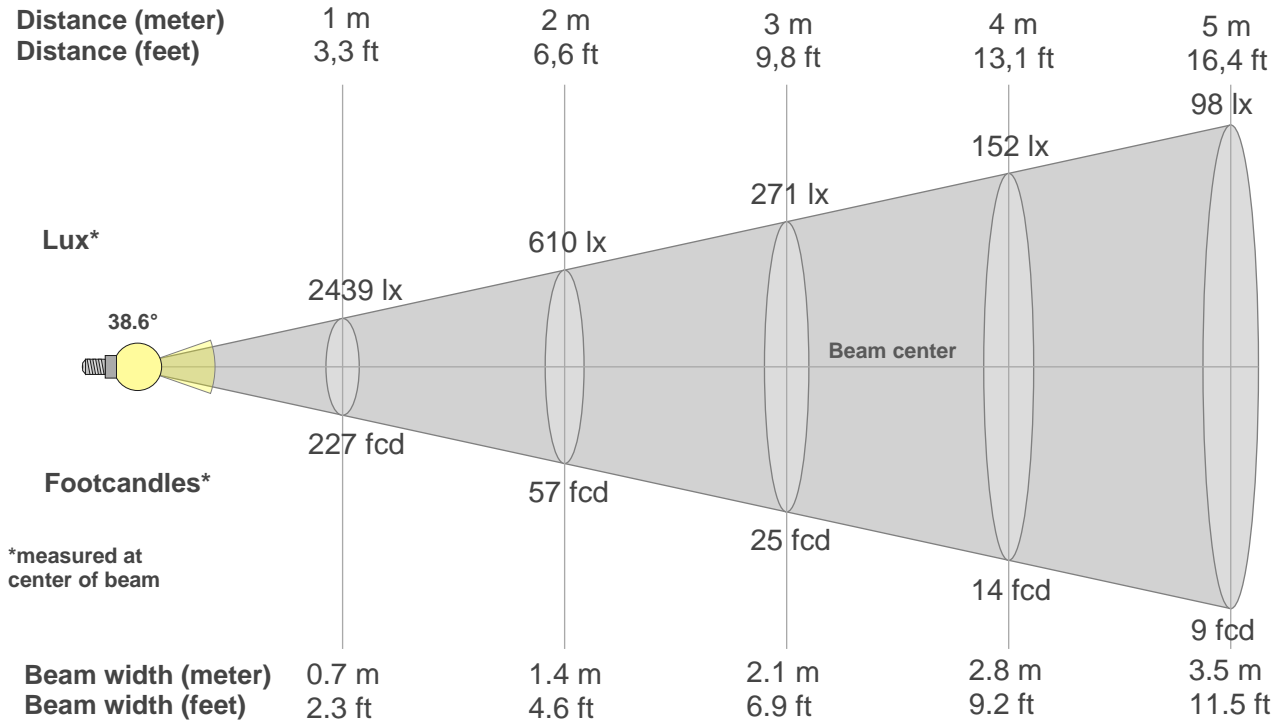
**Rf 91.9**  
Fidelity index Rf

**Rg 100.2**  
Gammut index Rg

Hue Bin	R <sub>f</sub>	Graphic shifts (%)	
		Chroma	Hue
1	91	-5%	-1%
2	92	-3%	3%
3	89	-1%	5%
4	94	0%	3%
5	94	0%	3%
6	95	3%	0%
7	94	-1%	-3%
8	98	0%	-1%
9	95	-2%	2%
10	90	-2%	5%
11	88	1%	8%
12	91	6%	2%
13	93	4%	-3%
14	89	5%	-8%
15	90	0%	-7%
16	87	-1%	-11%



# Beam details



### 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
2439lx	610lx	271lx	152lx	98lx	68lx	50lx	38lx	30lx	24lx	20lx	17lx	14lx	12lx	11lx	10lx	8lx	8lx	7lx	6lx
226.6fcd	56.7fcd	25.2fcd	14.2fcd	9.1fcd	6.3fcd	4.6fcd	3.5fcd	2.8fcd	2.3fcd	1.9fcd	1.6fcd	1.3fcd	1.2fcd	1fcd	0.9fcd	0.8fcd	0.7fcd	0.6fcd	0.6fcd

### 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°
2439	2420	2374	2295	2185	2046	1890	1714	1529	1337	1146	963	789	619	468	341	238	160	107	73
100%	99%	97%	94%	90%	84%	77%	70%	63%	55%	47%	39%	32%	25%	19%	14%	10%	7%	4%	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°
2439	2423	2375	2294	2188	2054	1900	1726	1539	1346	1160	975	804	644	498	372	268	188	130	92
100%	99%	97%	94%	90%	84%	78%	71%	63%	55%	48%	40%	33%	26%	20%	15%	11%	8%	5%	4%

### 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°
2439	2420	2365	2288	2179	2045	1890	1716	1524	1337	1148	964	790	628	477	344	238	157	105	71
100%	99%	97%	94%	89%	84%	77%	70%	62%	55%	47%	40%	32%	26%	20%	14%	10%	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°
2439	2423	2371	2290	2185	2051	1895	1726	1538	1347	1162	976	800	634	487	359	257	176	123	88
100%	99%	97%	94%	90%	84%	78%	71%	63%	55%	48%	40%	33%	26%	20%	15%	11%	7%	5%	4%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
38.6°	64.3°	79.3°	99.5%	98.1%



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