

Light efficiency:

72 Lumen/Watt

Output: 2169 lm

Light quality:

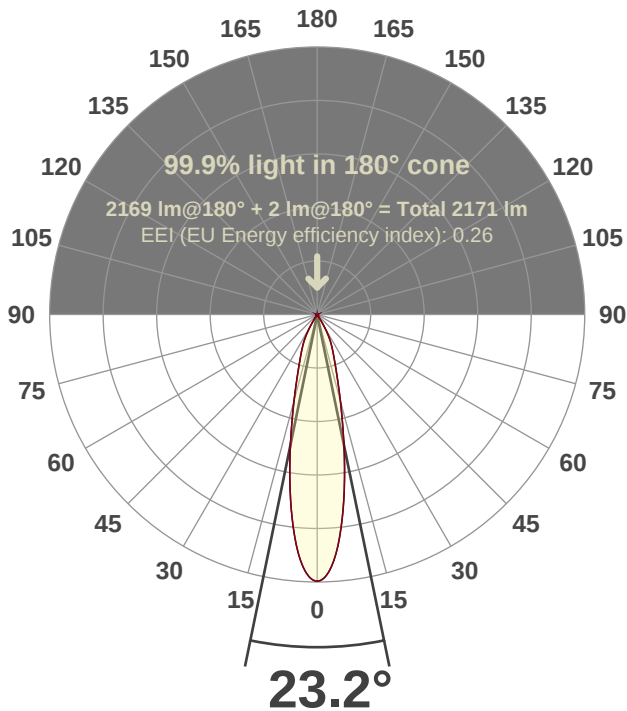
CRI: 92.8

Peak: 8977 cd

Power: 30.0 W



Beam angle



Test number:

CR4D-R-OR-C28-30k-24 (GRO-CZ20-NF-RD)

Luminaire Model:

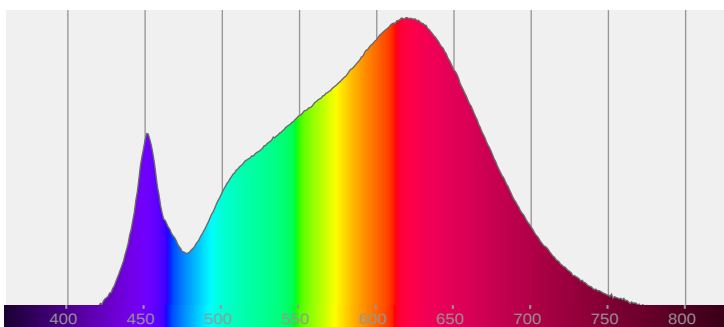
Core 4" Round Open Regress C28 30K 24°

Date and time:

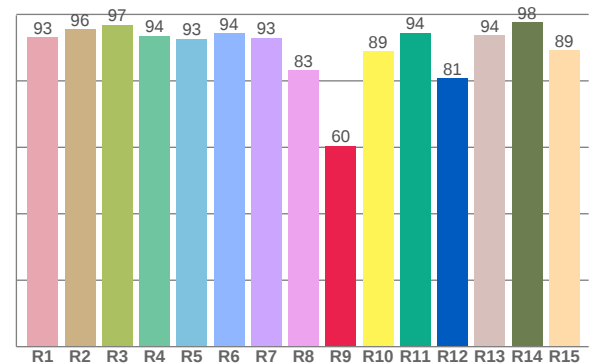
6/14/2017 5:11:14 PM

LUM: 2169

Spectra



CRI: 92.8 (R1-R8)



Color parameters

	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
	CRI	CRI R9	TM30 R _f	TM30 R _g	CQS	x	y	u	v	Δuv
	92.8	60.5	91.9	100.2	91.0	0.429	0.401	0.247	0.346	-0.0002

R_f 91.9

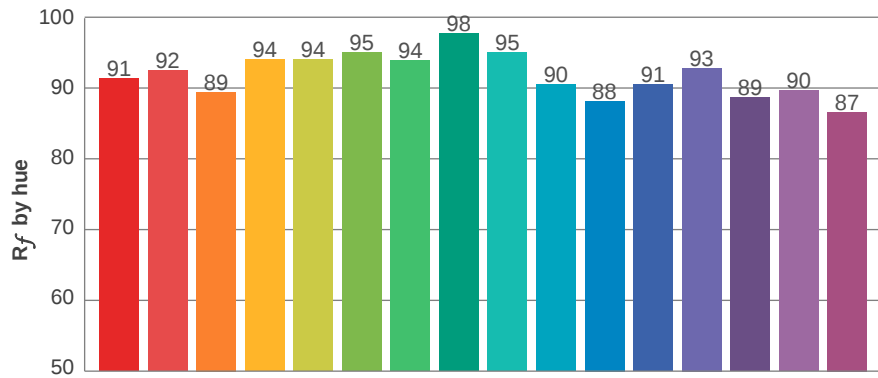
Fidelity index R_f

R_g 100.2

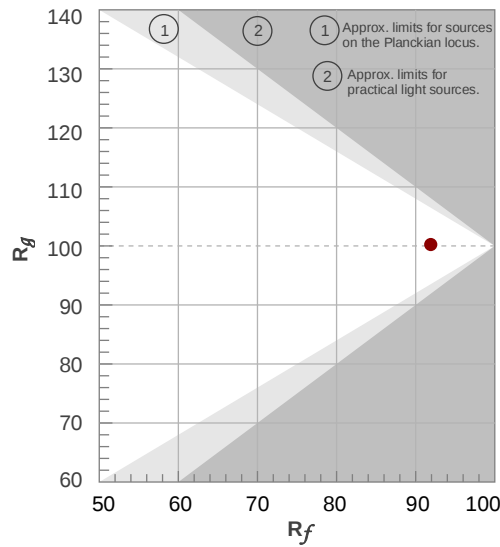
Gammut index R_g

TM30: 91.9

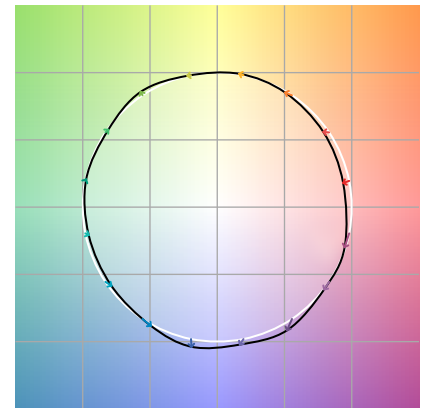
TM-30Color



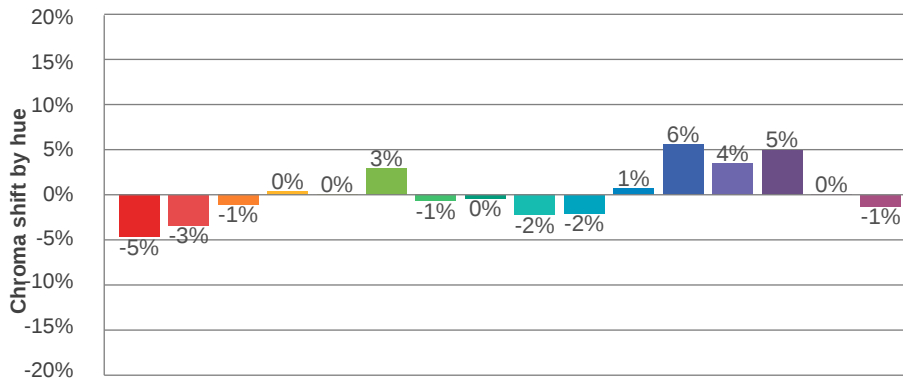
Hue Bin	R_f	Graphic shifts (%)	
		Chroma	Hue
1	91	-5%	-1%
2	92	-3%	3%
3	89	-1%	5%
4	94	0%	3%
5	94	0%	3%
6	95	3%	0%
7	94	-1%	-3%
8	98	0%	-1%
9	95	-2%	2%
10	90	-2%	5%
11	88	1%	8%
12	91	6%	2%
13	93	4%	-3%
14	89	5%	-8%
15	90	0%	-7%
16	87	-1%	-11%



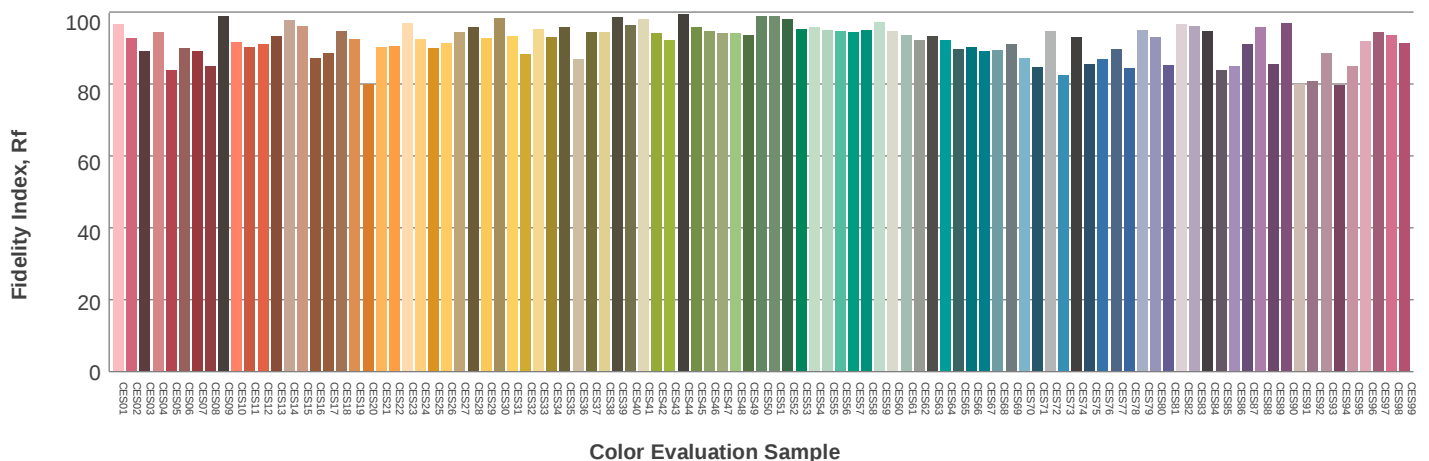
Color vector graphics



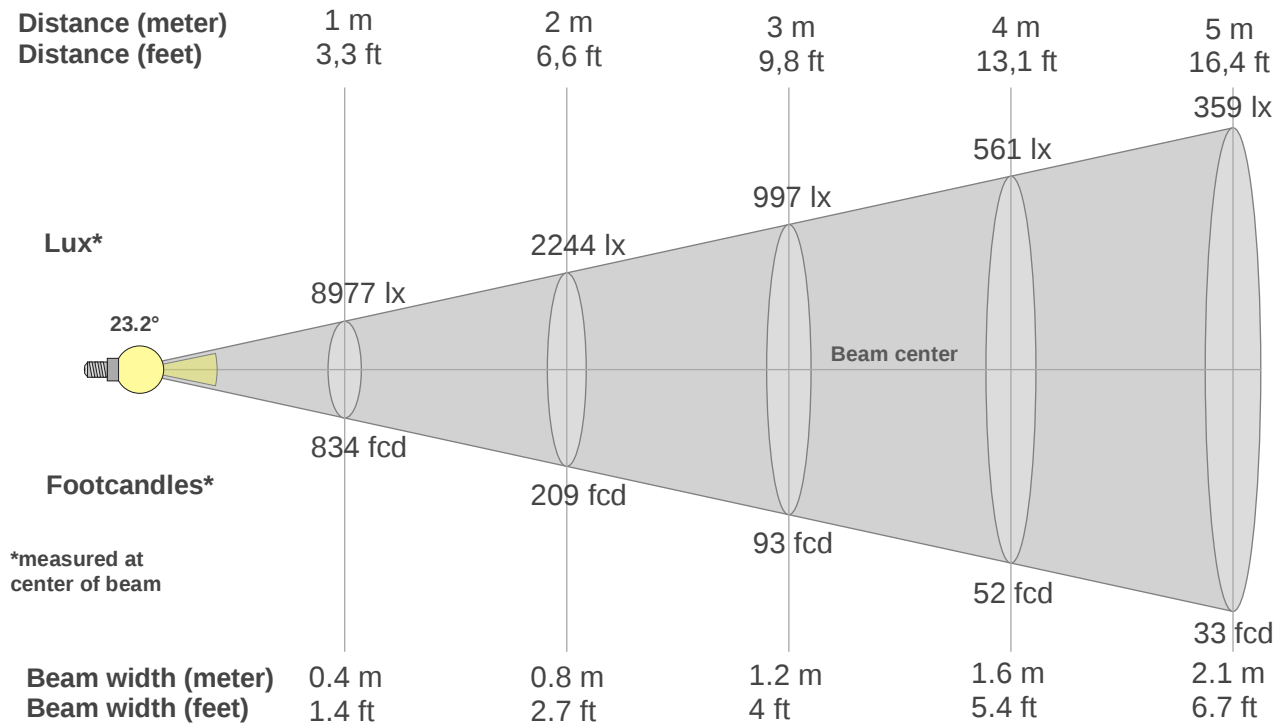
Color distortion



Hue bin



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
8977lx	2244lx	997lx	561lx	359lx	249lx	183lx	140lx	111lx	90lx	74lx	62lx	53lx	46lx	40lx	35lx	31lx	28lx	25lx	22lx
834fcd	208.5fcd	92.7fcd	52.1fcd	33.4fcd	23.2fcd	17fcd	13fcd	10.3fcd	8.3fcd	6.9fcd	5.8fcd	4.9fcd	4.3fcd	3.7fcd	3.3fcd	2.9fcd	2.6fcd	2.3fcd	2.1fcd

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°
8977	8793	8257	7417	6399	5319	4297	3411	2703	2164	1771	1484	1256	1050	823	579	348	124	54	42
100%	98%	92%	83%	71%	59%	48%	38%	30%	24%	20%	17%	14%	12%	9%	6%	4%	1%	1%	0%

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°
8977	8793	8257	7417	6399	5319	4297	3411	2703	2164	1771	1484	1256	1050	823	579	348	124	54	42
100%	98%	92%	83%	71%	59%	48%	38%	30%	24%	20%	17%	14%	12%	9%	6%	4%	1%	1%	0%

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°
8977	8793	8257	7417	6399	5319	4297	3411	2703	2164	1771	1484	1256	1050	823	579	348	124	54	42
100%	98%	92%	83%	71%	59%	48%	38%	30%	24%	20%	17%	14%	12%	9%	6%	4%	1%	1%	0%

Intensities in 270° c-plane

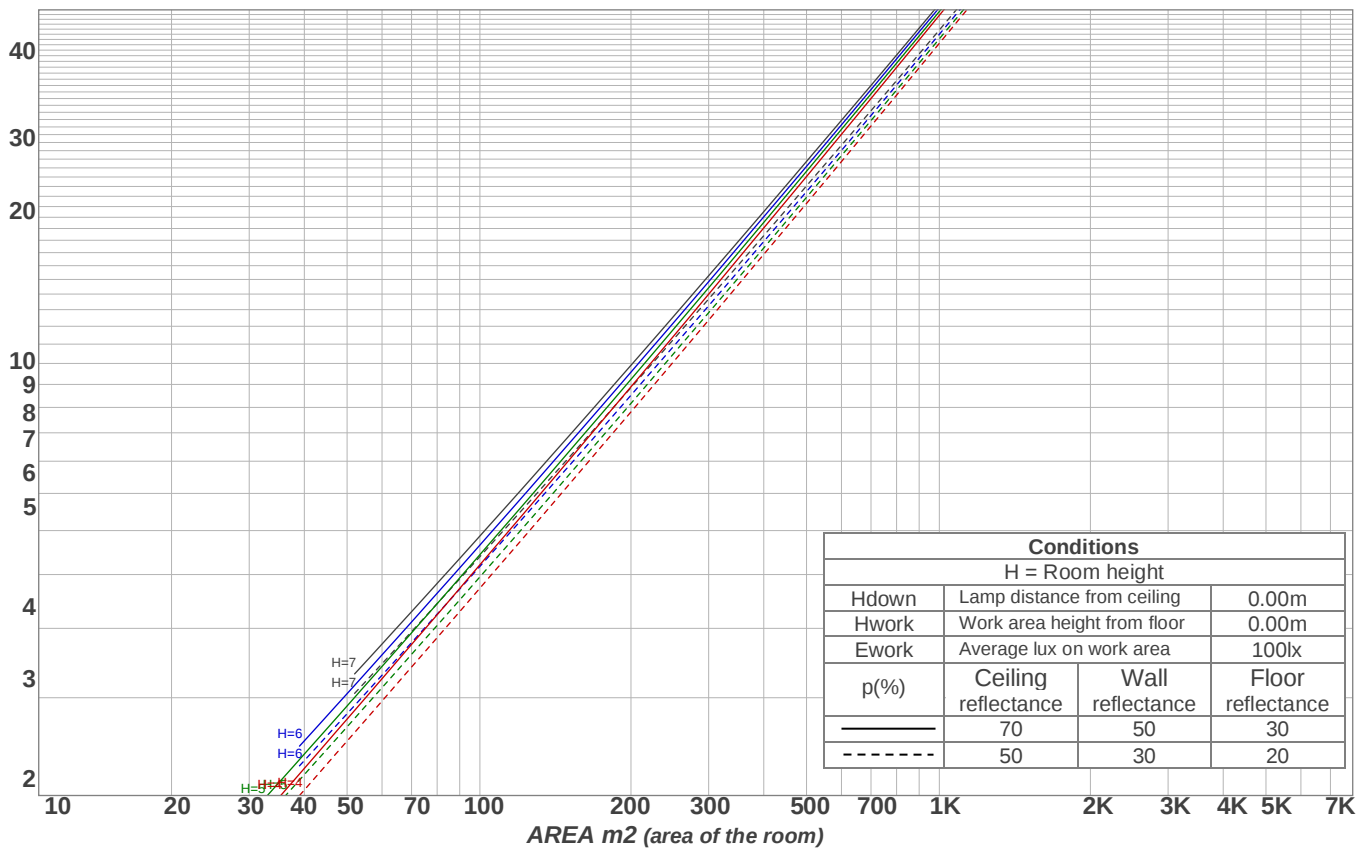
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
8977	8793	8257	7417	6399	5319	4297	3411	2703	2164	1771	1484	1256	1050	823	579	348	124	54	42
100%	98%	92%	83%	71%	59%	48%	38%	30%	24%	20%	17%	14%	12%	9%	6%	4%	1%	1%	0%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
23.2°	54.8°	65.9°	99.6%	99.0%

Light planning

Luminaire budgetary diagram

LAMPS (number of lamps)
50



Luminaire budgetary diagram

AREA m2 (area of the room)

Coefficients of Utilization

Ceiling reflectance	80				70				50			30			10			0
Wall reflectance	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Floor reflectance	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	0
RCR	(RCR: Room Cavity Ratio) Room Values are expressed as percentage of Lumens delivered to the task surface																	
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	115	113	111	109	112	110	109	107	106	105	104	103	102	101	99	99	98	96
2	111	107	104	101	109	105	102	100	102	100	98	99	97	96	97	95	94	92
3	107	102	98	95	105	101	97	94	98	95	93	96	93	91	94	92	90	89
4	103	98	93	90	102	96	93	90	94	91	89	93	90	88	91	89	87	85
5	100	94	89	86	98	93	89	86	91	88	85	90	87	84	88	86	83	82
6	97	90	86	82	95	89	85	82	88	84	82	87	83	81	85	83	81	79
7	94	87	82	79	92	86	82	79	85	81	79	84	81	78	83	80	78	77
8	91	84	79	76	90	83	79	76	82	78	76	81	78	75	81	77	75	74
9	88	81	77	74	87	80	76	73	80	76	73	79	75	73	78	75	73	72
10	85	78	74	71	85	78	74	71	77	74	71	77	73	71	76	73	71	70

Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
666 lm	856 lm	519 lm	99.8 lm	14.3 lm	7.52 lm	2.76 lm	2.15 lm	1.81 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0.000 lm	0.000 lm	0.000 lm	0.000 lm	0.000 lm	0.000 lm	0.000 lm	0.000 lm	0.000 lm

UGR

p Ceiling		70	70	50	50	30	70	70	50	50	30
p Walls		50	30	50	30	30	50	30	50	30	30
p Floor		20	20	20	20	20	20	20	20	20	20
Room size X Y		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
2H	2H	24.4	24.9	24.5	25.1	25.2	24.4	24.9	24.5	25.1	25.2
	3H	24.2	24.8	24.5	24.9	25.1	24.2	24.8	24.5	24.9	25.1
	4H	24.1	24.7	24.5	24.9	25.2	24.1	24.7	24.5	24.9	25.2
	6H	24.2	24.7	24.5	25.0	25.3	24.2	24.7	24.5	25.0	25.3
	8H	24.2	24.7	24.5	25.0	25.4	24.2	24.7	24.5	25.0	25.4
	12H	24.3	24.7	24.6	25.1	25.5	24.3	24.7	24.6	25.1	25.5
4H	2H	24.1	24.7	24.5	24.9	25.1	24.1	24.7	24.5	24.9	25.1
	3H	24.0	24.5	24.4	24.8	25.3	24.0	24.5	24.4	24.8	25.3
	4H	24.0	24.4	24.4	24.8	25.3	24.0	24.4	24.4	24.8	25.3
	6H	24.0	24.5	24.5	24.8	25.2	24.0	24.5	24.5	24.8	25.2
	8H	24.1	24.5	24.6	24.8	25.2	24.1	24.5	24.6	24.8	25.2
	12H	24.2	24.5	24.7	24.9	25.4	24.2	24.5	24.7	24.9	25.4
8H	4H	23.9	24.3	24.4	24.7	25.0	23.9	24.3	24.4	24.7	25.0
	6H	24.0	24.3	24.5	24.8	25.3	24.0	24.3	24.5	24.8	25.3
	8H	24.2	24.4	24.7	24.9	25.5	24.2	24.4	24.7	24.9	25.5
	12H	24.4	24.6	25.0	25.1	25.7	24.4	24.6	25.0	25.1	25.7
12H	4H	23.8	24.2	24.3	24.6	25.0	23.8	24.2	24.3	24.6	25.0
	6H	24.1	24.3	24.6	24.8	25.4	24.1	24.3	24.6	24.8	25.4
	8H	24.2	24.4	24.8	24.9	25.5	24.2	24.4	24.8	24.9	25.5
Corrected glare indices referring to 2169 lm total luminous flux											