

Light efficiency:

73 Lumen/Watt

Output: 1536 lm

Light quality:

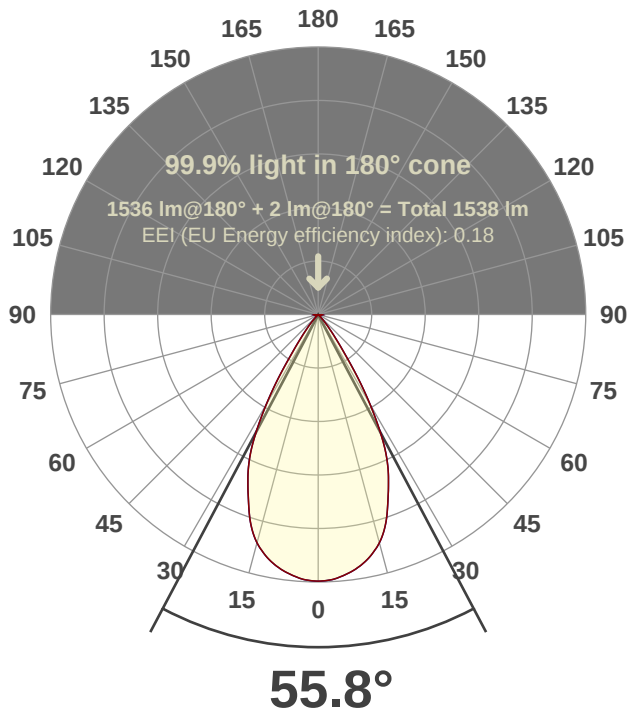
CRI: 92.8

Peak: 2060 cd

Power: 21.1 W



Beam angle



Test number:

CR4D-R-OR-C20-30k-55 (GRO-CZ20-WF-RD)

Luminaire Model:

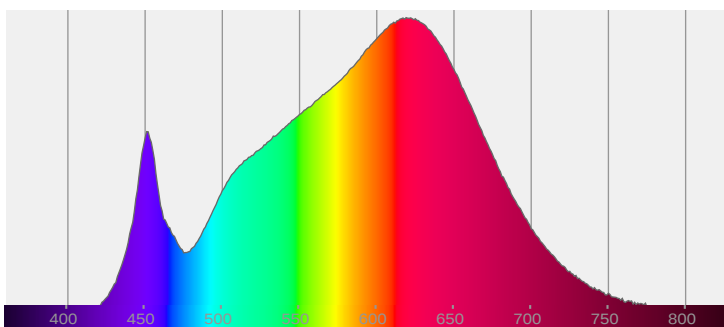
Core 4" Round Open Regress C20 30K 55°

Date and time:

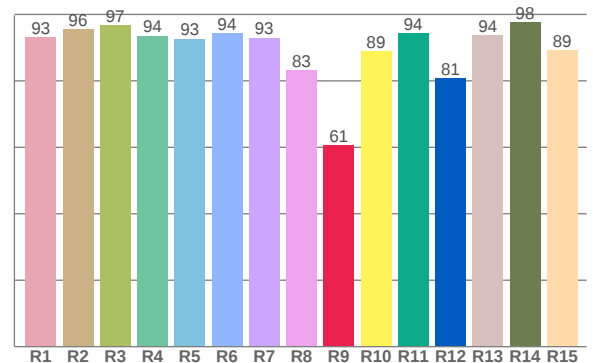
6/14/2017 2:30:22 PM

LUM: 1536

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	0.428	0.400	0.246	0.346	-0.0002

R_f 91.9

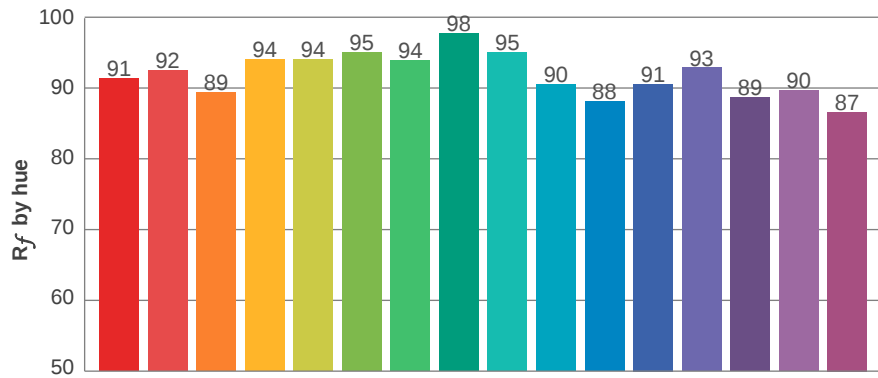
Fidelity index R_f

R_g 100.2

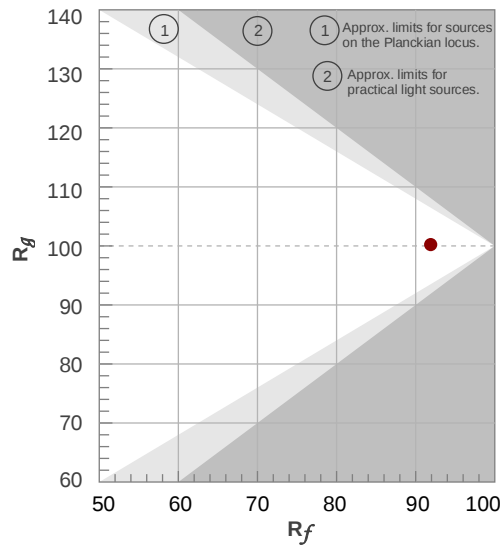
Gammut index R_g

TM30: 91.9

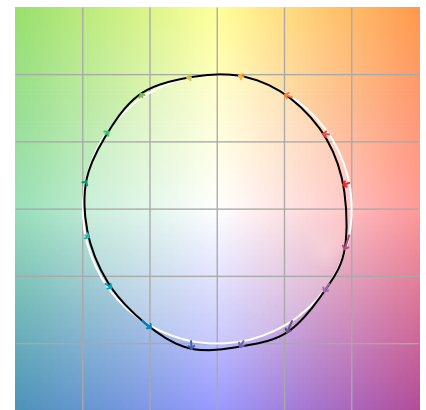
TM-30Color



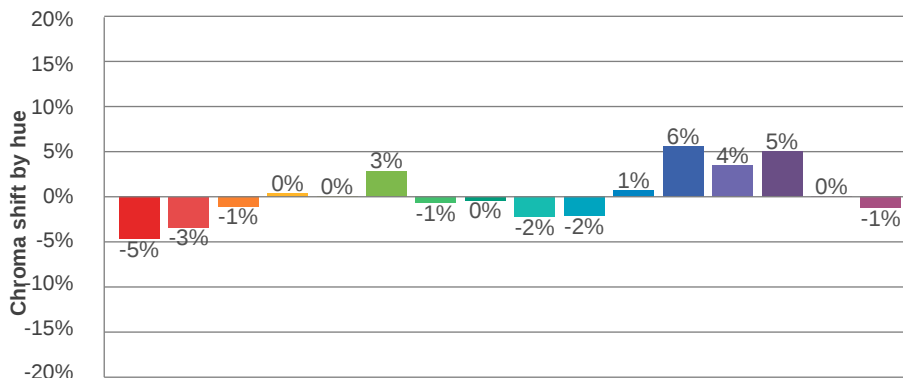
Hue Bin	R_f	Graphic shifts (%)	
		Chroma	Hue
1	91	-5%	-1%
2	92	-3%	3%
3	89	-1%	5%
4	94	0%	3%
5	94	0%	3%
6	95	3%	0%
7	94	-1%	-3%
8	98	0%	-1%
9	95	-2%	2%
10	90	-2%	5%
11	88	1%	8%
12	91	6%	2%
13	93	4%	-3%
14	89	5%	-8%
15	90	0%	-7%
16	87	-1%	-11%



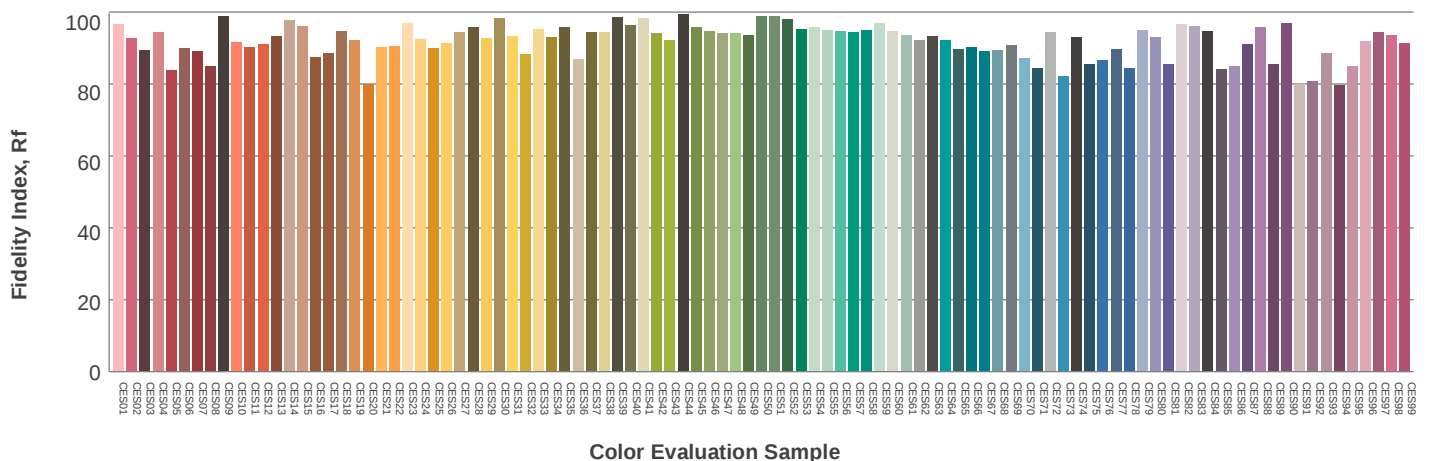
Color vector graphics



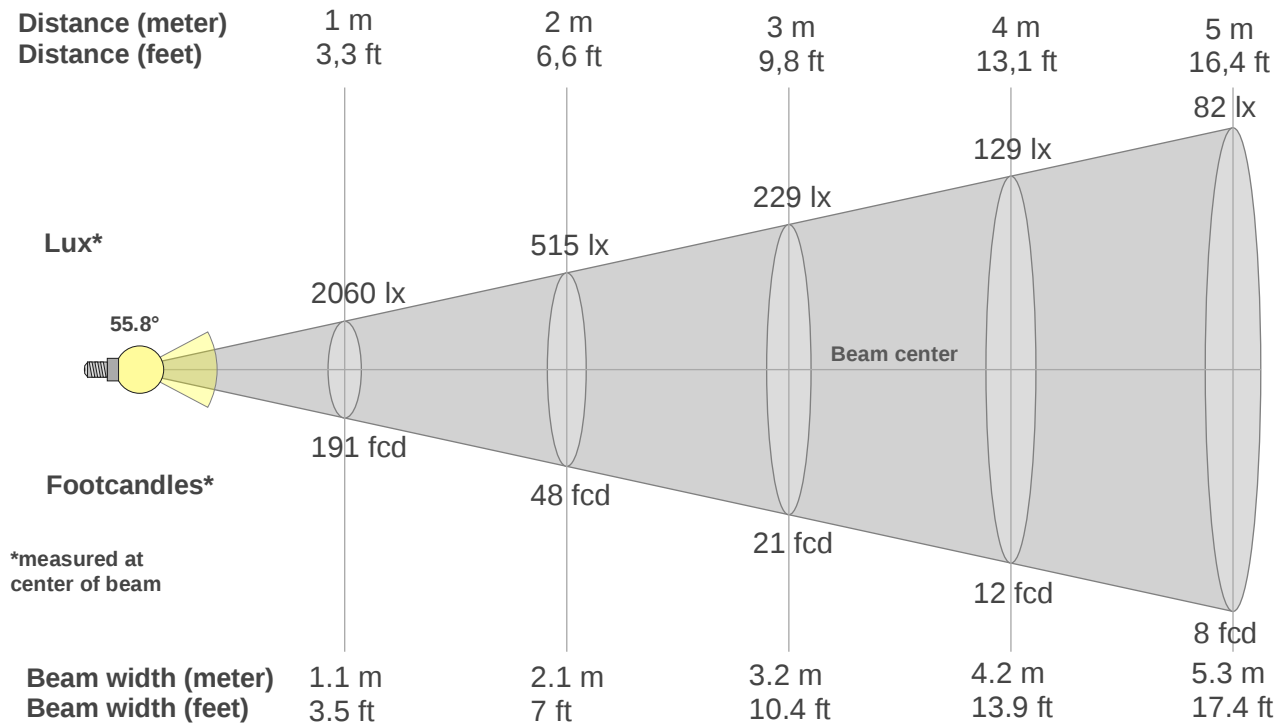
Color distortion



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
2060lx	515lx	229lx	129lx	82lx	57lx	42lx	32lx	25lx	21lx	17lx	14lx	12lx	11lx	9lx	8lx	7lx	6lx	6lx	5lx
191.4fcd	47.9fcd	21.3fcd	12fcd	7.7fcd	5.3fcd	3.9fcd	3fcd	2.4fcd	1.9fcd	1.6fcd	1.3fcd	1.1fcd	1fcd	0.9fcd	0.7fcd	0.7fcd	0.6fcd	0.5fcd	0.5fcd

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°
2060	2056	2044	2021	1995	1960	1916	1860	1790	1694	1573	1453	1336	1199	1019	814	603	394	261	176
100%	100%	99%	98%	97%	95%	93%	90%	87%	82%	76%	71%	65%	58%	49%	39%	29%	19%	13%	9%

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°
2060	2056	2044	2021	1995	1960	1916	1860	1790	1694	1573	1453	1336	1199	1019	814	603	394	261	176
100%	100%	99%	98%	97%	95%	93%	90%	87%	82%	76%	71%	65%	58%	49%	39%	29%	19%	13%	9%

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°
2060	2056	2044	2021	1995	1960	1916	1860	1790	1694	1573	1453	1336	1199	1019	814	603	394	261	176
100%	100%	99%	98%	97%	95%	93%	90%	87%	82%	76%	71%	65%	58%	49%	39%	29%	19%	13%	9%

Intensities in 270° c-plane

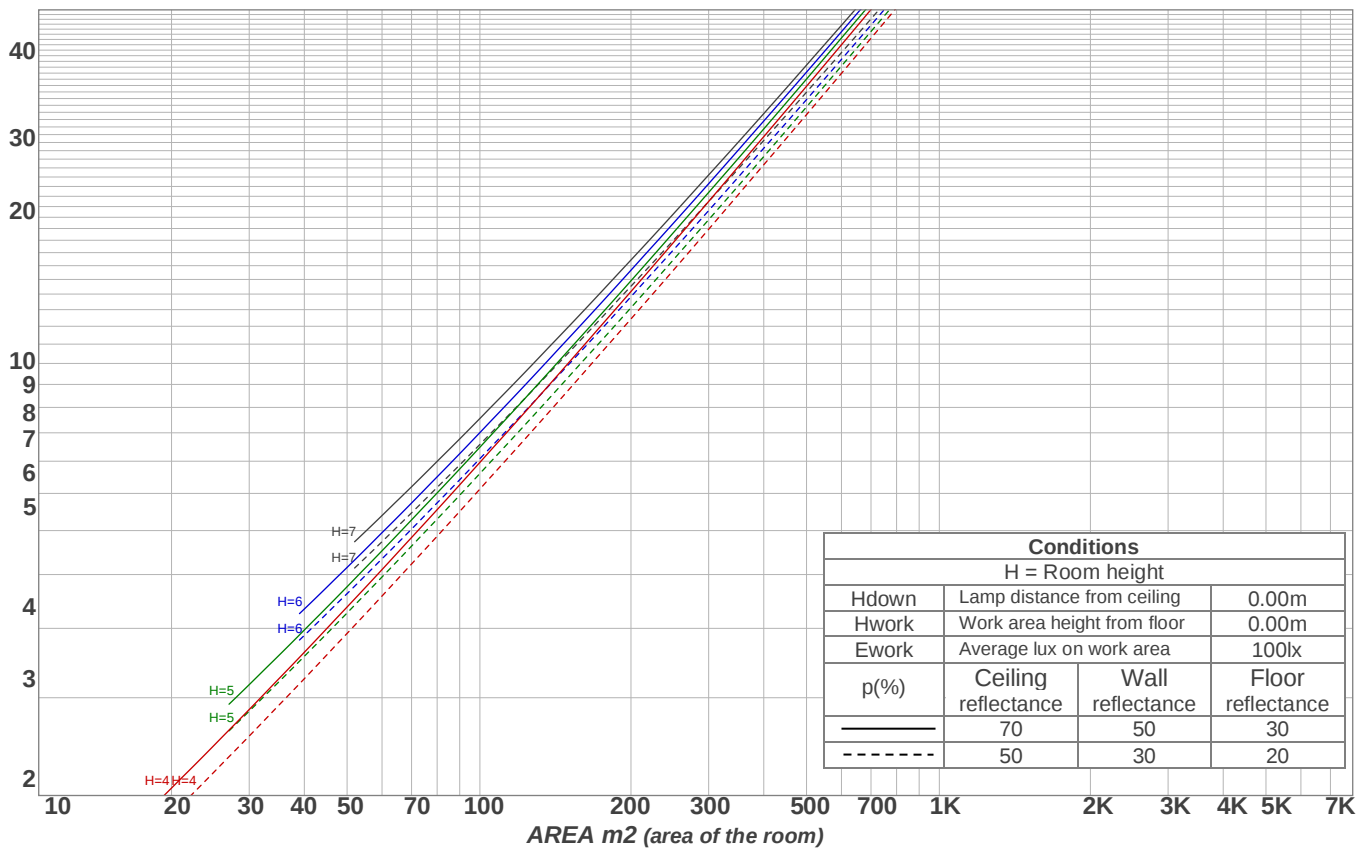
0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°	24°	26°	28°	30°	32°	34°	36°	38°
2060	2056	2044	2021	1995	1960	1916	1860	1790	1694	1573	1453	1336	1199	1019	814	603	394	261	176
100%	100%	99%	98%	97%	95%	93%	90%	87%	82%	76%	71%	65%	58%	49%	39%	29%	19%	13%	9%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
55.8°	74.4°	87.6°	99.6%	98.6%

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	114	111	109	107	111	109	107	105	105	103	102	101	100	99	98	97	96	94
2	109	104	100	97	107	103	99	96	99	97	94	96	94	92	94	92	90	89
3	104	98	93	90	102	97	92	89	94	90	87	92	89	86	89	87	85	83
4	99	92	87	83	97	91	86	83	89	85	82	87	84	81	85	82	80	78
5	95	87	81	78	93	86	81	77	84	80	76	83	79	76	81	78	75	74
6	90	82	77	73	89	81	76	72	80	75	72	79	74	71	77	74	71	70
7	86	78	72	68	85	77	72	68	76	71	68	75	70	67	74	70	67	66
8	82	74	68	64	81	73	68	64	72	67	64	71	67	64	70	66	63	62
9	79	70	64	61	78	69	64	61	69	64	60	68	63	60	67	63	60	59
10	76	67	61	58	75	66	61	57	65	61	57	65	60	57	64	60	57	56

Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
192 lm	506 lm	564 lm	228 lm	35.6 lm	6.31 lm	1.81 lm	1.42 lm	1.07 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	30.8	31.4	30.9	31.6	31.8	30.8	31.4	30.9	31.6	31.8
	3H	30.5	31.2	30.9	31.4	31.6	30.5	31.2	30.9	31.4	31.6
	4H	30.4	31.1	30.8	31.3	31.6	30.4	31.1	30.8	31.3	31.6
	6H	30.4	31.0	30.7	31.3	31.6	30.4	31.0	30.7	31.3	31.6
	8H	30.4	30.9	30.7	31.2	31.6	30.4	30.9	30.7	31.2	31.6
	12H	30.3	30.9	30.7	31.2	31.6	30.3	30.9	30.7	31.2	31.6
4H	2H	30.4	31.1	30.8	31.3	31.6	30.4	31.1	30.8	31.3	31.6
	3H	30.3	30.8	30.7	31.2	31.6	30.3	30.8	30.7	31.2	31.6
	4H	30.2	30.7	30.6	31.1	31.6	30.2	30.7	30.6	31.1	31.6
	6H	30.1	30.6	30.6	31.0	31.3	30.1	30.6	30.6	31.0	31.3
	8H	30.1	30.5	30.6	30.9	31.2	30.1	30.5	30.6	30.9	31.2
	12H	30.0	30.4	30.5	30.8	31.2	30.0	30.4	30.5	30.8	31.2
8H	4H	30.0	30.5	30.5	30.9	31.2	30.0	30.5	30.5	30.9	31.2
	6H	30.0	30.3	30.5	30.8	31.3	30.0	30.3	30.5	30.8	31.3
	8H	30.0	30.3	30.5	30.8	31.4	30.0	30.3	30.5	30.8	31.4
	12H	30.0	30.2	30.6	30.7	31.3	30.0	30.2	30.6	30.7	31.3
12H	4H	30.0	30.4	30.5	30.8	31.2	30.0	30.4	30.5	30.8	31.2
	6H	30.0	30.2	30.5	30.8	31.4	30.0	30.2	30.5	30.8	31.4
	8H	29.9	30.2	30.5	30.7	31.3	29.9	30.2	30.5	30.7	31.3
Corrected glare indices referring to 1536 lm total luminous flux											