

Light efficiency:

59 Lumen/Watt

Light quality:

CRI: 92.4

Color temperature:

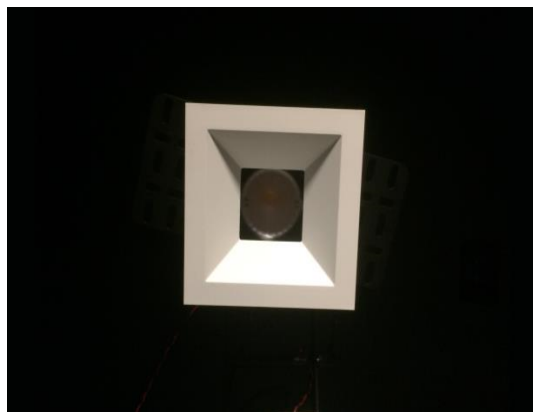
3104 K

Output: 1248 lm

Peak: 1695 cd

Power: 21.2 W

PF: 0.99



Beam angle

52.1°

Product name:

GR-CZ20-WF-SQ-91A

Item number:

GR-CZ20-WF-SQ-91A

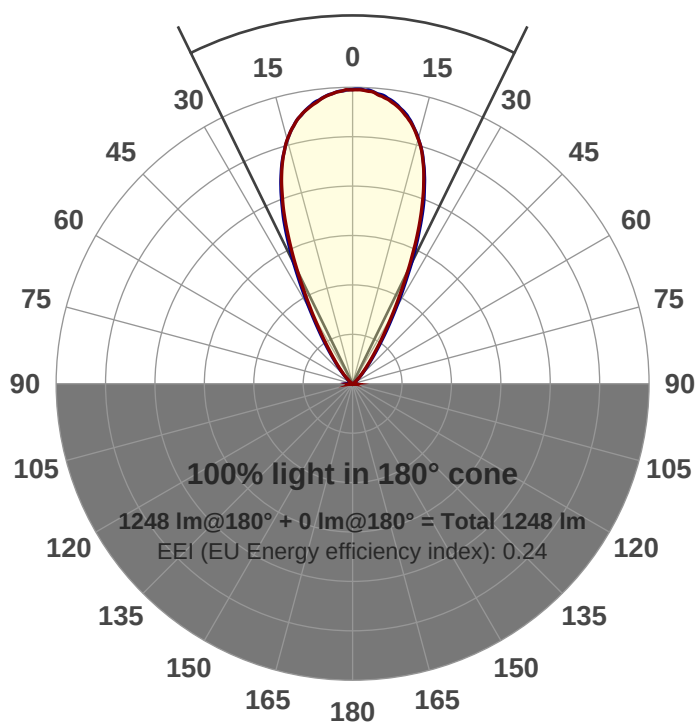
Date and time:

3/8/2017 3:24:51 PM

Description:

LUM: 1248

PPF: 20.1

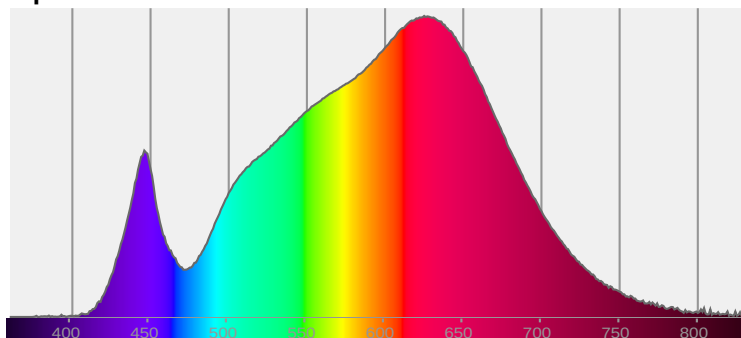


CIE 1931

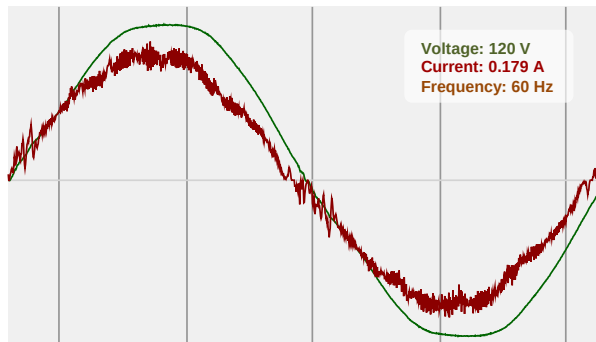
x: 0.429

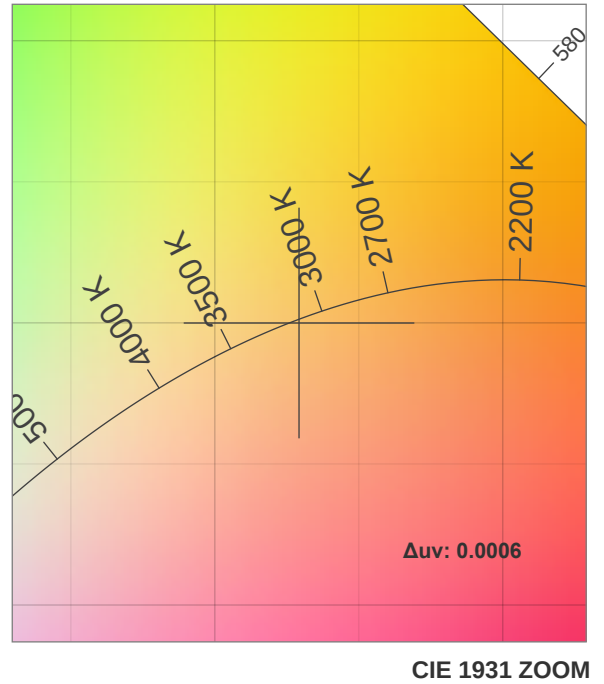
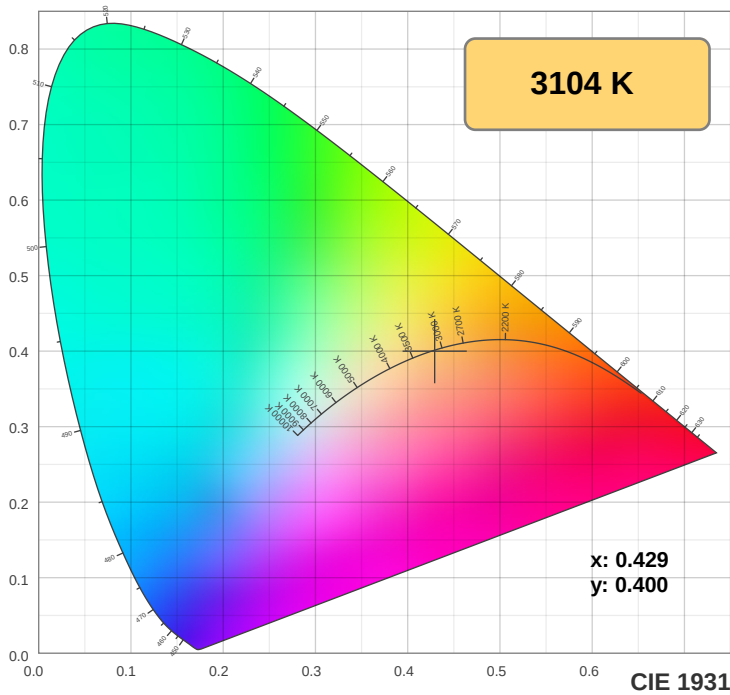
y: 0.400

Spectra

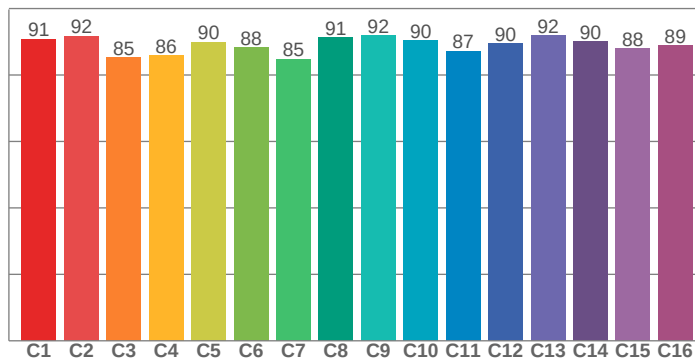


Power

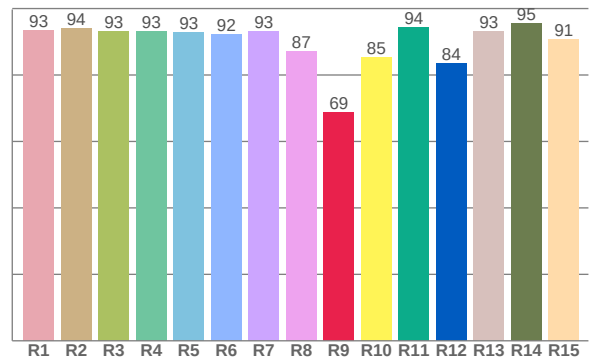




TM30: 89.2



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	93.9	93.1	93.1	92.7	92.2	93.2	87.2	68.8	85.3	94.2	83.6	93.2	95.4	90.8

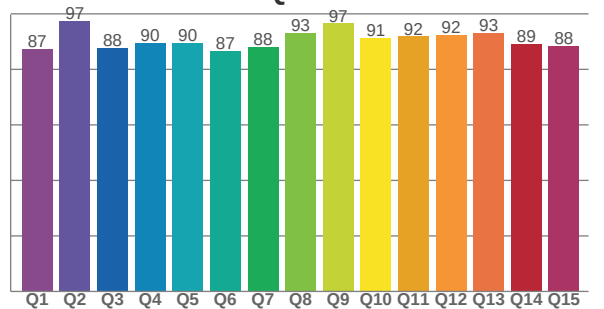
TM30 C values, 16 binned values out of total of 99 C values

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	84.9	91.3	92.0	90.3	87.2	89.5	91.8	90.0	87.9	88.9

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
87.4	97.3	87.8	89.6	89.5	86.6	88.0	93.0	96.5	91.4	91.8	92.5	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	Δuv
3104 K	92.4	68.8	89.2	103.1	90.2	0.429	0.400	0.247	0.346	0.0006

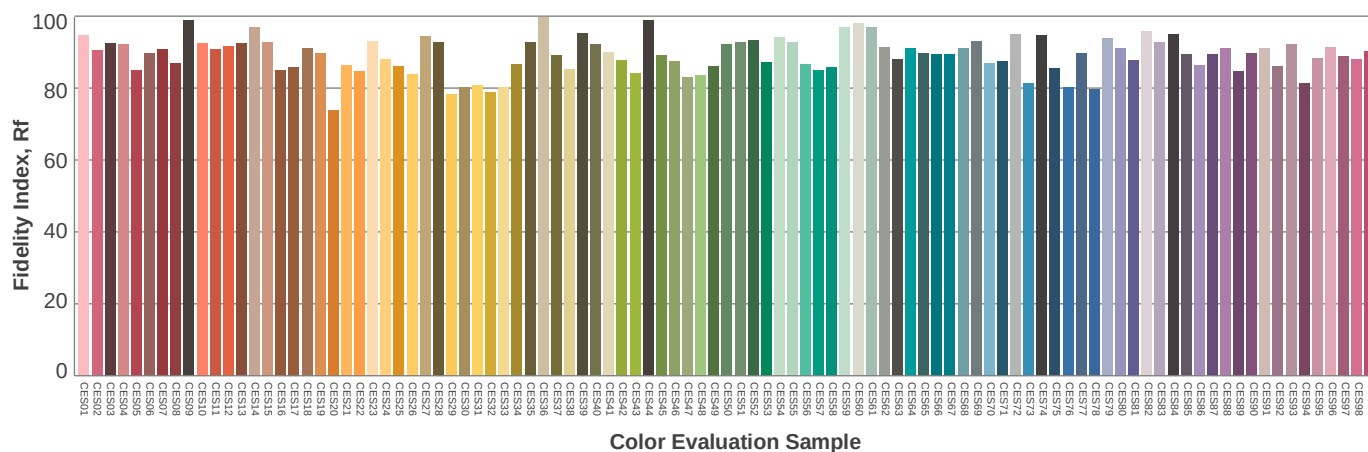
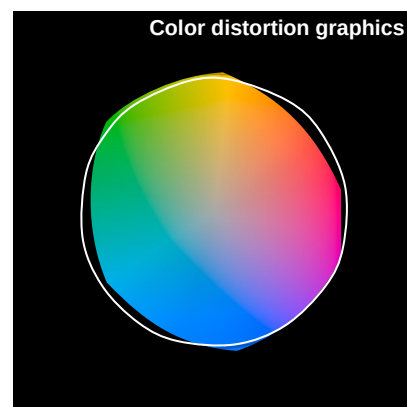
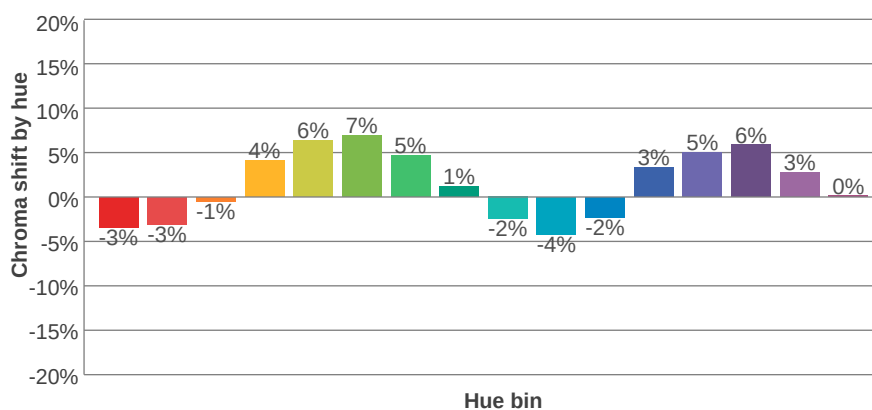
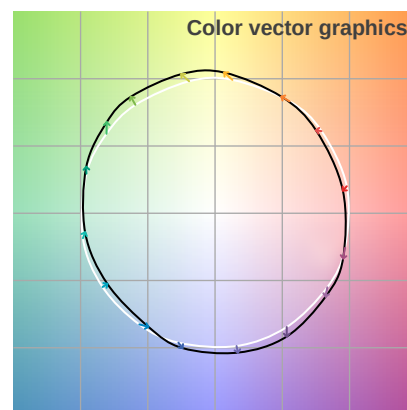
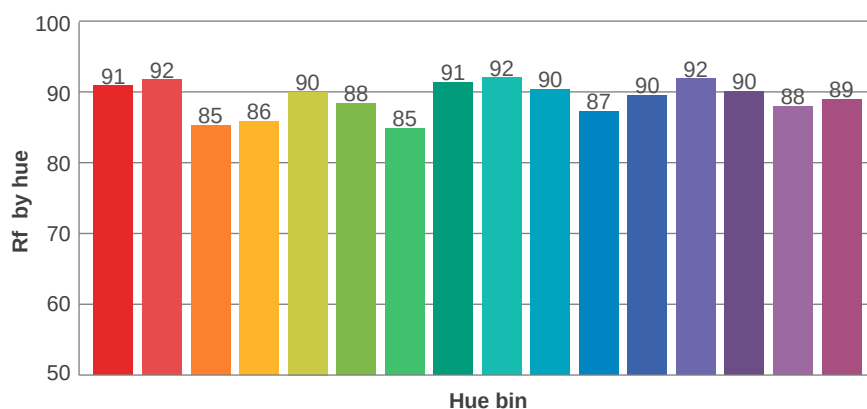
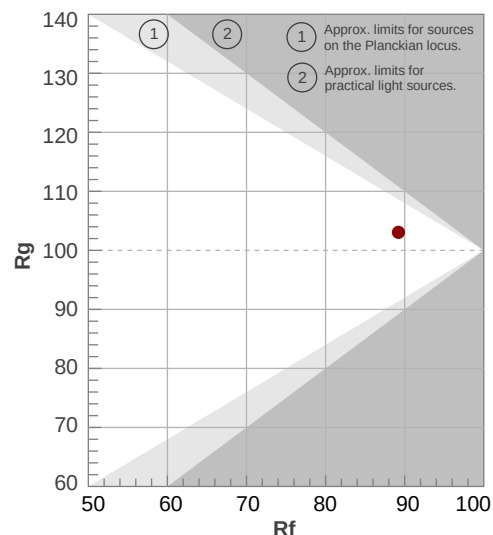
Rf 89.2

Fidelity index Rf

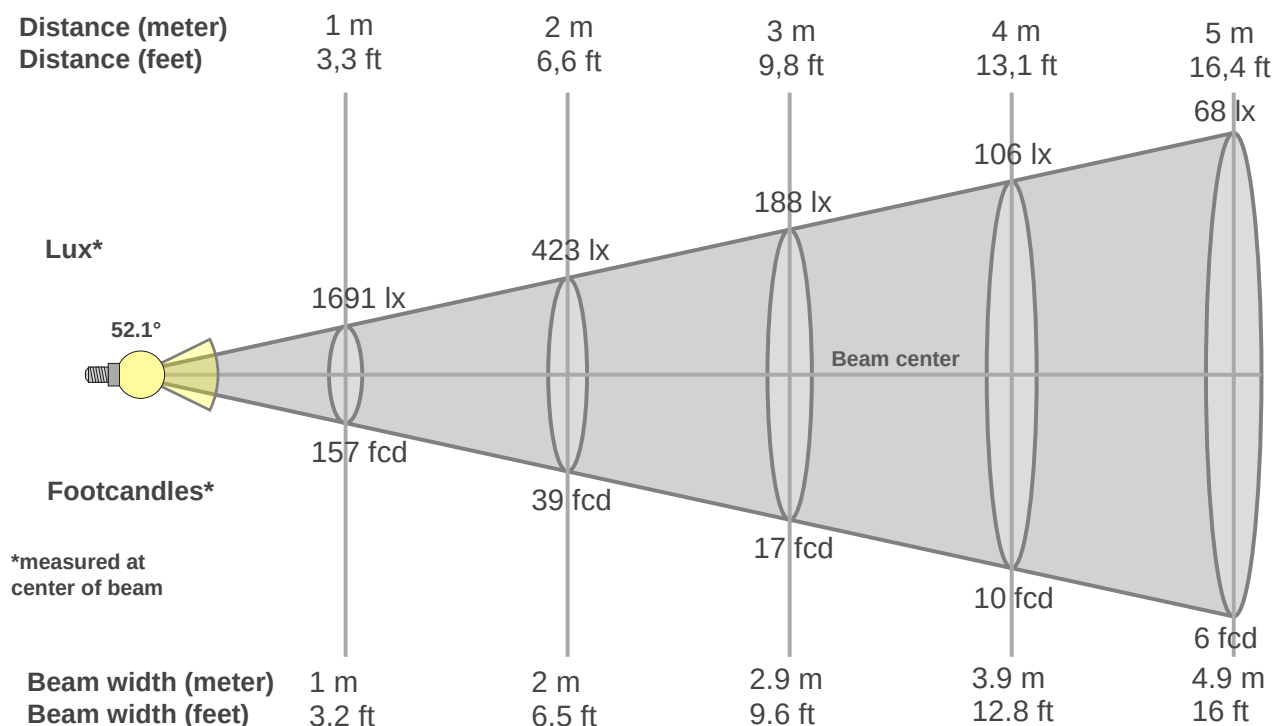
Rg 103.1

Gamut index Rg

Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	91	-3%	-3%
2	92	-3%	3%
3	85	-1%	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 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
1691lx	423lx	188lx	106lx	68lx	47lx	35lx	26lx	21lx	17lx	14lx	12lx	10lx	9lx	8lx	7lx	6lx	5lx	5lx	4lx
157.1fcd	39.3fcd	17.5fcd	9.8fcd	6.3fcd	4.4fcd	3.2fcd	2.5fcd	1.9fcd	1.6fcd	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°
1691	1686	1673	1652	1623	1591	1547	1488	1411	1313	1190	1050	890	728	576	449	343	261	200	153
100%	100%	99%	98%	96%	94%	91%	88%	83%	78%	70%	62%	53%	43%	34%	27%	20%	15%	12%	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°
1691	1685	1673	1654	1629	1591	1548	1487	1411	1319	1206	1074	930	774	622	489	379	294	224	170
100%	100%	99%	98%	96%	94%	92%	88%	83%	78%	71%	64%	55%	46%	37%	29%	22%	17%	13%	10%

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°
1691	1690	1682	1660	1634	1600	1553	1494	1420	1318	1194	1050	893	730	580	453	347	266	201	153
100%	100%	99%	98%	97%	95%	92%	88%	84%	78%	71%	62%	53%	43%	34%	27%	21%	16%	12%	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°
1691	1693	1685	1669	1642	1605	1561	1497	1422	1325	1208	1079	927	774	623	494	387	298	228	173
100%	100%	100%	99%	97%	95%	92%	89%	84%	78%	71%	64%	55%	46%	37%	29%	23%	18%	14%	10%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
52.1°	77.3°	96.4°	1.0%	1.0%

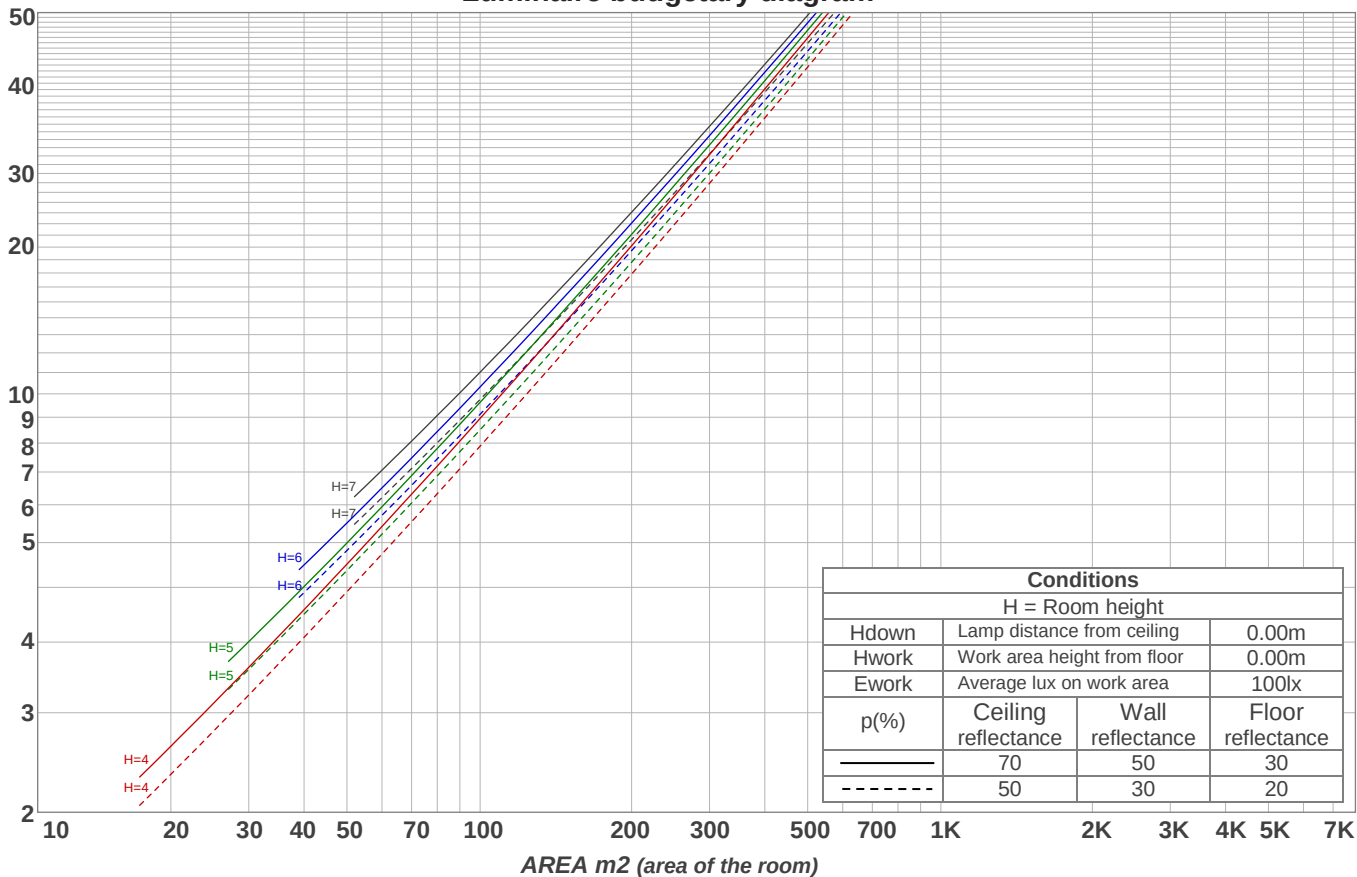
Light planning

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	108	104	100	97	106	102	99	96	99	96	93	96	94	91	93	91	90	88
3	103	97	92	89	101	96	91	88	93	90	86	91	88	85	89	86	84	82
4	98	91	86	82	97	90	85	81	88	84	80	86	82	80	84	81	79	77
5	94	86	80	76	92	85	80	76	83	79	75	81	78	74	80	77	74	72
6	89	81	75	71	88	80	75	71	79	74	70	77	73	70	76	72	70	68
7	85	76	71	67	84	76	70	67	75	70	66	73	69	66	72	68	66	64
8	81	72	67	63	80	72	66	63	71	66	62	70	65	62	69	65	62	61
9	78	69	63	59	77	68	63	59	67	62	59	66	62	59	66	62	59	57
10	75	65	60	56	74	65	60	56	64	59	56	63	59	56	63	59	56	54

LAMPS (number of lamps)

Luminaire budgetary diagram



Zonal Lumen Summary

[illegible]

