

Light efficiency:

52 Lumen/Watt

Output: 1105 lm

Light quality:

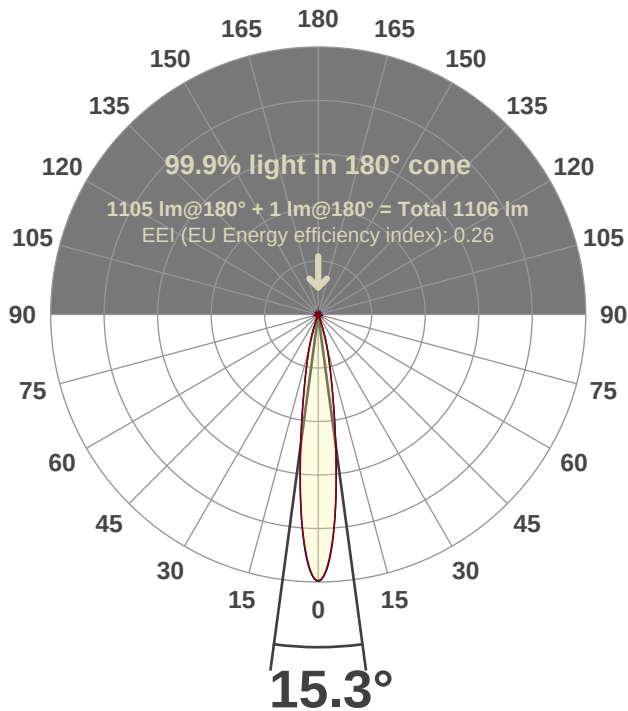
CRI: 92.3

Peak: 10321 cd

Power: 21.2 W



Beam angle



Test number:

CR4D-S-FL-C20-30k-15 (GRF-CZ20-SP-SQ)

Luminaire Model:

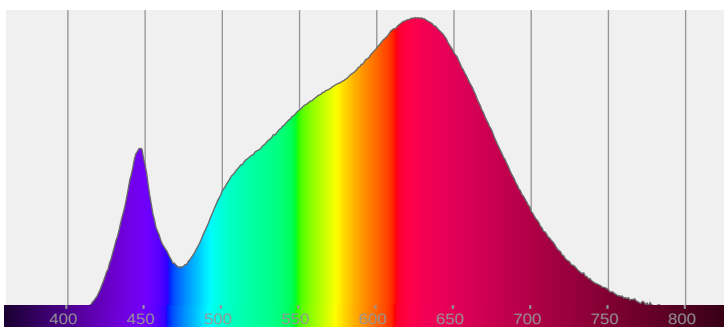
Core 4" Square Flat C20 30K 15°

Date and time:

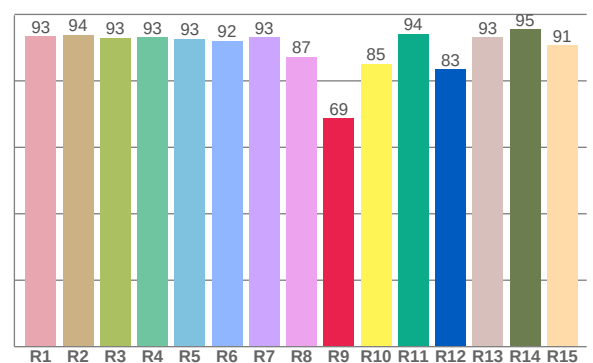
4/3/2017 11:53:49 AM

LUM: 1105

Spectra



CRI: 92.3 (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
	92.3	68.7	90.3	103.1	90.2	0.428	0.399	0.247	0.345	-0.0006

R_f 90.3

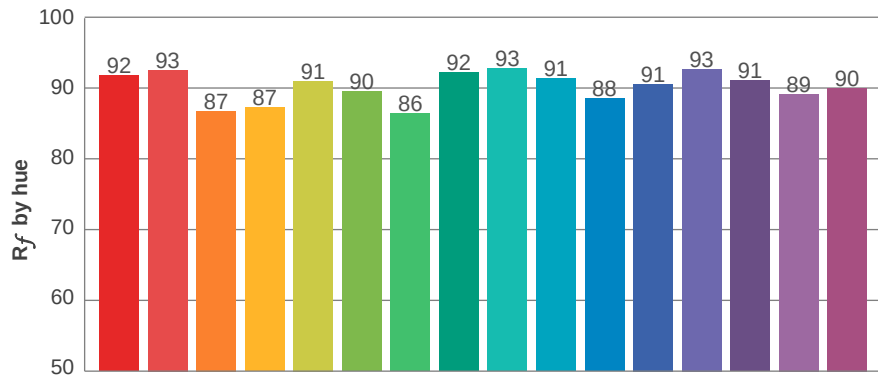
Fidelity index R_f

R_g 103.1

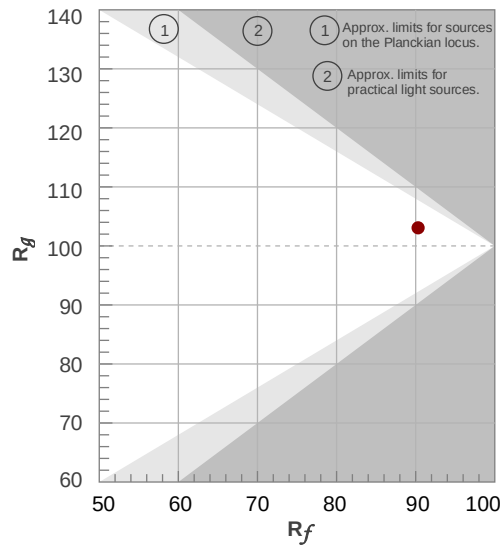
Gammut index R_g

TM30: 90.3

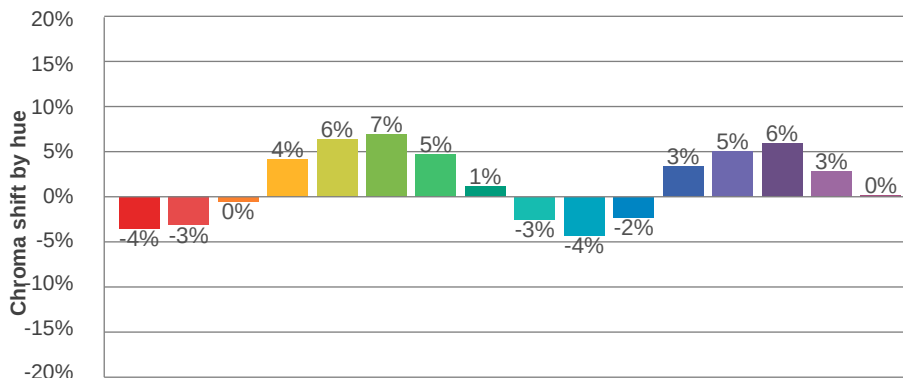
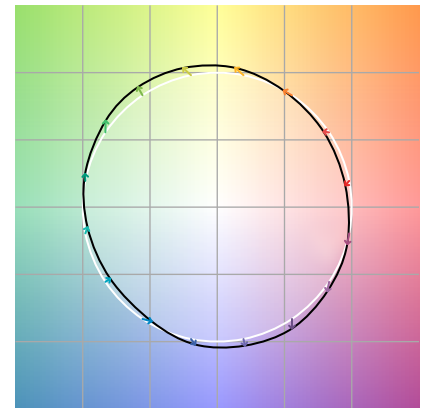
TM-30Color



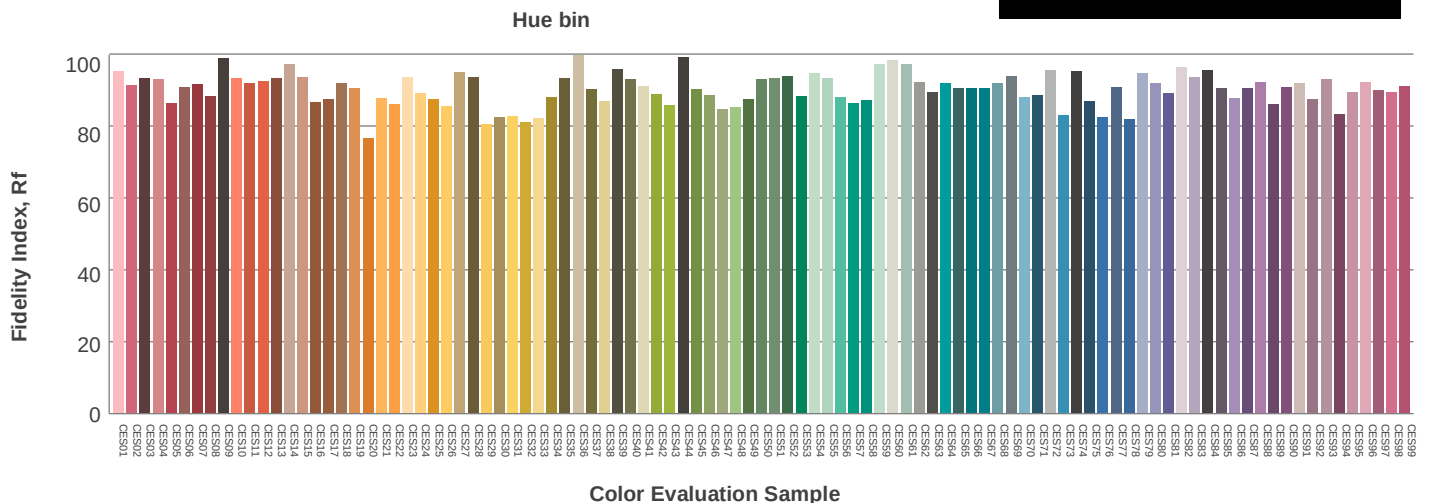
Hue Bin	R_f	Graphic shifts (%)	
		Chroma	Hue
1	92	-4%	-3%
2	93	-3%	3%
3	87	0%	7%
4	87	4%	7%
5	91	6%	5%
6	90	7%	-1%
7	86	5%	-7%
8	92	1%	-5%
9	93	-3%	-4%
10	91	-4%	0%
11	88	-2%	7%
12	91	3%	4%
13	93	5%	0%
14	91	6%	-4%
15	89	3%	-6%
16	90	0%	-8%



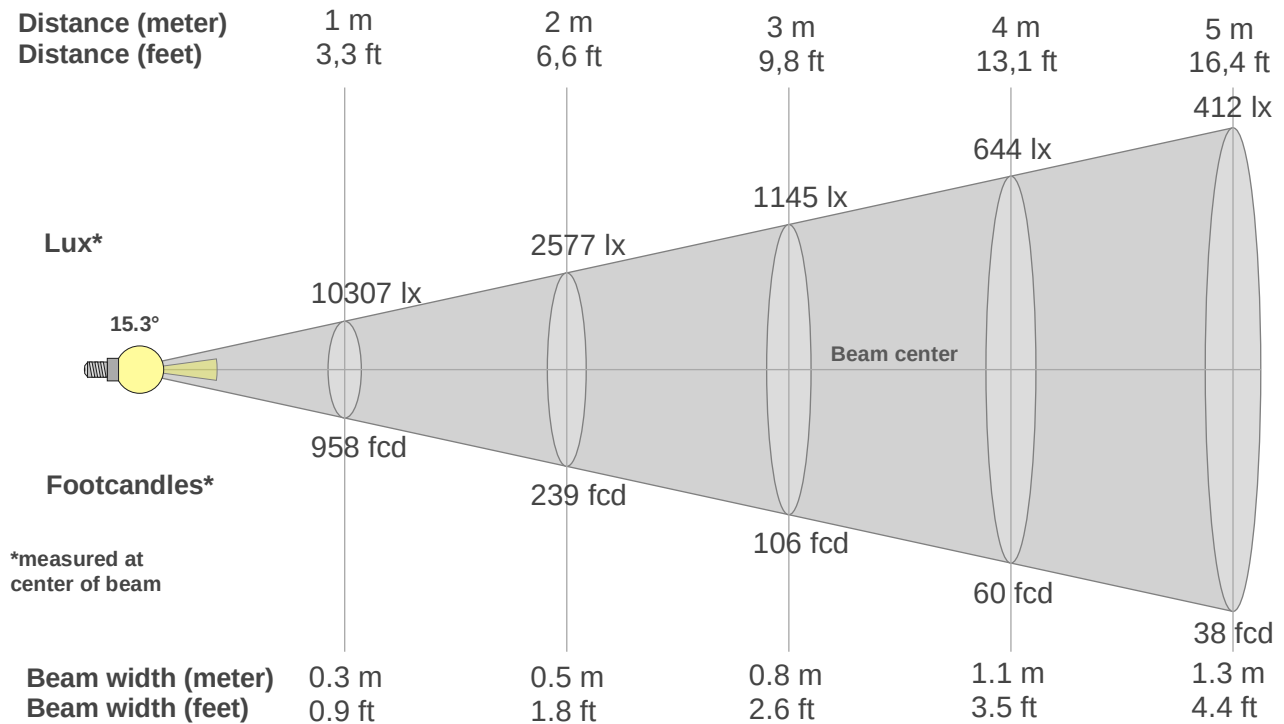
Color vector graphics



Color distortion



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
10307lx	2577lx	1145lx	644lx	412lx	286lx	210lx	161lx	127lx	103lx	85lx	72lx	61lx	53lx	46lx	40lx	36lx	32lx	29lx	26lx
957.6fcd	239.4fcd	106.4fcd	59.8fcd	38.3fcd	26.6fcd	19.5fcd	15fcd	11.8fcd	9.6fcd	7.9fcd	6.6fcd	5.7fcd	4.9fcd	4.3fcd	3.7fcd	3.3fcd	3fcd	2.7fcd	2.4fcd

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°
10.3K	10.2K	9.8K	9.2K	8.5K	7.6K	6.6K	5.7K	4.8K	4.0K	3.3K	2.8K	2.3K	1.9K	1.6K	1.4K	1.1K	0.9K	0.7K	0.5K
100%	99%	95%	89%	82%	74%	64%	55%	46%	39%	32%	27%	22%	19%	16%	13%	11%	9%	7%	5%

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°
10.3K	10.2K	9.8K	9.3K	8.5K	7.6K	6.7K	5.7K	4.8K	4.0K	3.3K	2.8K	2.3K	2.0K	1.6K	1.4K	1.1K	0.9K	0.7K	0.5K
100%	99%	95%	90%	83%	74%	65%	55%	47%	39%	32%	27%	23%	19%	16%	13%	11%	9%	7%	5%

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°
10.3K	10.2K	9.8K	9.2K	8.5K	7.6K	6.6K	5.7K	4.8K	4.0K	3.3K	2.8K	2.3K	1.9K	1.6K	1.4K	1.1K	0.9K	0.7K	0.5K
100%	99%	95%	89%	82%	74%	64%	55%	46%	39%	32%	27%	22%	19%	16%	13%	11%	9%	7%	5%

Intensities in 270° c-plane

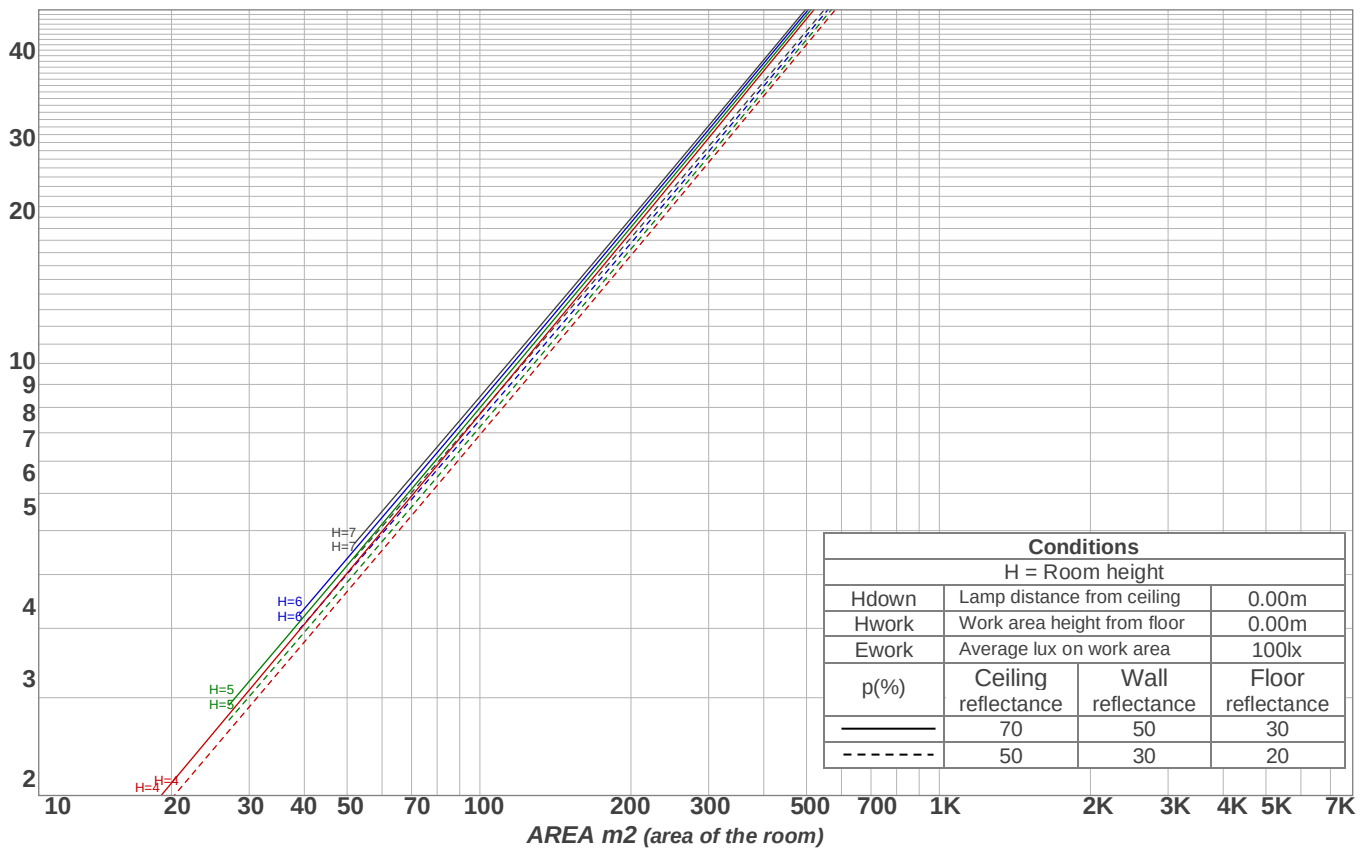
0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°
10.3K	10.2K	9.8K	9.3K	8.5K	7.6K	6.7K	5.7K	4.8K	4.0K	3.3K	2.8K	2.3K	2.0K	1.6K	1.4K	1.1K	0.9K	0.7K	0.5K
100%	99%	95%	90%	83%	74%	65%	55%	47%	39%	32%	27%	23%	19%	16%	13%	11%	9%	7%	5%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
15.3°	34.6°	45.6°	99.1%	98.8%

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	112	110	113	111	110	108	107	106	105	104	103	102	100	100	99	97
2	112	109	106	104	110	107	105	103	104	102	101	101	100	99	99	98	97	95
3	109	105	102	99	108	104	101	99	101	99	97	99	97	96	97	96	94	93
4	107	102	98	96	105	101	98	95	99	96	94	97	95	93	96	94	92	91
5	104	99	96	93	103	98	95	93	97	94	92	95	93	91	94	92	90	89
6	102	97	93	90	101	96	93	90	95	92	90	93	91	89	92	90	89	88
7	100	94	91	88	99	94	90	88	93	90	88	92	89	87	91	89	87	86
8	98	92	89	86	97	92	89	86	91	88	86	90	88	86	89	87	85	85
9	96	90	87	85	95	90	87	85	89	86	84	89	86	84	88	86	84	83
10	94	89	85	83	93	88	85	83	88	85	83	87	85	83	87	84	82	82

Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
580 lm	419 lm	82.1 lm	11.8 lm	1.85 lm	2.83 lm	3.81 lm	2.75 lm	2.08 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	16.0	16.3	16.1	16.5	16.7	14.8	15.1	14.8	15.3	15.4
	3H	17.5	18.0	17.9	18.2	18.4	16.7	17.2	17.1	17.4	17.5
	4H	18.3	18.8	18.7	19.0	19.2	17.9	18.4	18.3	18.6	18.8
	6H	19.3	19.7	19.6	20.0	20.3	19.3	19.7	19.6	20.0	20.3
	8H	19.9	20.2	20.2	20.6	20.9	20.0	20.4	20.3	20.7	21.1
	12H	20.7	21.1	21.1	21.4	21.9	20.8	21.2	21.2	21.6	22.0
4H	2H	16.3	16.8	16.7	17.0	17.3	15.3	15.8	15.7	16.0	16.3
	3H	18.3	18.7	18.7	19.1	19.5	17.7	18.1	18.1	18.5	18.9
	4H	19.2	19.6	19.6	20.0	20.5	19.1	19.4	19.5	19.9	20.4
	6H	20.4	20.9	20.9	21.2	21.5	20.6	21.0	21.1	21.3	21.7
	8H	21.2	21.6	21.7	21.9	22.2	21.5	21.9	22.0	22.2	22.5
	12H	22.2	22.5	22.7	22.9	23.3	22.4	22.7	22.9	23.1	23.5
8H	4H	19.8	20.2	20.3	20.5	20.8	19.6	20.0	20.2	20.4	20.7
	6H	21.3	21.5	21.8	22.0	22.5	21.5	21.7	22.0	22.2	22.7
	8H	22.3	22.5	22.8	23.0	23.6	22.6	22.8	23.1	23.3	23.9
	12H	23.6	23.7	24.2	24.2	24.8	23.7	23.9	24.3	24.4	25.0
12H	4H	19.9	20.2	20.4	20.6	21.0	19.7	20.0	20.2	20.4	20.9
	6H	21.6	21.8	22.1	22.3	22.9	21.8	21.9	22.3	22.5	23.1
	8H	22.7	22.8	23.3	23.4	23.9	22.9	23.1	23.5	23.6	24.2
Corrected glare indices referring to 1105 lm total luminous flux											