

Light efficiency:



Output: 7283 lm

Light quality:



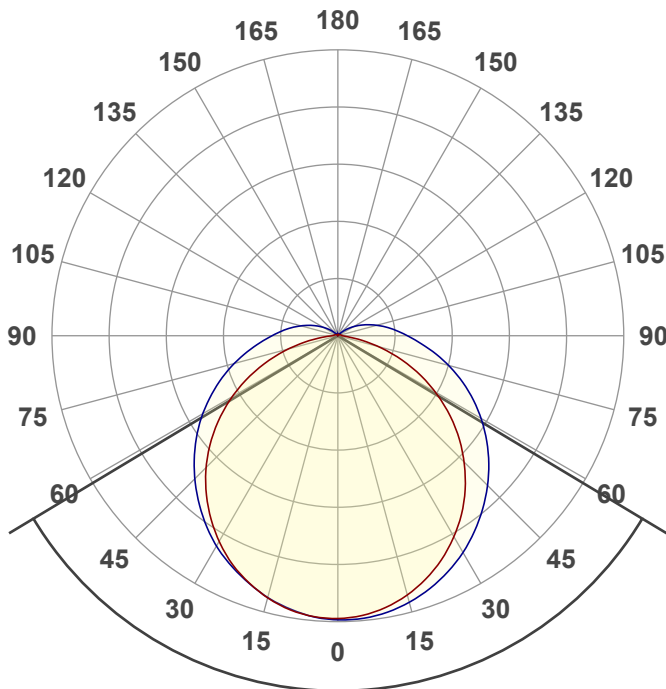
Peak: 2099 cd

Color temperature:



Power: 60.5 W

PF: 1.0



Product name:

**C2103-804F (60 W)**

Date and time:

**5/23/2023 2:16:47 PM**

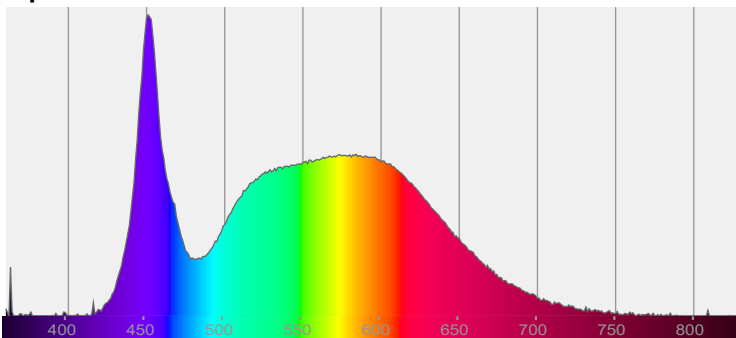
Beam angle

**118°**

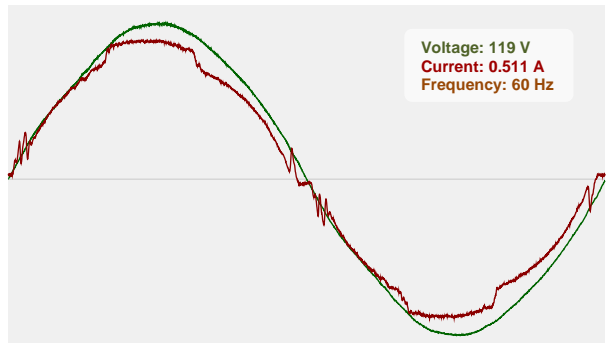


CIE 1931  
x: 0.343  
y: 0.354

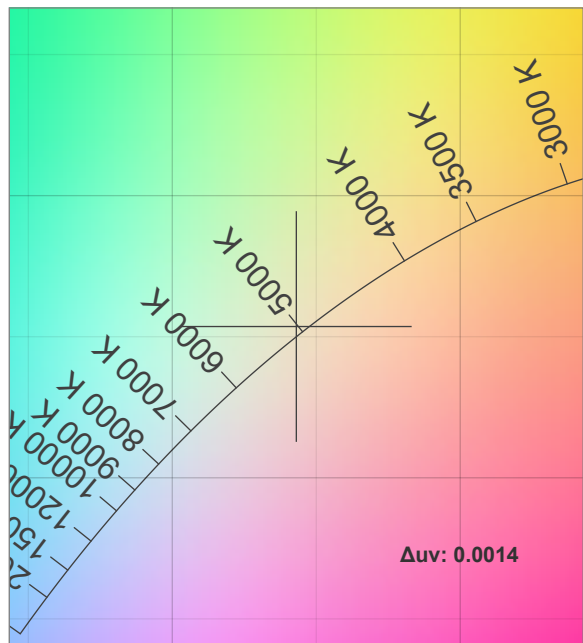
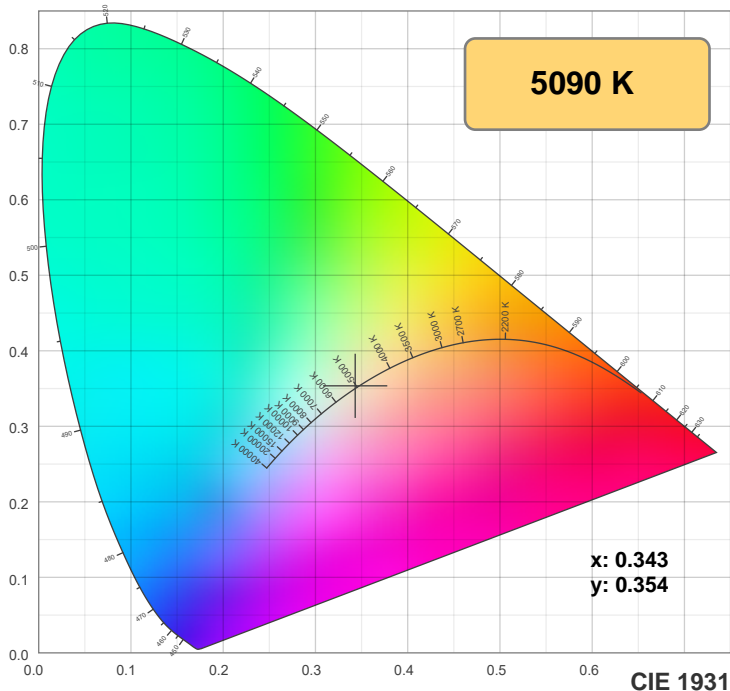
Spectra



Power

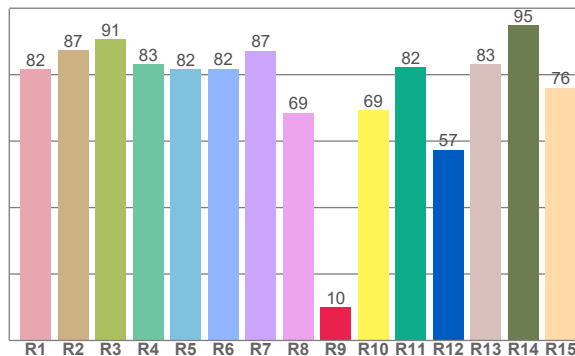
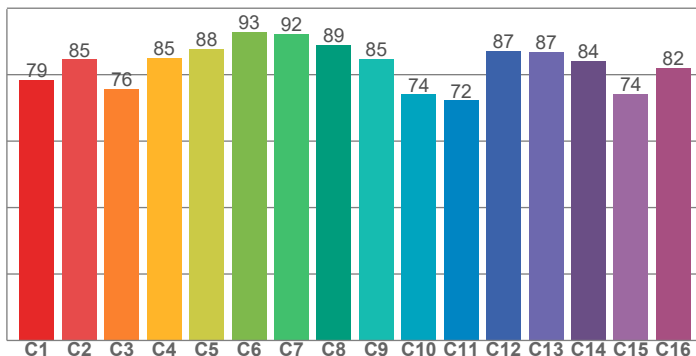


## Color Specifications



**TM30: 82.8**

**CRI: 82.8 (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
81.6	87.4	90.7	83.1	81.7	81.8	87.2	68.5	9.9	69.3	82.3	57.4	83.1	94.9	76.1

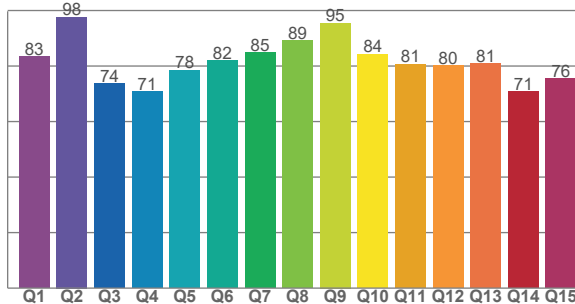
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
78.5	84.7	75.8	85.0	87.7	92.8	92.2	88.9	84.8	74.1	72.2	87.2	86.9	84.2	74.3	82.0

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
83.3	97.7	73.7	70.8	78.5	82.0	84.9	89.1	95.5	84.2	80.6	80.2	80.9	70.9	75.5

**CQS: 80.3**



## 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 division from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	$\Delta uv$
5090 K	82.8	9.9	82.8	96.5	80.3	0.343	0.354	0.209	0.324	0.0014

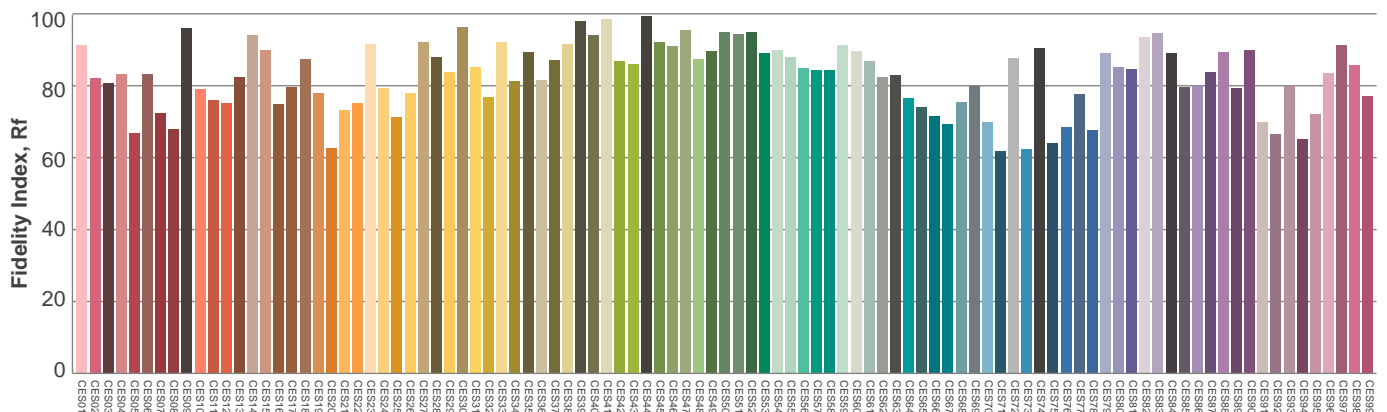
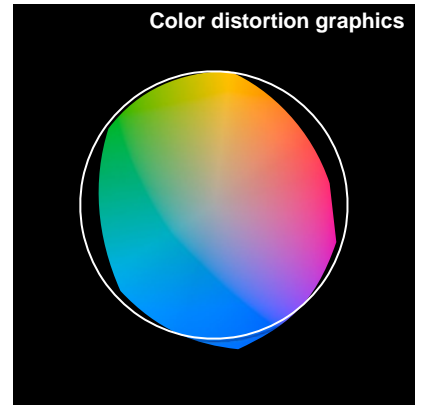
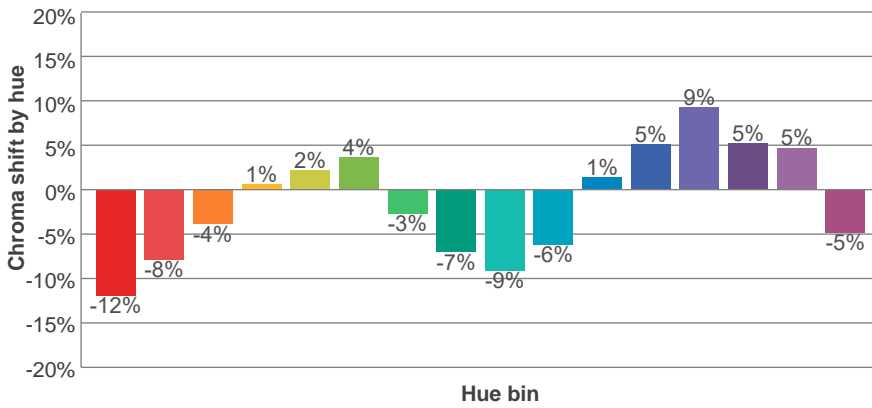
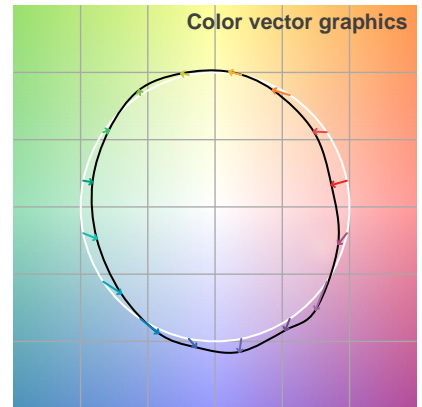
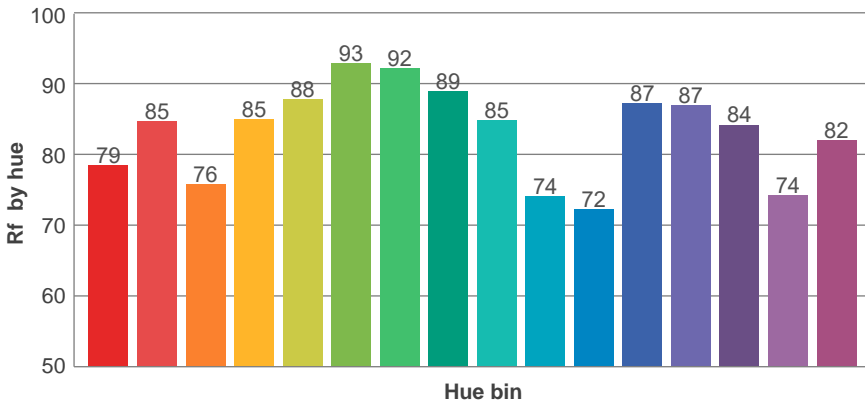
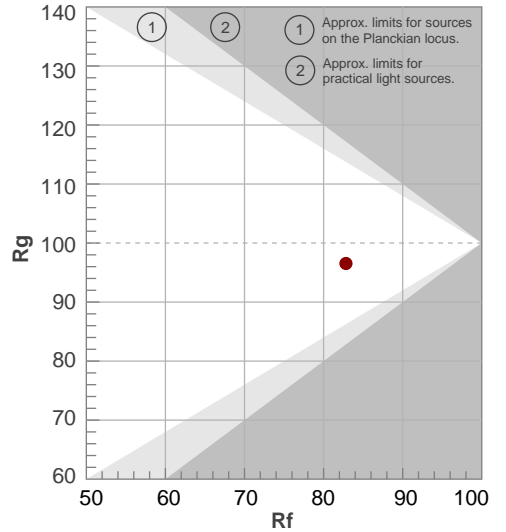


### TM30 Report

**Rf 82.8**  
Fidelity index Rf

**Rg 96.5**  
Gammut index Rg

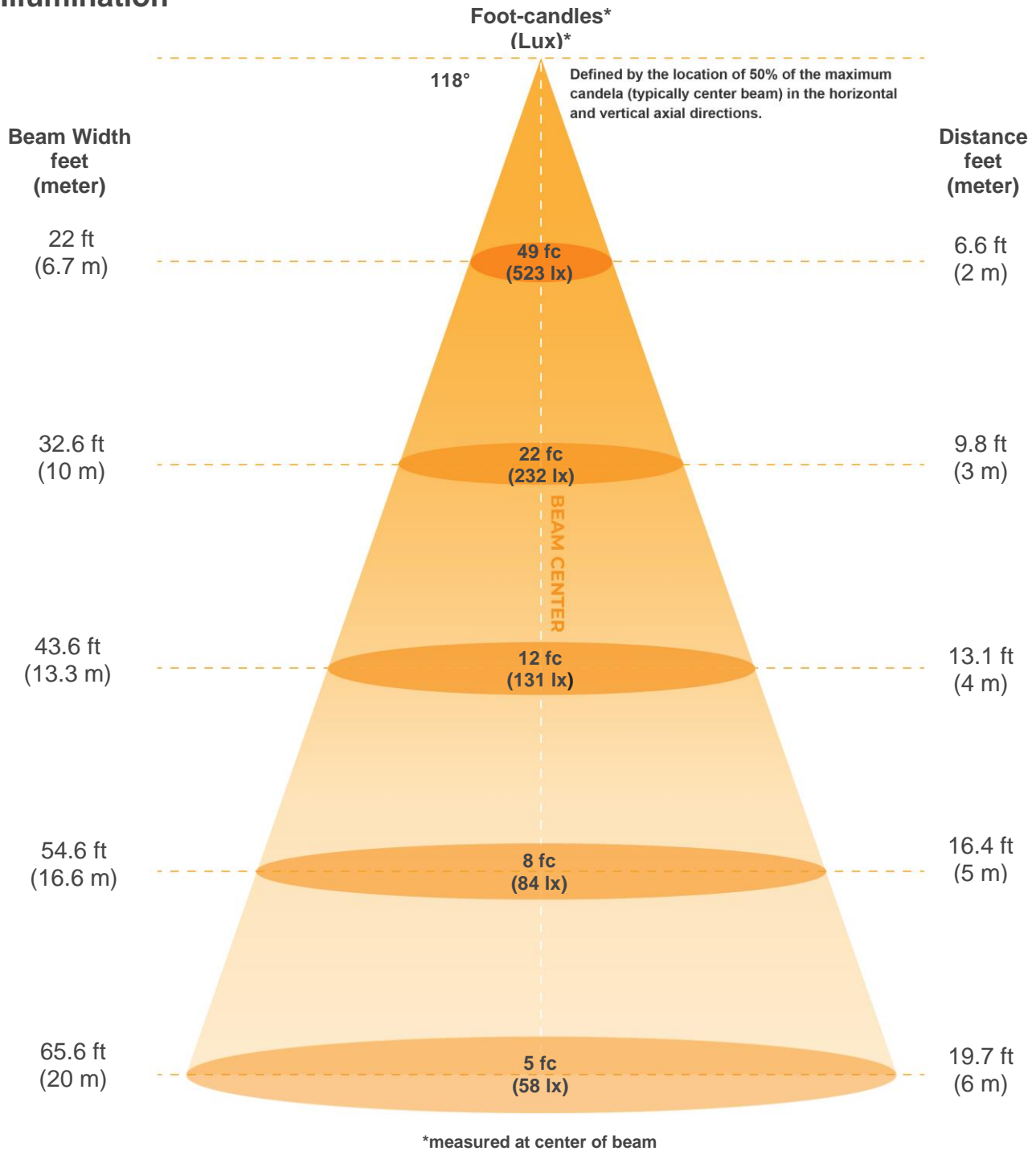
Hue Bin	R <sub>f</sub>	Graphic shifts (%)	
		Chroma	Hue
1	79	-12%	-1%
2	85	-8%	6%
3	76	-4%	12%
4	85	1%	9%
5	88	2%	5%
6	93	4%	-1%
7	92	-3%	-4%
8	89	-7%	0%
9	85	-9%	6%
10	74	-6%	15%
11	72	1%	17%
12	87	5%	6%
13	87	9%	-3%
14	84	5%	-8%
15	74	5%	-22%
16	82	-5%	-9%



Color Evaluation Sample



## Illumination



### Beam intensities from 1-20m

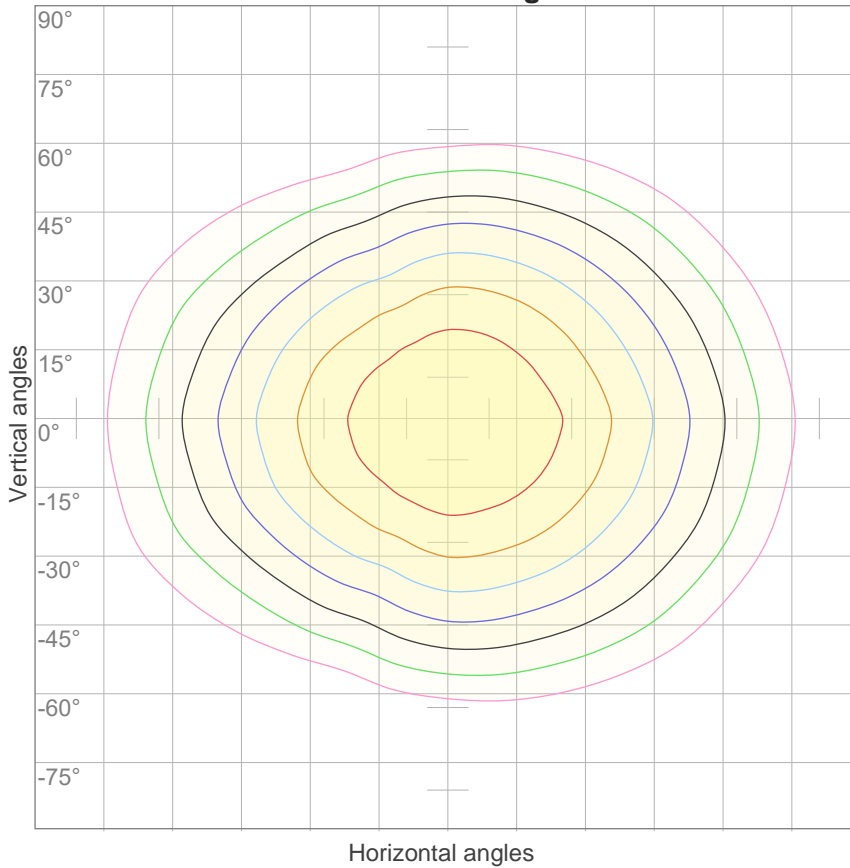
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
3.3ft	6.6ft	9.8ft	13.1ft	16.4ft	19.7ft	23ft	26.2ft	29.5ft	32.8ft	36.1ft	39.4ft	42.7ft	45.9ft	49.2ft	52.5ft	55.8ft	59.1ft	62.3ft	65.6ft
2091lx	523lx	232lx	131lx	84lx	58lx	43lx	33lx	26lx	21lx	17lx	15lx	12lx	11lx	9lx	8lx	7lx	6lx	6lx	5lx
194.2fc	48.6fcd	21.6fcd	12.1fcd	7.8fcd	5.4fcd	4fcd	3fcd	2.4fcd	1.9fcd	1.6fcd	1.3fcd	1.1fcd	1fcd	0.9fcd	0.8fcd	0.7fcd	0.6fcd	0.5fcd	0.5fcd

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
118°	197.1°	230.1°	65.3%	43.8%



**ISO Diagrams**

**ISO candela diagram**



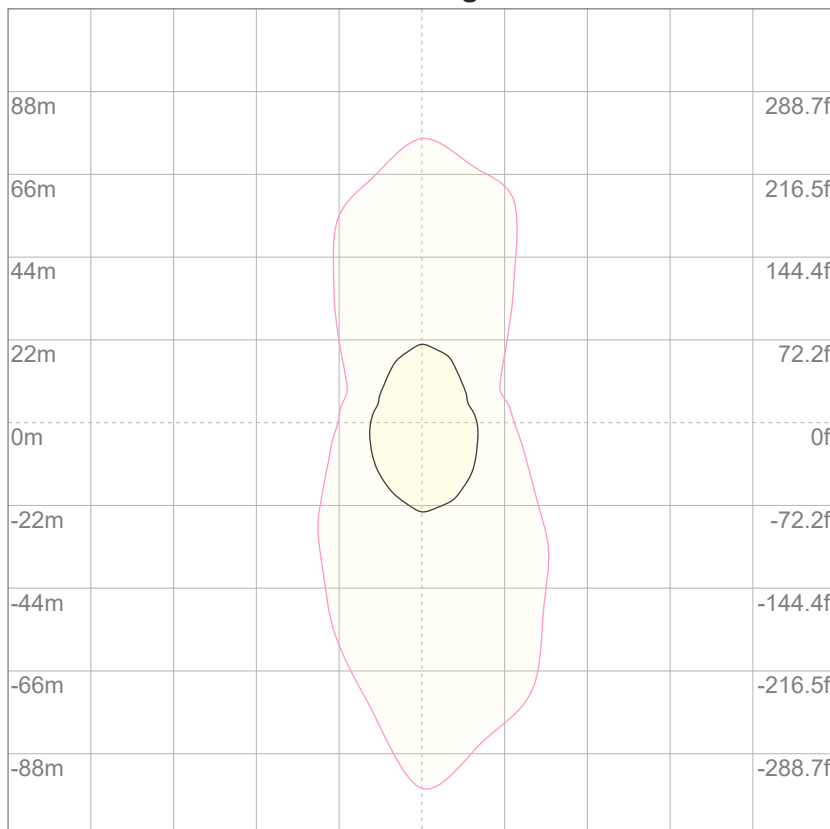
10%	209 cd
20%	418 cd
30%	627 cd
40%	836 cd
50%	1045 cd
60%	1254 cd
70%	1463 cd
80%	1672 cd
90%	1881 cd

Conditions:

Number of c-planes: 16

Candela at center: 2091 cd

**ISO lux diagram**



3%	0.627 lx
5%	1.05 lx
10%	2.09 lx
30%	6.27 lx
50%	10.5 lx

Conditions:

Number of c-planes: 16

Lux at center: 20.9 lx

*Lux distribution on a surface when lamp is mounted at 10 meters from the surface.*

Mounting height: 10 meters (33 feet) **UGR**



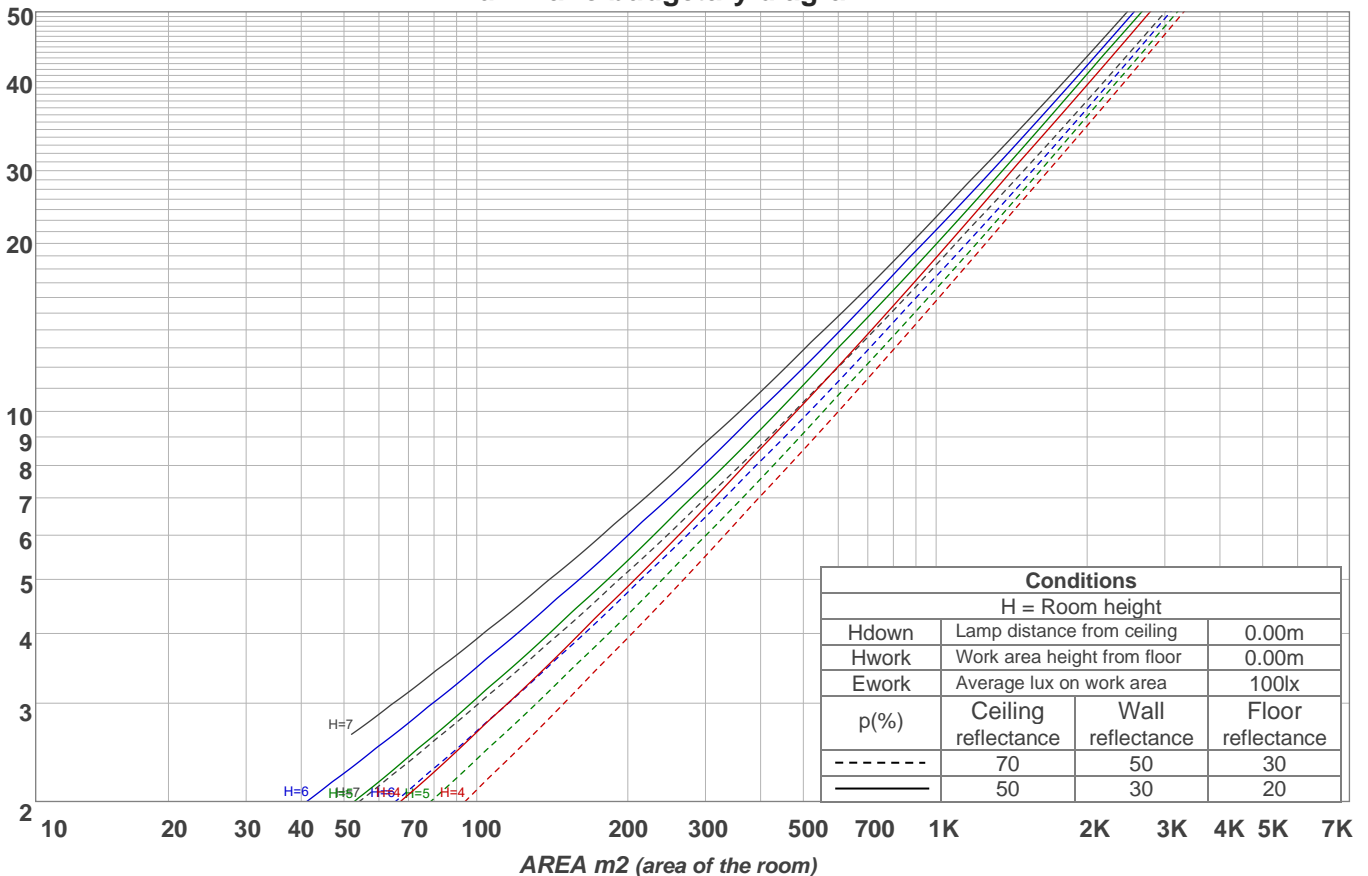
## Light Planning

### 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	20	0
<b>RCR</b>	<b>(RCR: Room Cavity Ratio)</b>																		
	Room Values are expressed as percentage of Lumens delivered to the task surface																		
0	117	117	117	117	113	113	113	113	107	107	107	100	100	100	95	95	95	92	
1	105	99	94	90	101	96	91	87	90	86	83	85	82	79	80	78	75	72	
2	95	85	78	72	91	83	76	70	78	72	67	73	69	64	69	65	62	59	
3	86	75	66	59	83	72	64	58	68	61	56	64	58	54	61	56	52	49	
4	78	66	56	49	75	64	55	49	60	53	47	57	51	45	54	48	44	41	
5	72	59	49	42	69	57	48	42	54	46	40	51	44	39	48	43	38	36	
6	66	53	43	37	64	51	42	36	48	41	35	46	39	34	44	38	33	31	
7	61	48	39	32	59	46	38	32	44	36	31	42	35	30	40	34	29	27	
8	57	43	35	29	55	42	34	28	40	33	28	38	32	27	37	31	26	24	
9	53	40	31	26	51	39	31	25	37	30	25	35	29	24	34	28	24	22	
10	50	37	29	23	48	36	28	23	34	27	22	33	26	22	31	26	22	20	

LAMPS (number of lamps)

### Luminaire budgetary diagram



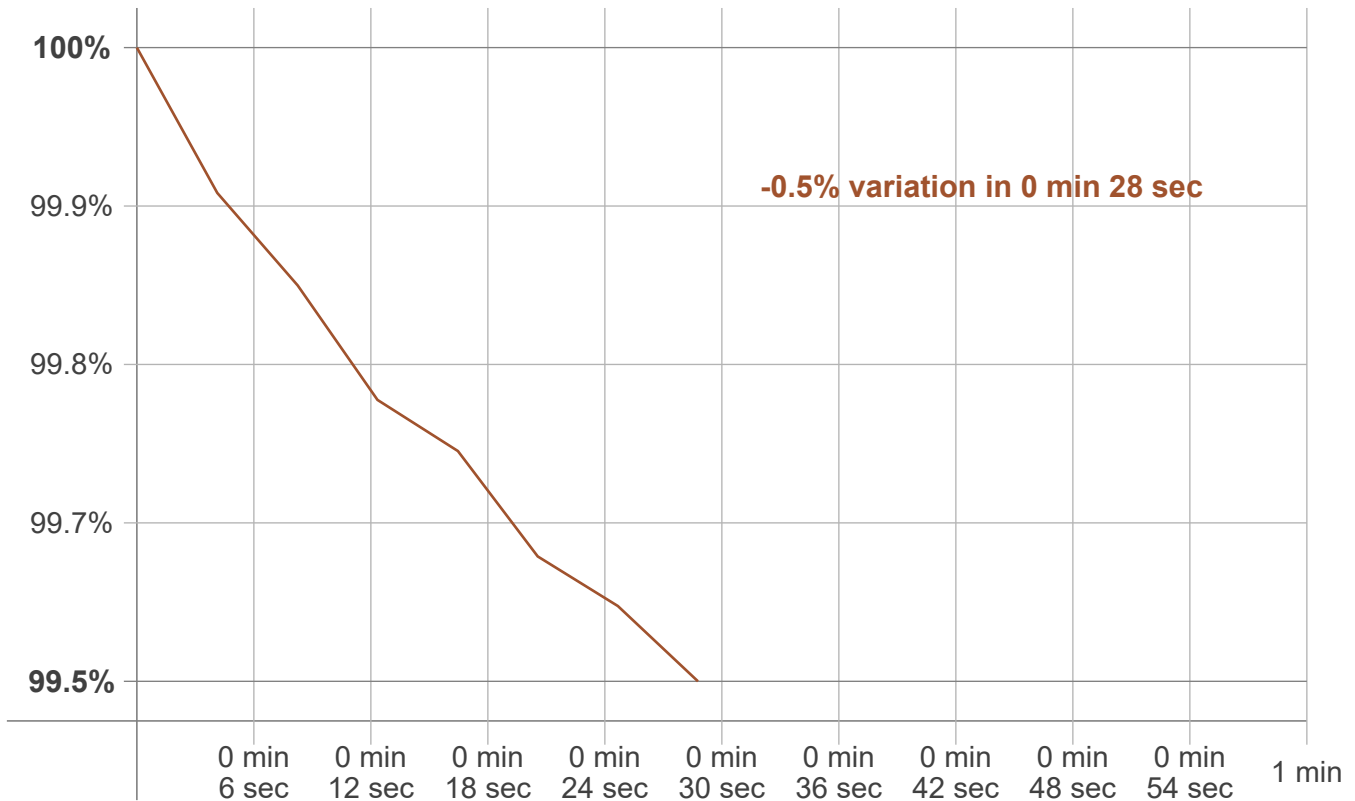
### Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
197 lm	564 lm	852 lm	1032 lm	1088 lm	1023 lm	858 lm	640 lm	433 lm
90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
282 lm	170 lm	87.6 lm	35.4 lm	10.5 lm	4.95 lm	3.20 lm	1.80 lm	0.605 lm



**Stabilization**

**Warmup curve**



**Warmup result**

<b>Warmup time:</b>	<b>Not completed</b>
<b>Warmup variation</b>	<b>-0.5%</b>

**Warmup conditions**

<b>Stable period:</b>	<b>15 min</b>
<b>Stable change max:</b>	<b>2.0%</b>
<b>Minimum time:</b>	<b>15 min</b>

**Color temperature change**

CCT start	CCT change	CCT end
5086 K	+4 K	5090 K

**Output change**

Output start	Output change	Output end
7301 lm	-18 lm	7283 lm

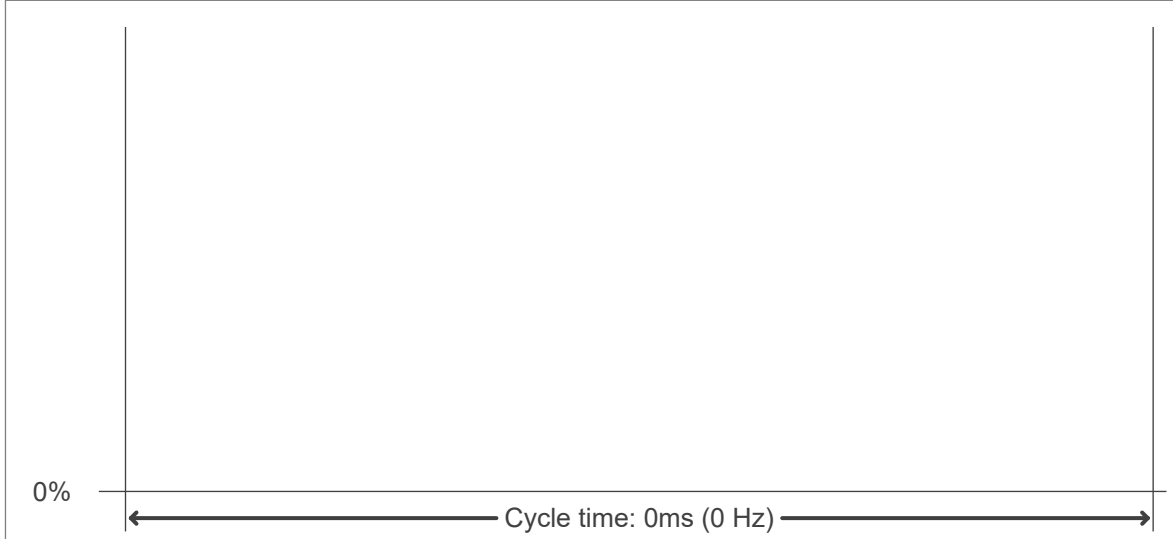


## Flicker Specifications

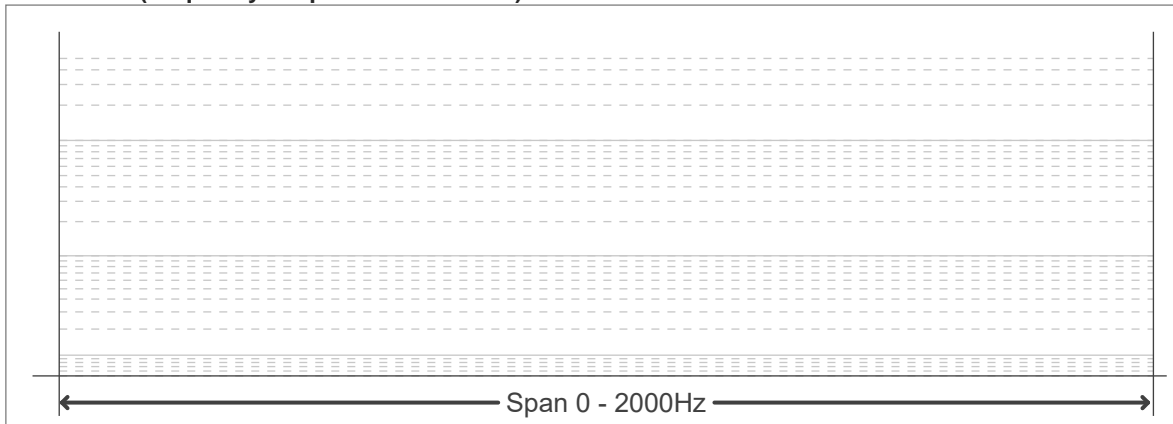
Flicker curve (complete sampled flicker signal)



Flicker frame (frame of one flicker period)



Flicker FFT (frequency scope of flicker curve)



**Flicker results:**

<b>Flicker frequency:</b>	<b>n/a Hz</b>
<b>Flicker index:</b>	<b>n/a</b>
<b>Flicker percentage:</b>	<b>n/a %</b>
<b>SVM: (Visual flicker)</b>	<b>n/a</b>

**Flicker conditions:**

<b>Sample rate:</b>	<b>n/a samples/second</b>
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