PHOTOMETRIC TEST REPORT

KOS ROUND 140 LED TEXTURED
WHITE

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KOS ROUND 140 LED TEXTURED WHITE

LIGHT EFFICIENCY:

59 Lumen/Watt

LIGHT QUALITY:

CRI: 92.6

COLOR TEMPERATURE:

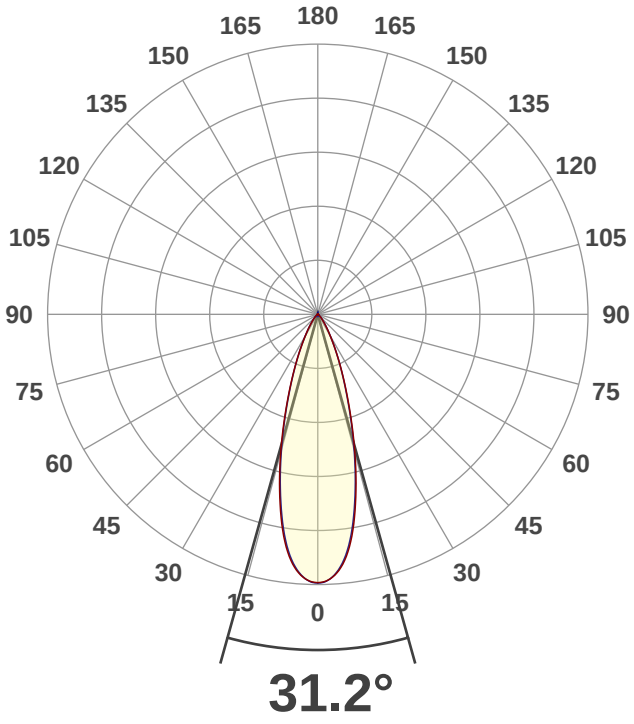
2975 K

OUTPUT: 761 lm

PEAK: 2084 cd

POWER: 12.8 W

PF: 0.97



CIE 1931
x: 0.438
y: 0.403

Tracking number: n/a

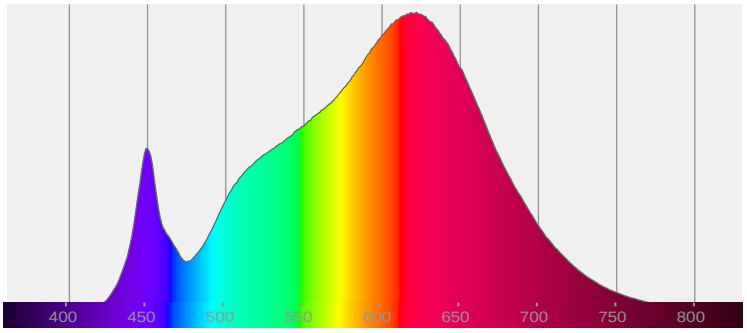
Product name:
Kos Round 140 LED Textured White

Item number:
1326067

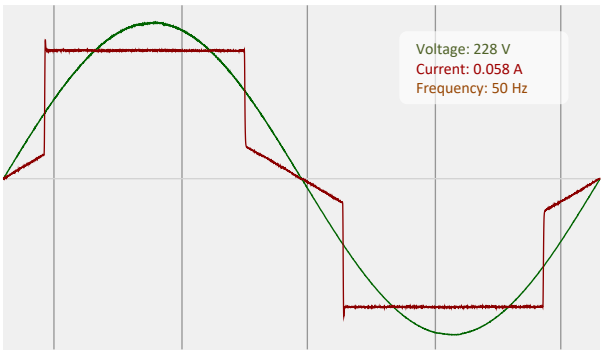
Date and time:
05/05/2021 10:50:59

Description:
IP65 LED Surface Mounted Downlight

SPECTRA

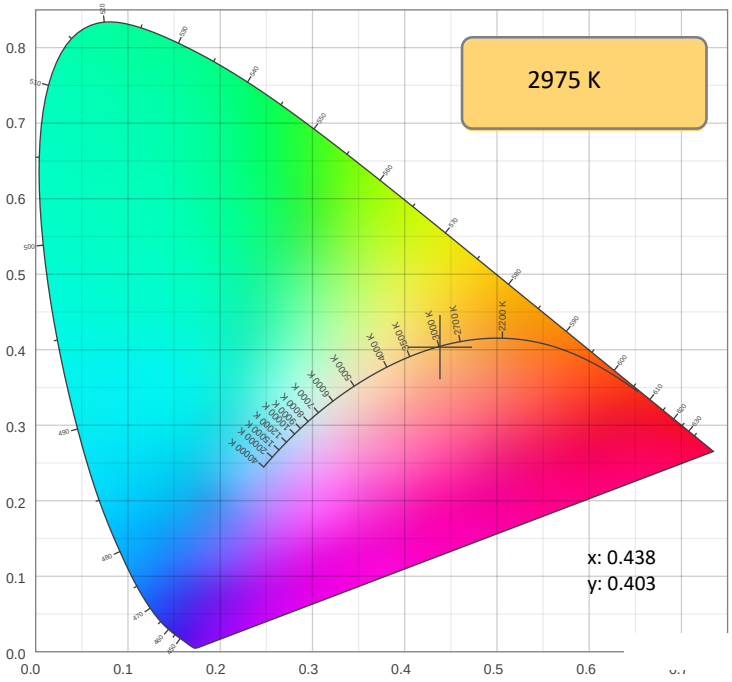


POWER

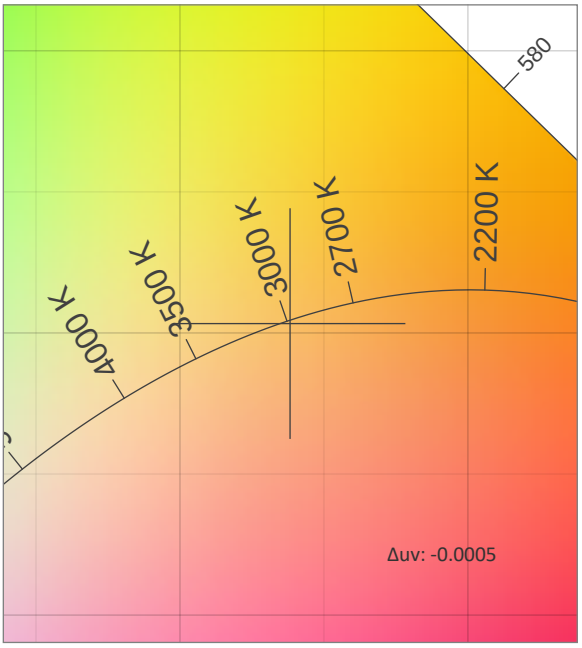


KOS ROUND 140 LED TEXTURED WHITE

COLOR DETAILS

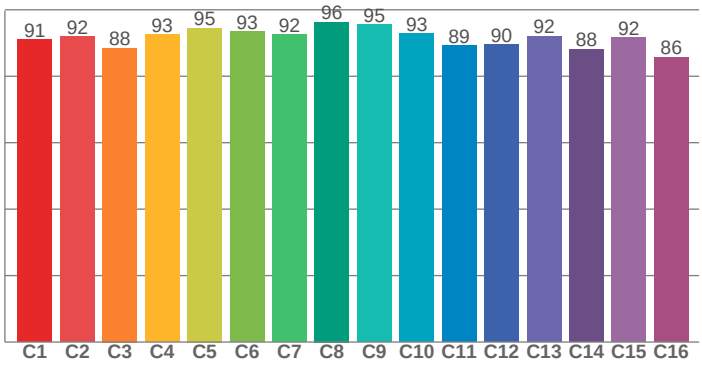


CIE 1931

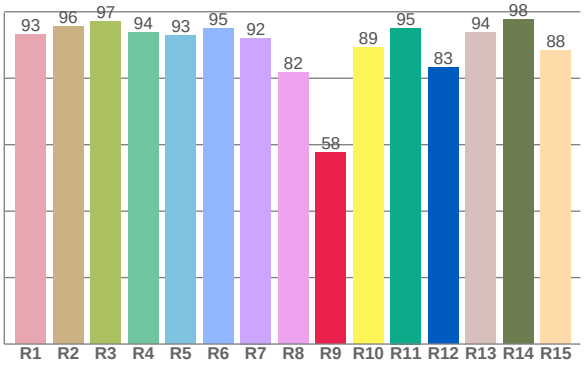


CIE 1931 ZOOM

TM30: 91.6



CRI: 92.6 (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
93.0	95.6	97.1	93.8	92.9	94.9	92.1	81.7	57.7	89.2	95.1	83.3	93.7	97.7	88.4

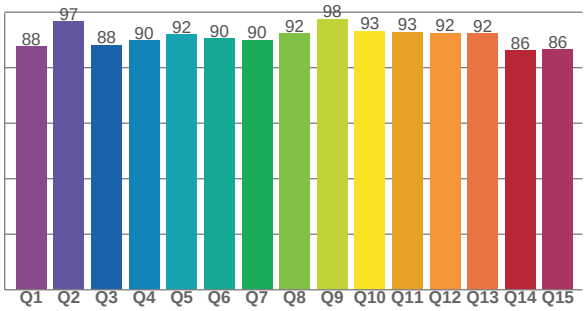
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
91.0	92.0	88.5	92.5	94.5	93.4	92.5	96.3	95.5	92.9	89.3	89.6	92.1	88.2	91.6	85.8

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
87.6	96.6	88.3	89.8	92.0	90.5	89.9	92.3	97.6	93.1	92.9	92.4	92.2	86.2	86.5

CQS: 90.5



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 diviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
2975 K	92.6	57.7	91.6	100.8	90.5	0.438	0.403	0.252	0.348	-0.0005

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TM30 DETAILS

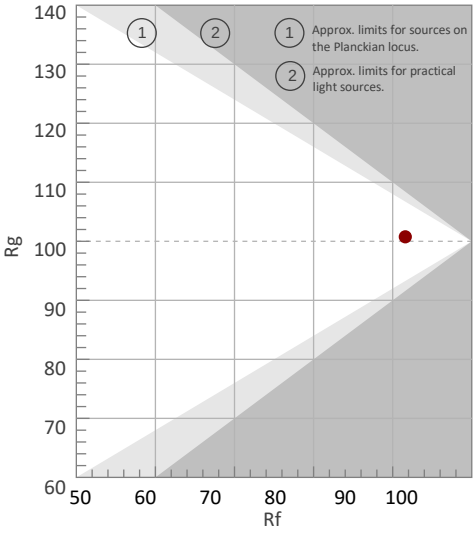
Rf 91.6

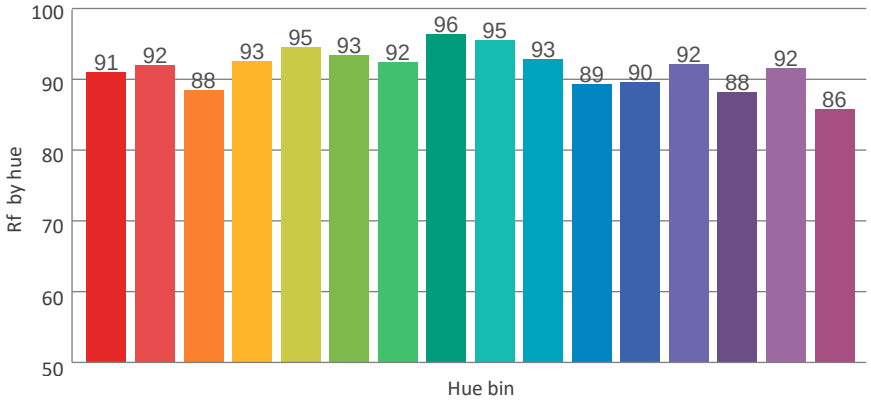
Fidelity index Rf

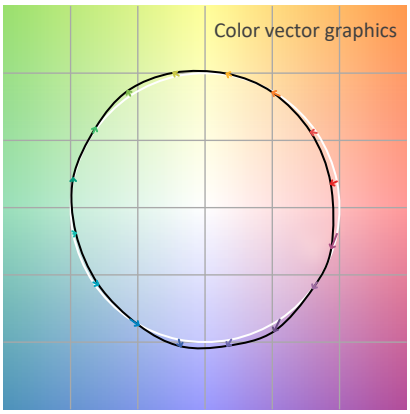
Rg 100.8

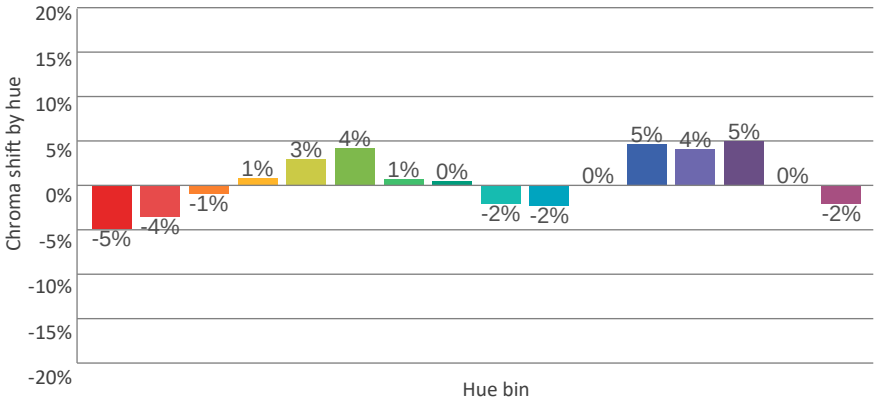
Gammut index Rg

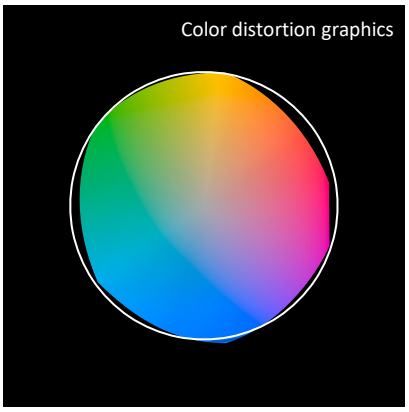
		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	91	-5%	-1%
2	92	-4%	3%
3	88	-1%	6%
4	93	1%	4%
5	95	3%	3%
6	93	4%	0%
7	92	1%	-4%
8	96	0%	-2%
9	95	-2%	0%
10	93	-2%	3%
11	89	0%	7%
12	90	5%	2%
13	92	4%	-4%
14	88	5%	-8%
15	92	0%	-5%
16	86	-2%	-11%

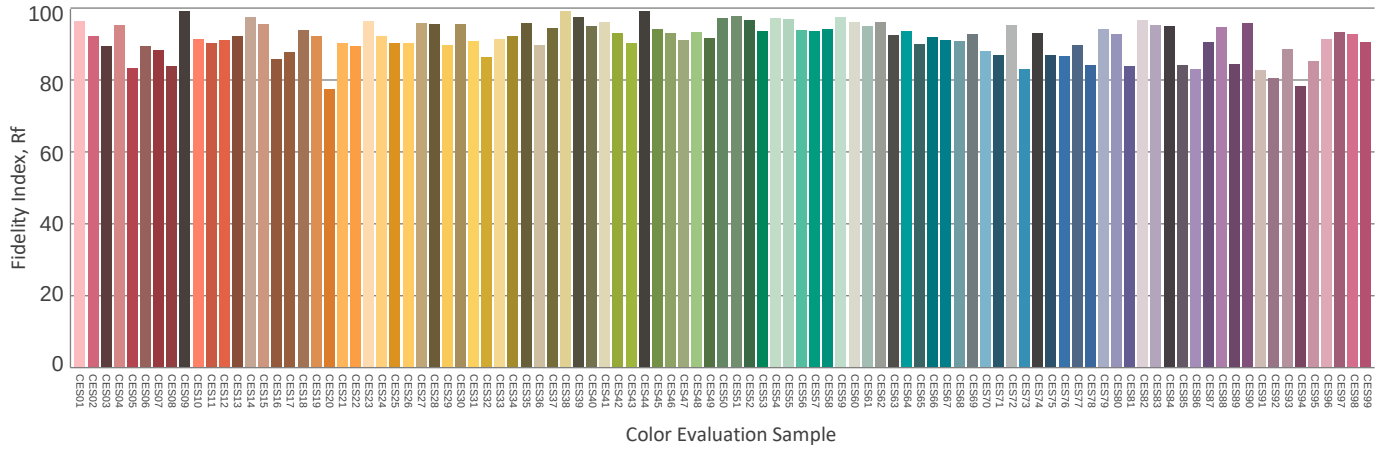












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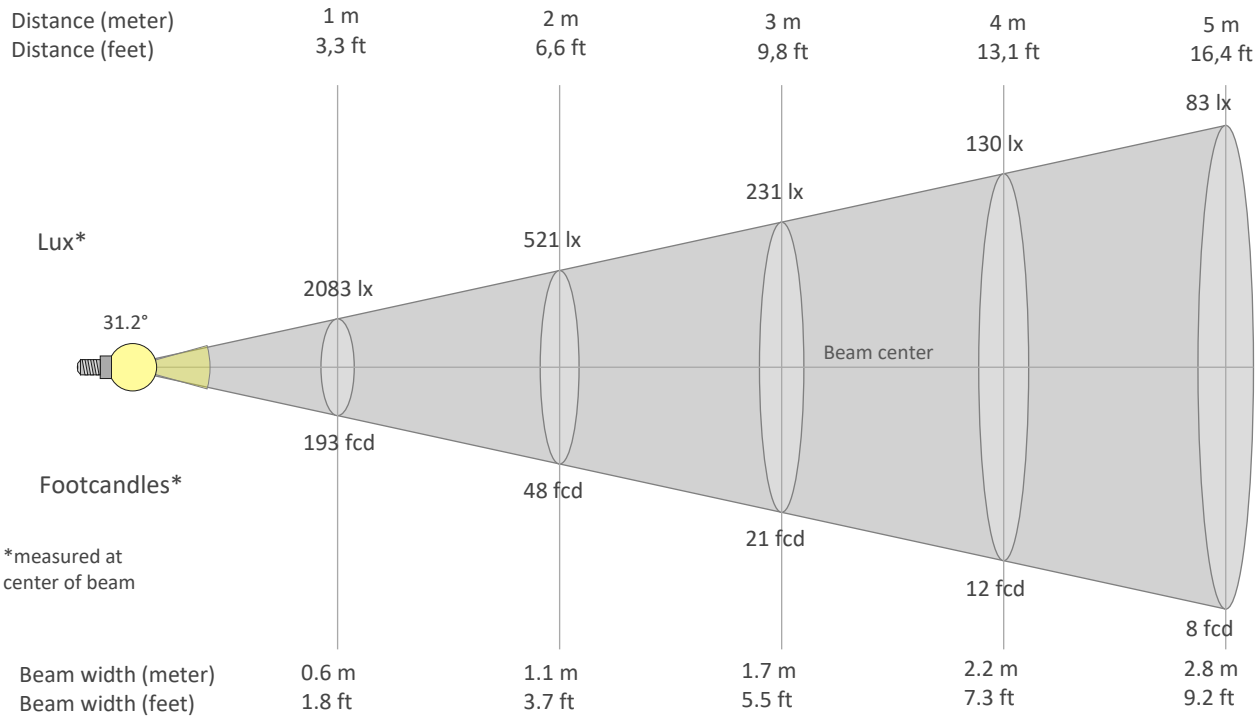
BEAM DETAILS



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
2083lx	521lx	231lx	130lx	83lx	58lx	43lx	33lx	26lx	21lx	17lx	14lx	12lx	11lx	9lx	8lx	7lx	6lx	6lx	5lx
193.5fcd	48.4fcd	21.5fcd	12.1fcd	7.7fcd	5.4fcd	3.9fcd	3fcd	2.4fcd	1.9fcd	1.6fcd	1.3fcd	1.1fcd	1fcd	0.9fcd	0.8fcd	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°
2083	2066	2019	1932	1800	1624	1421	1215	1011	824	661	527	417	326	253	195	153	119	91	70
100%	99%	97%	93%	86%	78%	68%	58%	49%	40%	32%	25%	20%	16%	12%	9%	7%	6%	4%	3%

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°
2083	2068	2013	1918	1779	1598	1396	1191	990	807	648	518	411	322	250	193	151	117	91	69
100%	99%	97%	92%	85%	77%	67%	57%	48%	39%	31%	25%	20%	15%	12%	9%	7%	6%	4%	3%

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°
2083	2066	2019	1932	1800	1624	1421	1215	1011	824	661	527	417	326	253	195	153	119	91	70
100%	99%	97%	93%	86%	78%	68%	58%	49%	40%	32%	25%	20%	16%	12%	9%	7%	6%	4%	3%

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°
2083	2068	2013	1918	1779	1598	1396	1191	990	807	648	518	411	322	250	193	151	117	91	69
100%	99%	97%	92%	85%	77%	67%	57%	48%	39%	31%	25%	20%	15%	12%	9%	7%	6%	4%	3%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
31.2°	58.9°	80.9°	98.8%	96.2%

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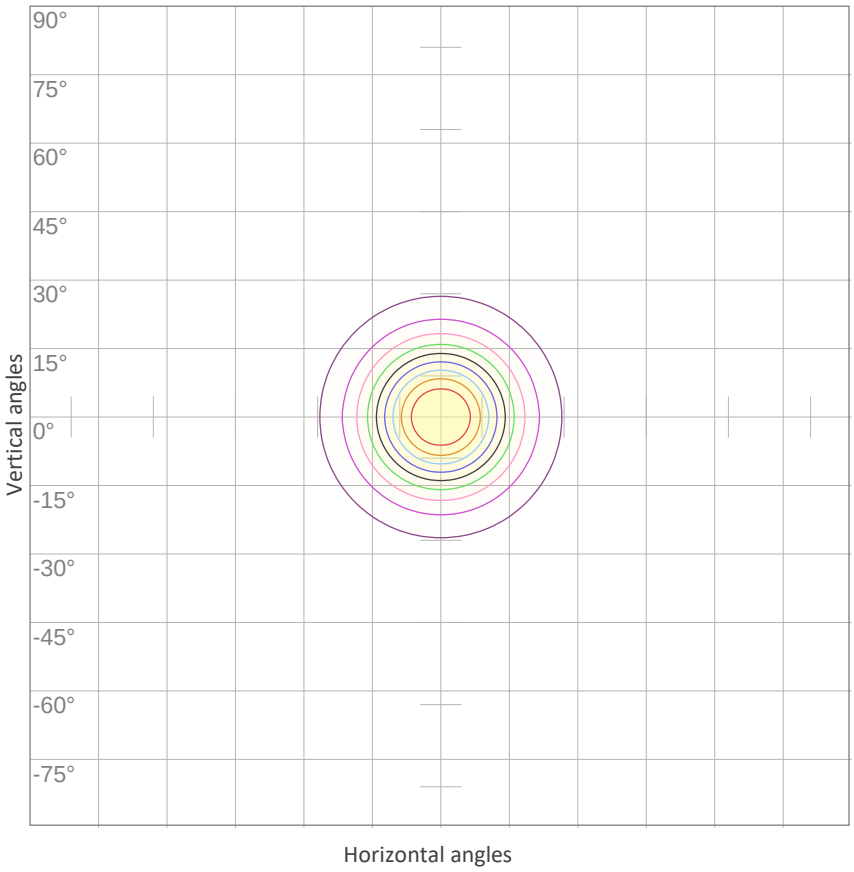
ISO DIAGRAMS

ISO CANDELA DIAGRAM



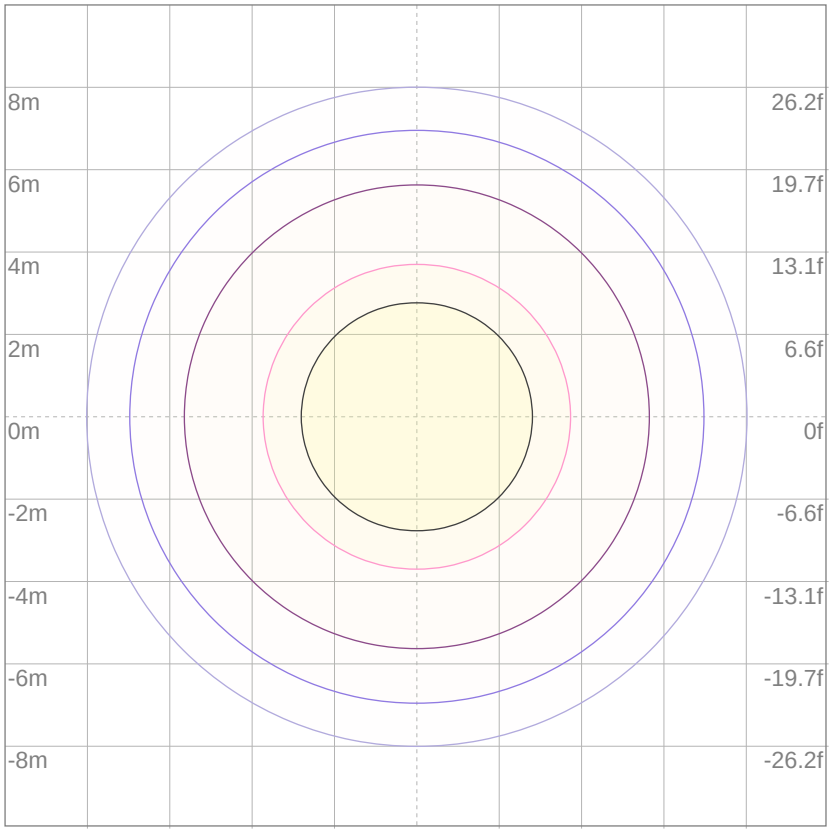
10%	208 cd
20%	417 cd
30%	625 cd
40%	833 cd
50%	1041 cd
60%	1250 cd
70%	1458 cd
80%	1666 cd
90%	1874 cd

Conditions:

Number of c-planes: 8

Candela at center: 2083 cd

ISO LUX DIAGRAM



Mounting height: 10 meters (33 feet)

3%	0.625 lx
5%	1.04 lx
10%	2.08 lx
30%	6.25 lx
50%	{LUX_10M50} lx

Conditions:

Number of c-planes: 8

Lux at center: 20.8 lx

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

UGR

GLARE EVALUATION ACCORDING TO 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	12.3	12.8	12.4	13.0	13.2	12.2	12.7	12.3	13.0	13.2
	3H	12.0	12.7	12.4	12.9	13.1	12.0	12.6	12.3	12.8	13.0
	4H	11.9	12.6	12.3	12.8	13.1	11.9	12.6	12.3	12.8	13.0
	6H	12.0	12.5	12.3	12.8	13.1	11.9	12.4	12.2	12.7	13.1
	8H	11.9	12.4	12.2	12.7	13.1	11.9	12.4	12.2	12.7	13.1
	12H	11.8	12.3	12.2	12.7	13.1	11.8	12.3	12.2	12.7	13.1
4H	2H	11.9	12.6	12.3	12.8	13.0	11.9	12.5	12.3	12.8	13.0
	3H	11.9	12.4	12.2	12.7	13.2	11.9	12.4	12.2	12.7	13.1
	4H	11.8	12.2	12.2	12.7	13.2	11.7	12.2	12.2	12.6	13.1
	6H	11.7	12.2	12.2	12.5	12.9	11.7	12.2	12.2	12.5	12.9
	8H	11.6	12.1	12.2	12.5	12.8	11.6	12.1	12.1	12.4	12.8
	12H	11.6	11.9	12.1	12.4	12.8	11.5	11.9	12.1	12.3	12.8
8H	4H	11.6	12.1	12.2	12.4	12.8	11.6	12.1	12.1	12.4	12.8
	6H	11.6	11.9	12.1	12.4	12.9	11.6	11.9	12.1	12.3	12.9
	8H	11.6	11.8	12.1	12.3	13.0	11.6	11.8	12.1	12.3	12.9
	12H	11.5	11.7	12.1	12.2	12.8	11.5	11.7	12.1	12.2	12.8
12H	4H	11.6	11.9	12.1	12.3	12.8	11.5	11.9	12.0	12.3	12.8
	6H	11.6	11.8	12.1	12.3	13.0	11.6	11.8	12.1	12.3	12.9
	8H	11.5	11.7	12.1	12.2	12.8	11.5	11.7	12.1	12.2	12.8
Variation of the observer position for the luminaire distance S											
S = 1.0H		4.8 / -6.9					4.8 / -6.8				
S = 1.5H		7.4 / -8.5					7.4 / -8.6				
S = 2.0H		9.3 / -10.5					9.3 / -10.5				
Standard table		n/a					n/a				
Correction summand		n/a					n/a				
Corrected glare indices referring to 761 lm total luminous flux											

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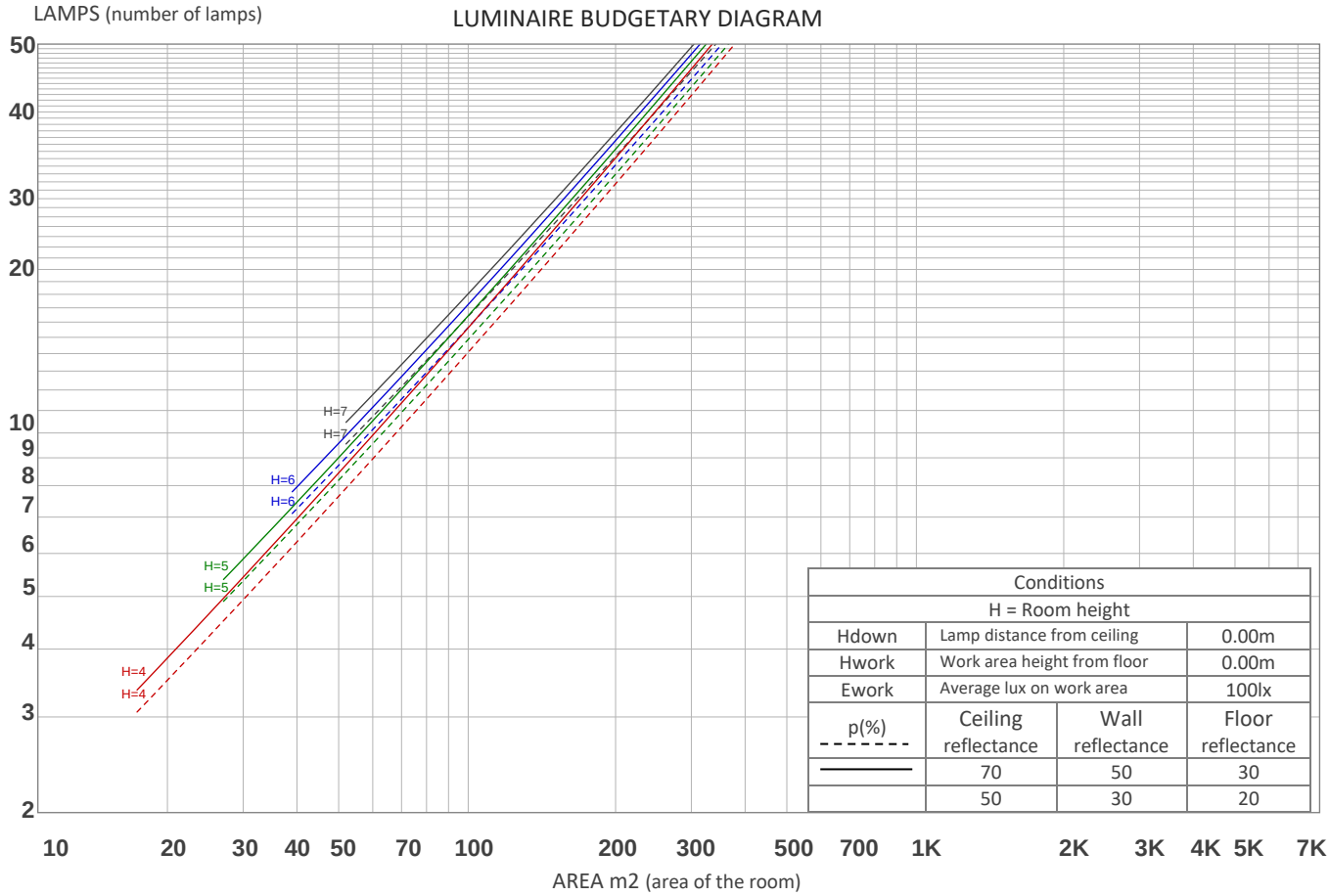
LIGHT PLANNING

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	112	110	108	112	110	108	106	105	104	103	102	101	99	98	97	96	95
2	110	105	102	99	107	104	100	98	100	98	96	97	95	93	95	93	91	90
3	105	100	95	92	103	98	94	91	96	92	90	93	91	88	91	89	87	85
4	101	95	90	86	99	93	89	86	91	88	85	89	86	84	88	85	83	81
5	97	90	85	81	95	89	85	81	87	83	80	86	82	80	84	81	79	78
6	93	86	81	77	92	85	80	77	84	80	77	82	79	76	81	78	75	74
7	90	82	77	74	89	82	77	73	80	76	73	79	75	73	78	75	72	71
8	87	79	74	70	86	78	74	70	77	73	70	76	72	70	75	72	69	68
9	84	76	71	67	83	75	71	67	74	70	67	73	70	67	73	69	67	66
10	81	73	68	65	80	72	68	65	72	67	65	71	67	64	70	67	64	63

LUMINAIRE BUDGETARY DIAGRAM



ZONAL LUMEN SUMMARY

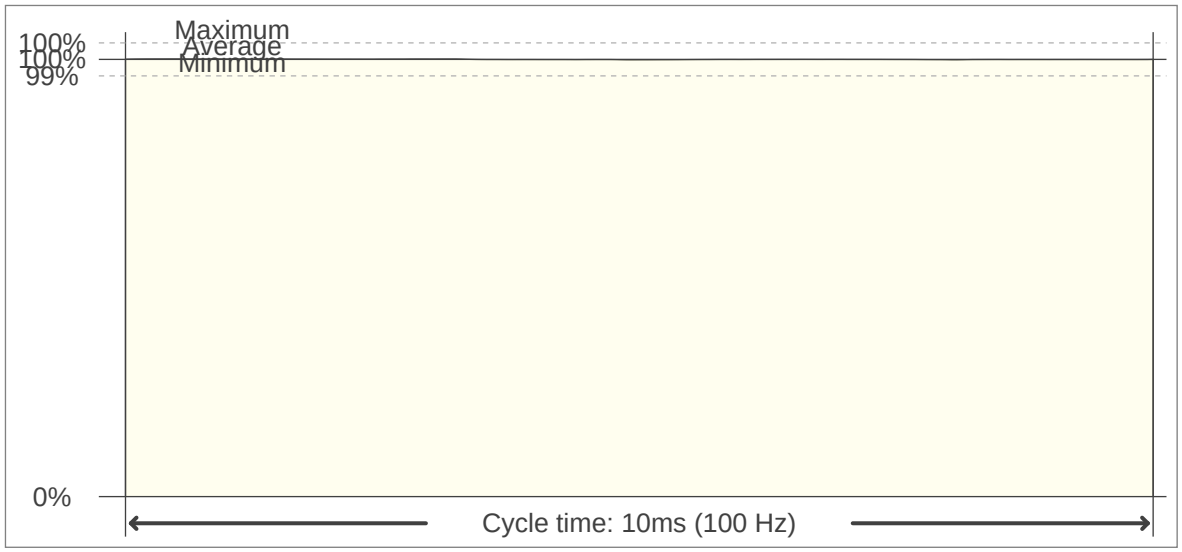
0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
177 lm	300 lm	172 lm	67.8 lm	25.4 lm	9.42 lm	4.43 lm	1.76 lm	0.397 lm

90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0.078 lm	0.090 lm	0.138 lm	0.271 lm	0.475 lm	0.625 lm	0.600 lm	0.395 lm	0.113 lm

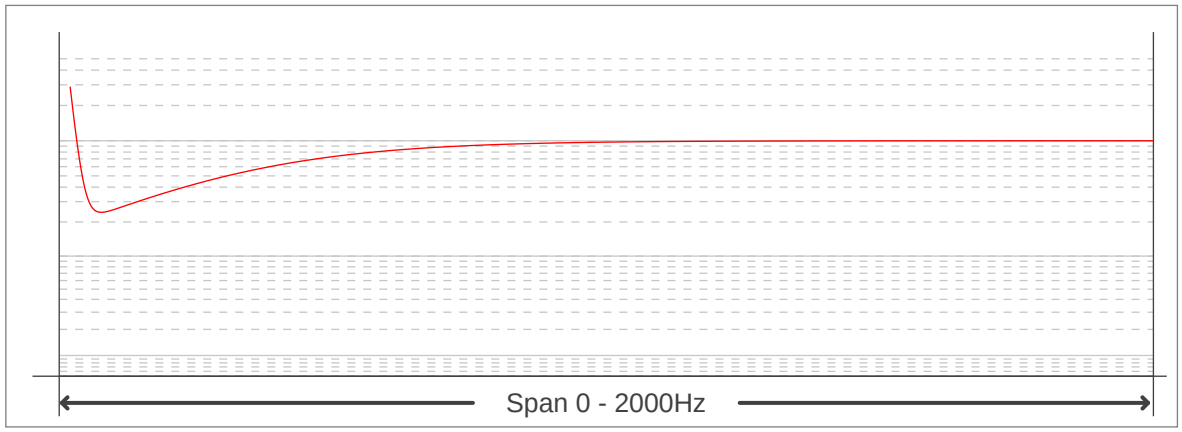
FLICKER

FLICKER CURVE (COMPLETE SAMPLED FLICKER

FLICKER FRAME (FRAME OF ONE FLICKER PERIOD)



FLICKER FFT (FREQUENCY SCOPE OF FLICKER CURVE)



FLICKER RESULTS:

Flicker frequency:	100 Hz
Flicker index:	0
Flicker percentage:	0.13 %
SVM: (Visual flicker)	0

FLICKER CONDITIONS:

Sample rate:	20000 samples/second