



Product Overview

Product Name / Code	MORGAN 16W Up Down Wall Light - LC4403
Description	Aluminium and Glass, IP65, Black, 4000K
Manufacturer	Decrolux Lighting Pty Ltd



Laboratory and Equipment

System Name / Model	LabSpion / Freedom VIS (Custom Viso)
Manufacturer / Serial Number	Ibsen Photonics, Denmark / 2417457569
Sensor Name	LabSensor Model2
Sensor Serial Number / Calibration Date	3430823524 / 7/12/2022

Measurement Details

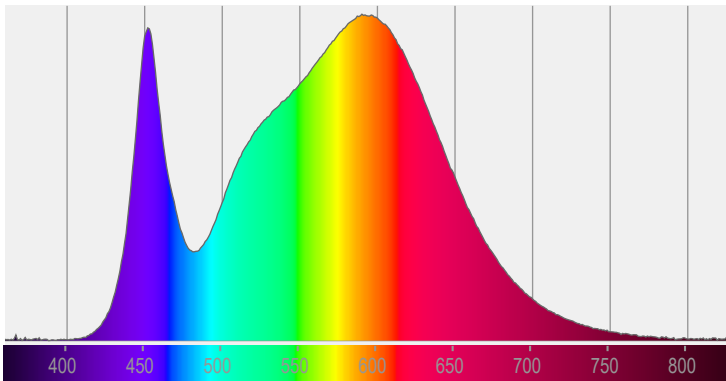
Test Date and Time	20/04/2023 8:18:59 PM
Operator	Johnny Elmer
C-Planes Measured	36
Measurement Resolution	10°
Measurement Distance	453.3cm
Measurement Number	VFR-230420-0064-MS
Tracking Link	http://www.visosystems.com/tracking/?id=VT230421-007633



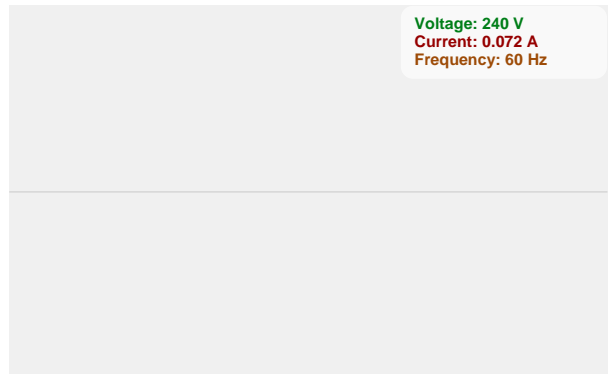
Performance

Total Lumen Output	1196 lm
Light Efficiency	72 Lumen/Watt
Peak (cd)	267 cd
Nominal Power	16.5 W
Input Voltage	240 V
Frequency of Input Power	60 Hz
Power Factor	0.96
Warm-up (stabilisation) Time	Lamp stabilized in 1 hour 1 min
Warm-up Variation	-8.5

Spectral Power Distribution (SPD)



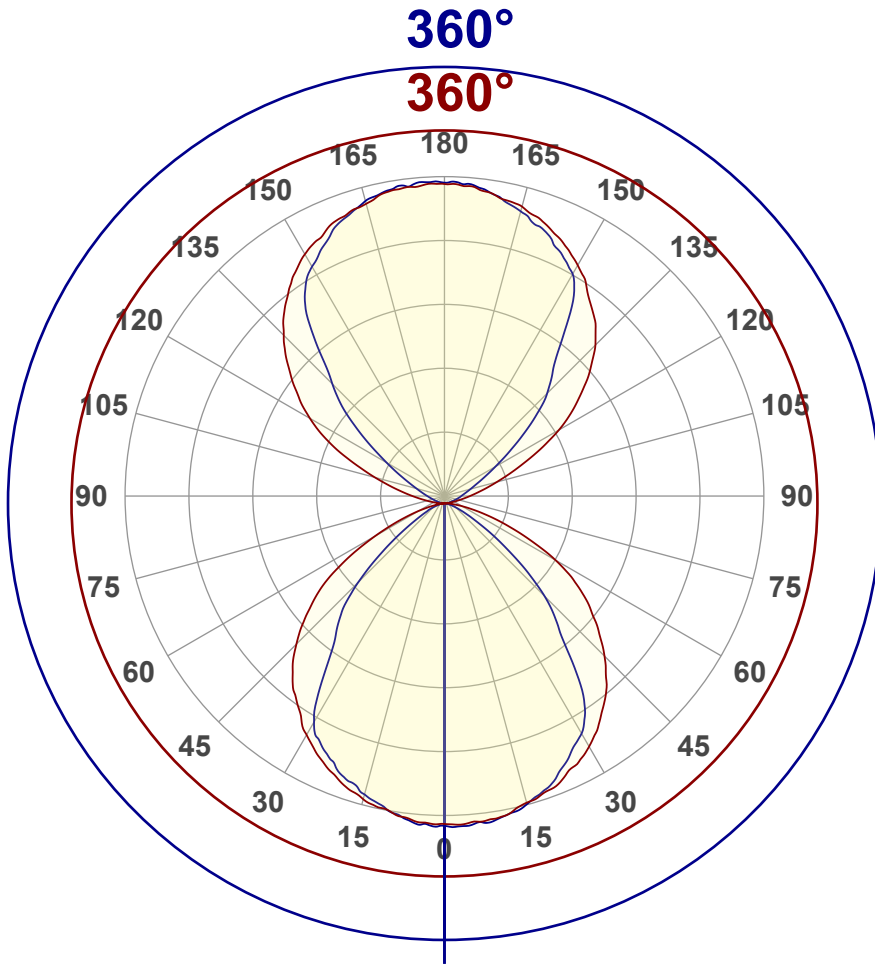
Input Power Curve



Optic Specifications

Correlated Colour Temperature, Target	4000K
Correlated Colour Temperature, Measured	3879K
Colour Rendering Index	CRI 81.3
R9 Value	R9 = 1.4
Colour Rendering TM30-18	R _f 83.0 - R _g 94.5
Colour Quality Scale	CQS = 80.8
Beam Angle	360°



Angular Distribution – 0° / 90° Plane

Main Values

Total Lumen Output	1196 lm
Lumen Up% / Down%	49.85 % / 50.15%
Peak Intensity	267 cd
Beam Angle (50%)	360°
Beam Angle (90%)	360°
Beam Angle (10%)	360°

Cut-off Angle

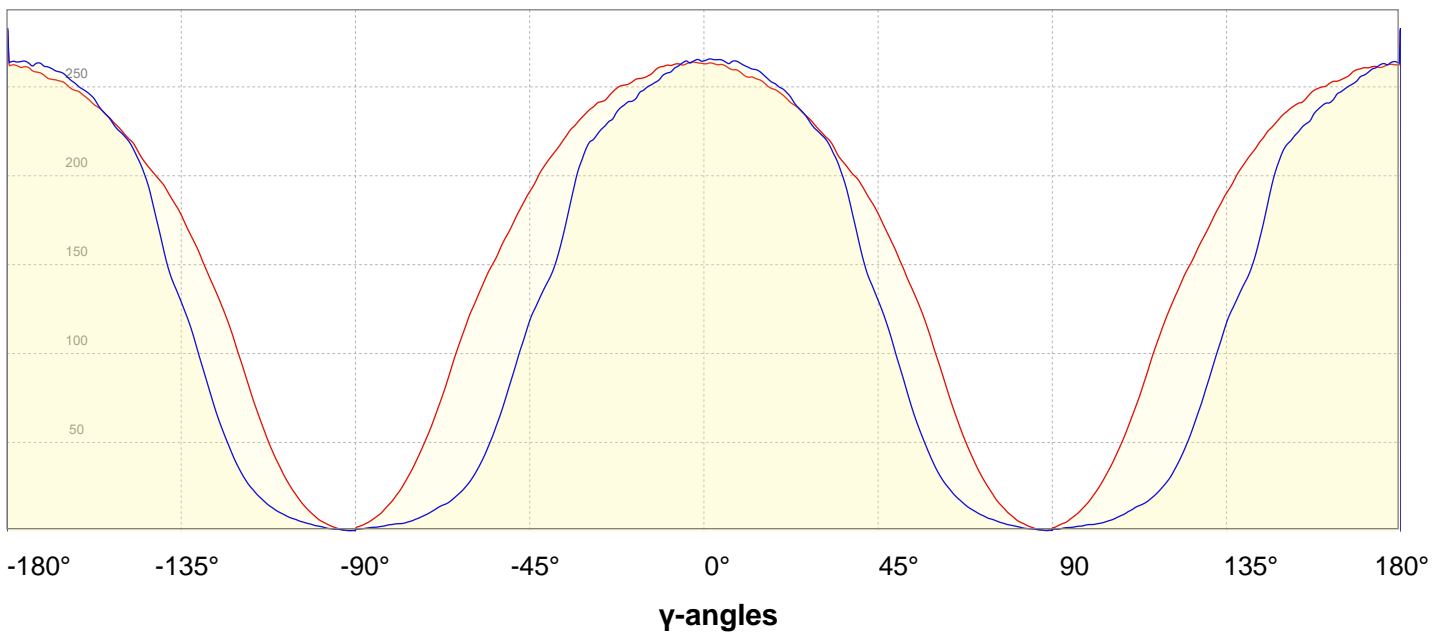
Average 2.5%	360°
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Field Angle

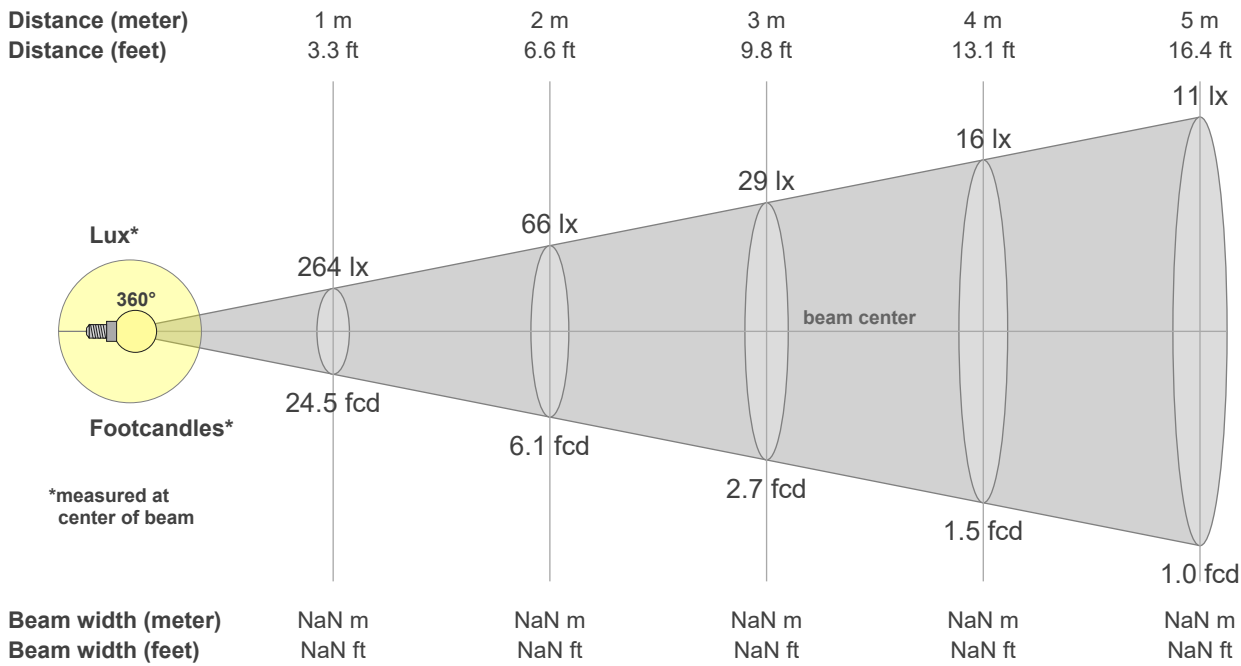
Average 10%	360°
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Intensity Ratio

In 120° Cone	44.7%
In 90° Cone	32.9%

C000-C180
C090-C270
Linear Distribution Diagram – Intensity (candela) vs γ -angle


Beam Details



Beam intensities from 1 – 20m

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	m	
3.3	6.6	9.8	13.1	16.4	19.7	23	26.2	29.5	32.8	36.1	39.4	42.7	45.9	49.2	52.5	55.8	59.1	62.3	65.6	ft	
264	66	29	16	11	7	5	4	3	3	2	2	2	1	1	1	1	1	1	1	1	lux
24.5	6.1	2.7	1.5	1	0.7	0.5	0.4	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	fc

Intensities in 0° c-plane

0°	9°	18°	27°	36°	45°	54°	63°	72°	81°	90°	99°	108°	117°	126°	135°	144°	153°	162°	171°	γ
264	262	254	241	221	191	153	107	51	16	1	6	30	78	134	178	206	231	248	257	cd
100%	99%	96%	91%	84%	72%	58%	40%	19%	6%	0%	2%	11%	30%	51%	67%	78%	88%	94%	98%	of 0°val

Intensities in 90° c-plane

0°	9°	18°	27°	36°	45°	54°	63°	72°	81°	90°	99°	108°	117°	126°	135°	144°	153°	162°	171°	γ
264	264	252	231	199	130	68	25	9	3	1	4	9	21	56	117	168	223	242	257	cd
100%	100%	96%	88%	75%	49%	26%	9%	3%	1%	0%	1%	3%	8%	21%	44%	64%	85%	92%	98%	of 0°val

Intensities in 180° c-plane

0°	9°	18°	27°	36°	45°	54°	63°	72°	81°	90°	99°	108°	117°	126°	135°	144°	153°	162°	171°	γ
264	259	249	233	208	179	135	78	30	6	1	16	50	106	152	190	220	240	252	261	cd
100%	98%	94%	88%	79%	68%	51%	30%	11%	2%	0%	6%	19%	40%	58%	72%	83%	91%	96%	99%	of 0°val

Intensities in 270° c-plane

0°	9°	18°	27°	36°	45°	54°	63°	72°	81°	90°	99°	108°	117°	126°	135°	144°	153°	162°	171°	γ
264	258	243	225	170	118	57	22	9	4	1	3	9	25	67	129	198	231	251	263	cd
100%	98%	92%	85%	64%	45%	22%	8%	3%	1%	0%	1%	3%	9%	25%	49%	75%	87%	95%	100%	Of 0°val

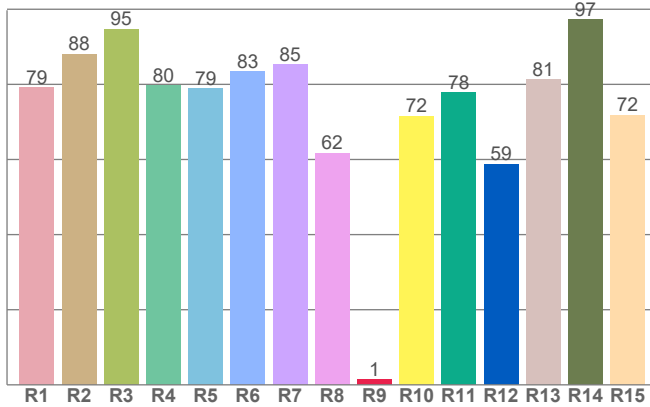


Colour Details

Correlated Colour Temperature, Target	CCT = 4000K
Correlated Colour Temperature, Measured	CCT = 3879K
Colour Rendering Index	CRI 81.3
Colour Rendering Index R9 Value	R9 = 1.4
Colour Rendering TM30-18	R _f 83.0, R _g 94.5
Colour Quality Scale	CQS = 80.8

MacAdam Steps	SDCM = 3.3
Colour Coordinates CIE 1931	(x;y) = (0.381;0.377)
Colour Coordinates CIEs 1960	(u;v) = (0.225; 0.334)
Colour Deviation from BBL	Duv = 0.0016
Colour Coordinate CIEs 1976 (CIELUV)	(u';v') = (0.225;0.225)

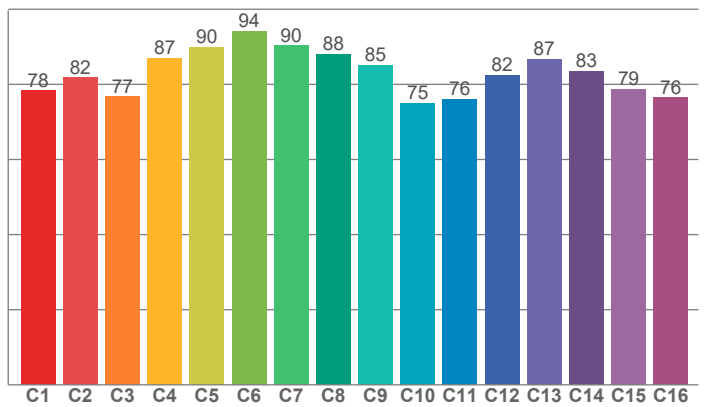
Colour Rendering Index per reference colour (CIE 1995)



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
79.1	88.1	94.7	79.6	78.8	83.4	85.2	61.6	1.4	71.6	77.8	58.7	81.3	97.2	71.9

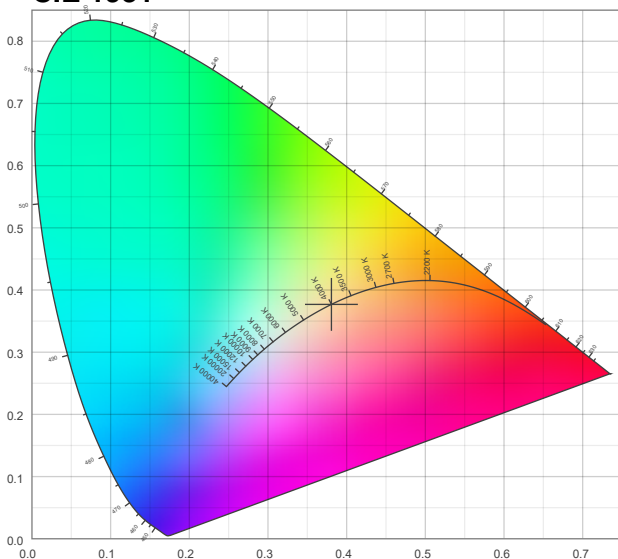
TM30-18 R_f-values per hue bin



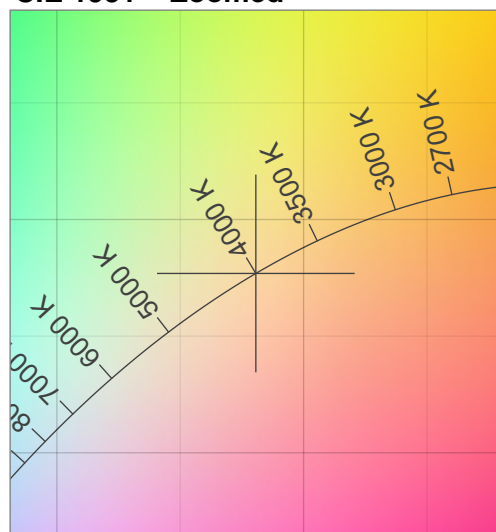
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
78.4	81.9	76.8	87.0	89.9	94.2	90.3	88.1	85.2	75.0	76.0	82.5	86.7	83.5	78.7	76.5

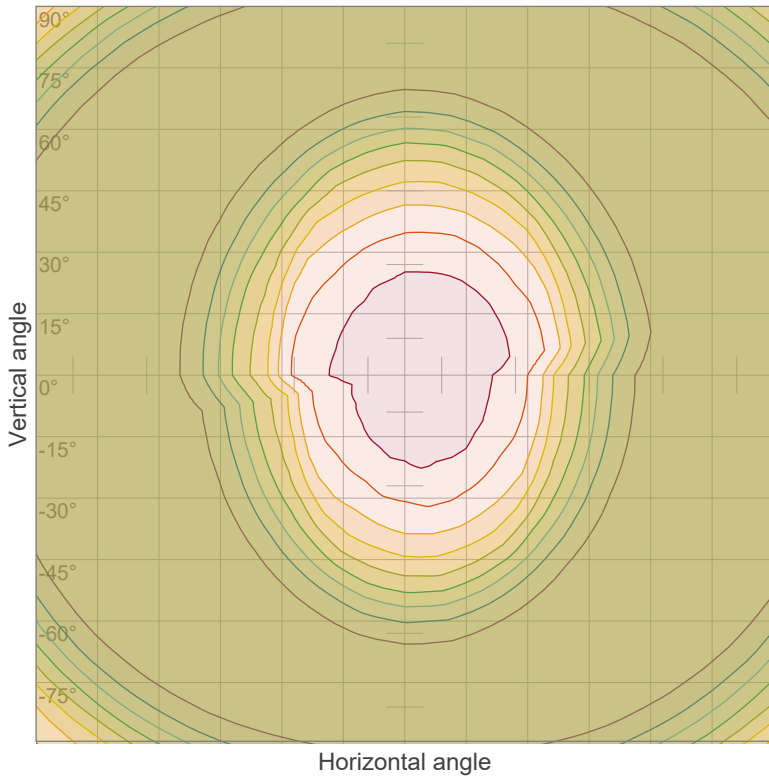
CIE 1931



CIE 1931 – Zoomed



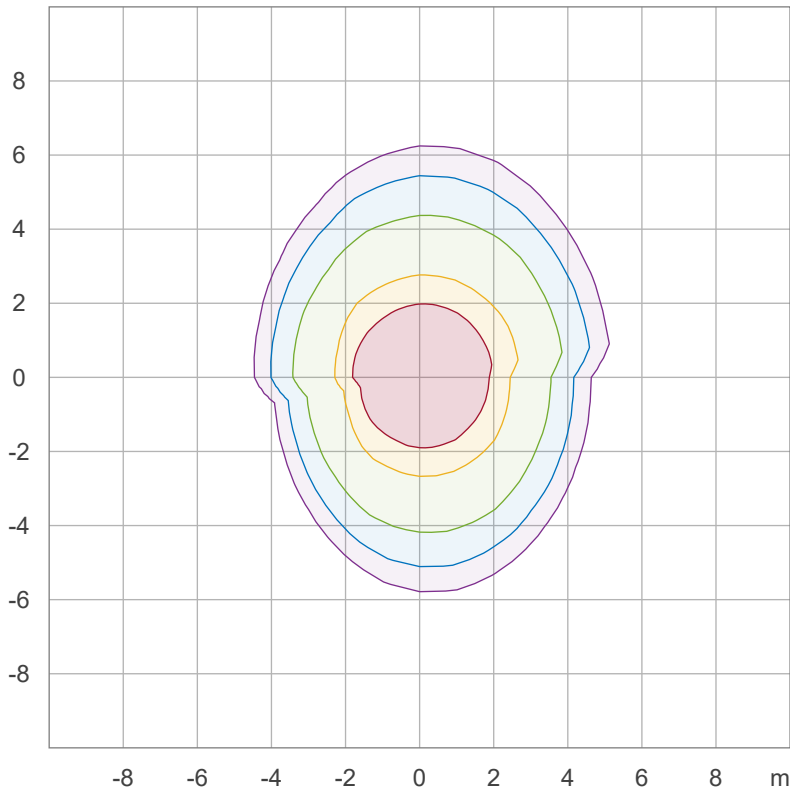
Iso-intensity Diagram (Iso-Candela)



90 %	239.9 cd
80 %	213.2 cd
70 %	186.6 cd
60 %	159.9 cd
50 %	133.3 cd
40 %	106.6 cd
30 %	80.0 cd
20 %	53.3 cd
10 %	26.7 cd

Peak intensity: 266.5 cd
Number of c-planes: 36

Iso-illuminance Diagram (Iso-lux)



50.0 %	14.7 lx
30.0 %	8.8 lx
10.0 %	2.9 lx
5.0 %	1.5 lx
3.0 %	0.9 lx

Peak illuminance: 29.5 lx
Mounting height: 3.0 m
Number of c-planes: 36



Light Planning – UGR table

Uncorrected, comprehensive UGR table according to 117-1995

Reflectances		70	70	50	50	30	70	70	50	50	30
ρ Ceiling		50	30	50	30	30	50	30	50	30	30
ρ Walls		20	20	20	20	20	20	20	20	20	20
ρ Floor											
Room size		Viewed Crosswise					Viewed Endwise				
H = mounting height above eye level		(Viewing direction orthogonal to lamp length axis)					(Viewing direction parallel to lamp length axis)				
X	Y										
	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Variations with the observer position for the luminaire spacings, S:											
	n/a					n/a					n/a
	n/a					n/a					n/a
	n/a					n/a					n/a

UGR data could not be calculated due to missing dimensions. Goto Edit->Photometric->Dimensions and set the fixture/lamp dimensions.

Coefficients of Utilization

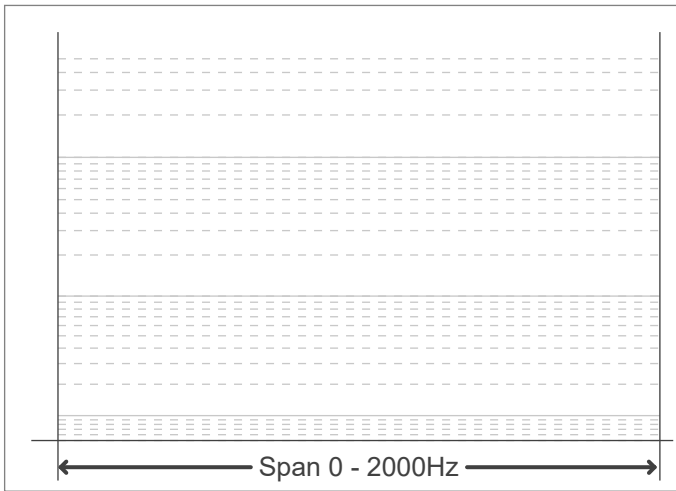
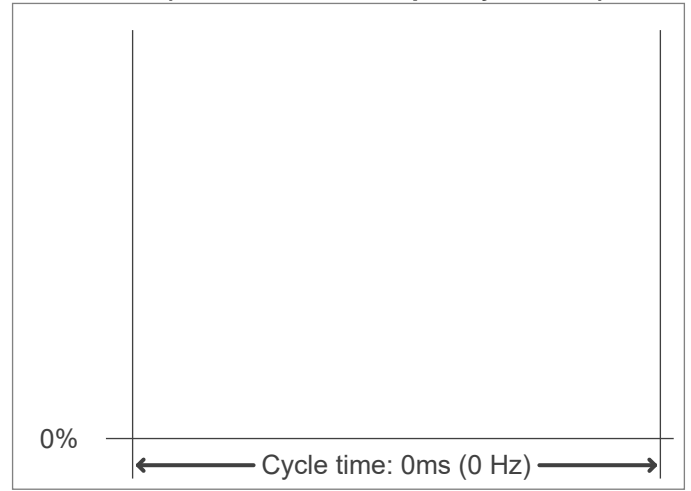
Ceiling reflectance	80	70	50	30	10	0					
Wall reflectance	70 50 30	10 70 50	30 10 50	30 10 50	30 10 50	30 10 0					
Floor reflectance	20 20 20	20 20 20	20 20 20	20 20 20	20 20 20	20 20 0					
RCR (RCR: Room Cavity Ratio)	Room Values are expressed as percentage of Lumen delivered to the task surface										
0	107 107 107	107 99 99	99 99 83	83 83 69	69 69 56	56 56 50					
1	99 95 91	88 91 88	85 82 74	72 70 62	61 59 51	50 49 44					
2	90 84 78	73 83 77	72 68 66	62 59 56	53 51 46	44 43 38					
3	83 74 67	62 76 69	63 58 59	54 51 50	46 44 41	39 37 33					
4	76 66 58	53 70 61	55 50 53	48 44 45	41 38 37	34 32 29					
5	70 59 51	45 65 55	48 43 47	42 38 40	36 33 34	31 28 25					
6	65 53 45	40 60 49	43 37 43	37 33 37	32 29 31	28 25 22					
7	60 48 40	35 55 45	38 33 39	33 29 33	29 26 28	25 23 20					
8	56 44 36	31 51 41	34 29 36	30 26 31	26 23 26	23 20 18					
9	52 40 33	28 48 37	31 26 33	27 24 28	24 21 24	21 18 16					
10	48 37 30	25 45 34	28 24 30	25 21 26	22 19 22	19 17 15					



Flicker Details

Flicker Meter Type	Viso Systems LabFlicker
Frequency of Input Power	60 Hz
Flicker/TLA Sample Rate	n/a sample/s
Measurement Time	
PstLM	180 sec
All other indices	1.2 sec

Flicker Indices	(IES)
Flicker Percentage	n/a%
Flicker Frequency	n/a Hz
Flicker Index	n/a
Flicker SVM Value	n/a
Flicker PstLM Value	n/a

Flicker Frame

Flicker FFT (flicker curve in frequency domain)

IEEE 1789 Frequency/Modulation Plot
