



Product Overview

Product Name / Code	MORGAN 12W Wall Light - LC4404
Description	Aluminium and Glass, IP65, White, 3000K
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

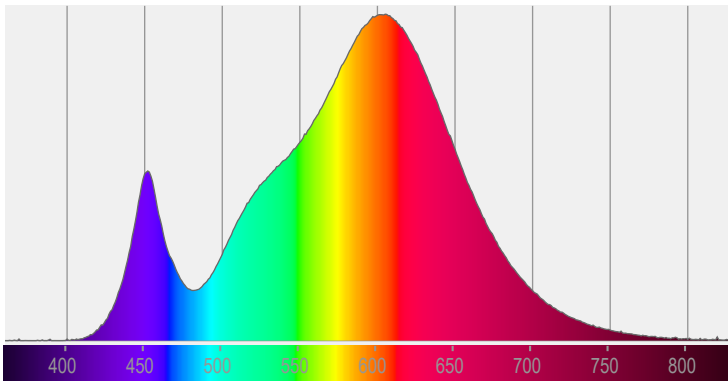
Test Date and Time	9/05/2023 5:17:47 PM
Operator	Johnny Elmer
C-Planes Measured	36
Measurement Resolution	10°
Measurement Distance	464.4cm
Measurement Number	VFR-230509-0079-MS
Tracking Link	http://www.visosystems.com/tracking/?id=VT230510-006349



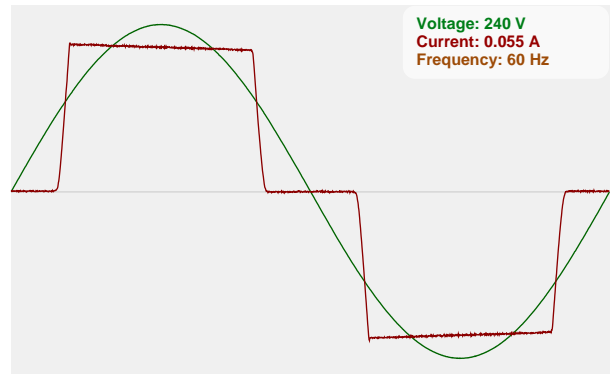
Performance

Total Lumen Output	834lm
Light Efficiency	65 Lumen/Watt
Peak (cd)	386cd
Nominal Power	12.8W
Input Voltage	240V
Frequency of Input Power	60Hz
Power Factor	0.96
Warm-up (stabilisation) Time	Lamp stabilized in 1 hour 0 min
Warm-up Variation	-3.6%

Spectral Power Distribution (SPD)



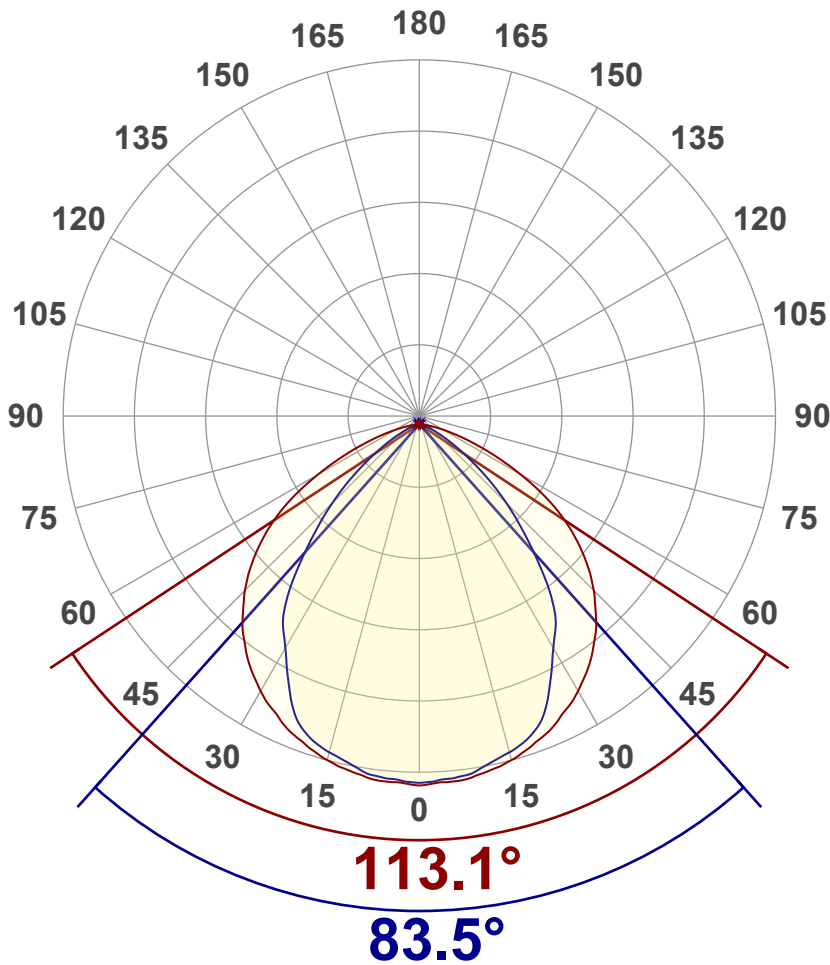
Input Power Curve



Optic Specifications

Correlated Colour Temperature, Target	3000K
Correlated Colour Temperature, Measured	2958K
Colour Rendering Index	CRI 81.3
R9 Value	R9 = 4.6
Colour Rendering TM30-18	R _f 82.8 - R _g 97.1
Colour Quality Scale	CQS = 79.8
Beam Angle	97.1°



Angular Distribution – 0° / 90° Plane

Main Values

Total Lumen Output	834 lm
Lumen Up% / Down%	0.1 % / 99.9%
Peak Intensity	386 cd
Beam Angle (50%)	97.1°
Beam Angle (90%)	83.5°
Beam Angle (10%)	111.6°

Cut-off Angle

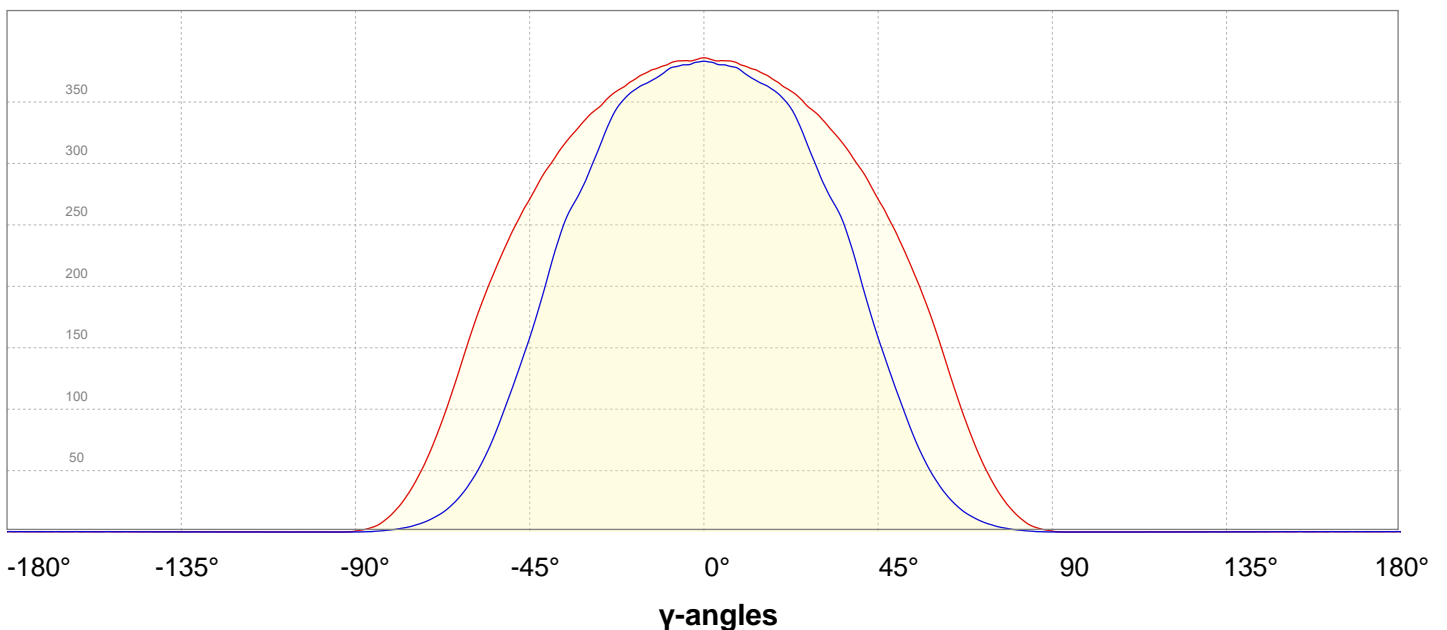
Average 2.5%	151.6°
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Field Angle

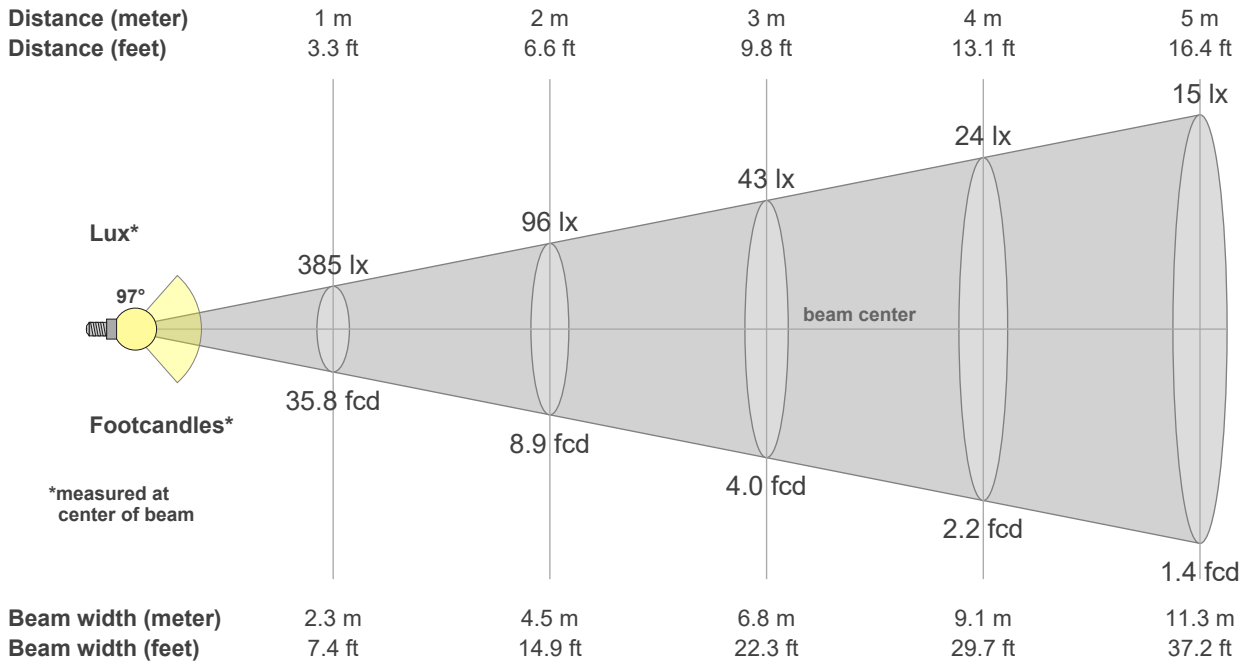
Average 10%	133.3°
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Intensity Ratio

In 120° Cone	91.2%
In 90° Cone	68.1%

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
385	96	43	24	15	11	8	6	5	4	3	3	2	2	2	2	1	1	1	1	lux
35.8	8.9	4	2.2	1.4	1	0.7	0.6	0.4	0.4	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	fc

Intensities in 0° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	γ
385	384	380	374	364	352	338	320	298	271	241	205	163	114	71	38	17	5	1	0	cd
100%	100%	99%	97%	95%	92%	88%	83%	77%	70%	63%	53%	42%	30%	18%	10%	4%	1%	0%	0%	of 0°val

Intensities in 90° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	γ
385	380	375	365	354	329	290	259	211	158	113	72	42	22	11	5	2	1	0	0	cd
100%	99%	97%	95%	92%	85%	75%	67%	55%	41%	29%	19%	11%	6%	3%	1%	1%	0%	0%	0%	of 0°val

Intensities in 180° c-plane {INT_TABLE_180_START}

•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	γ
																				cd
%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	of 0°val

Intensities in 270° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	γ
385	380	375	365	354	329	290	259	211	158	113	72	42	22	11	5	2	1	0	0	cd
100%	99%	97%	95%	92%	85%	75%	67%	55%	41%	29%	19%	11%	6%	3%	1%	1%	0%	0%	0%	Of 0°val

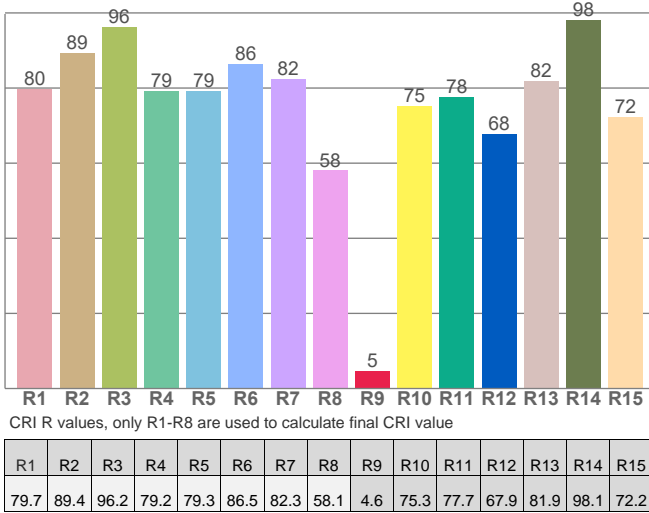


Colour Details

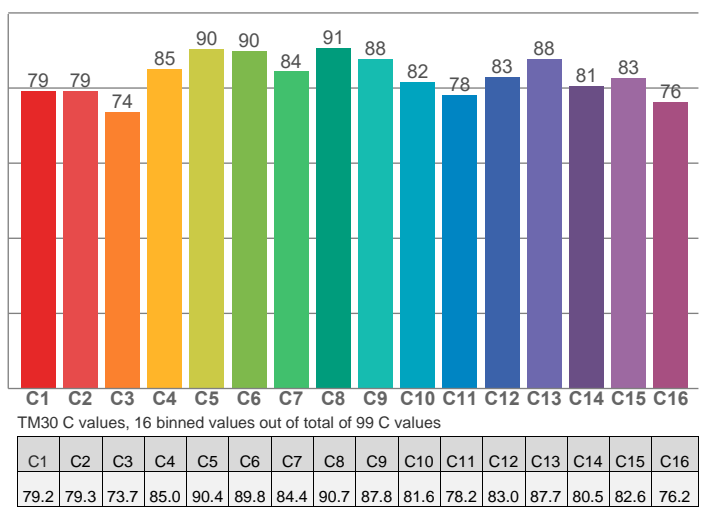
Correlated Colour Temperature, Target	CCT = 3000K
Correlated Colour Temperature, Measured	CCT = 2958K
Colour Rendering Index	CRI 81.3
Colour Rendering Index R9 Value	R9 = 4.6
Colour Rendering TM30-18	R _f 82.8, R _g 97.1
Colour Quality Scale	CQS = 79.8

MacAdam Steps	SDCM = 1.9
Colour Coordinates CIE 1931	(x;y) = (0.437;0.404)
Colour Coordinates CIEs 1960	(u;v) = (0.251; 0.348)
Colour Deviation from BBL	Duv = -0.0015
Colour Coordinate CIEs 1976 (CIELUV)	(u';v') = (0.251;0.521)

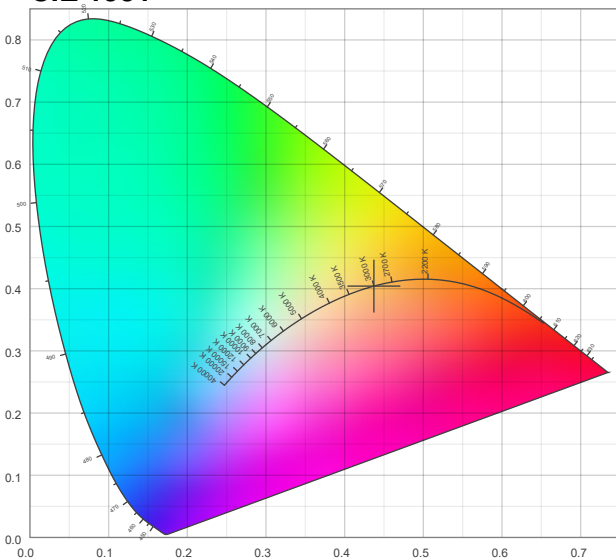
Colour Rendering Index per reference colour (CIE 1995)



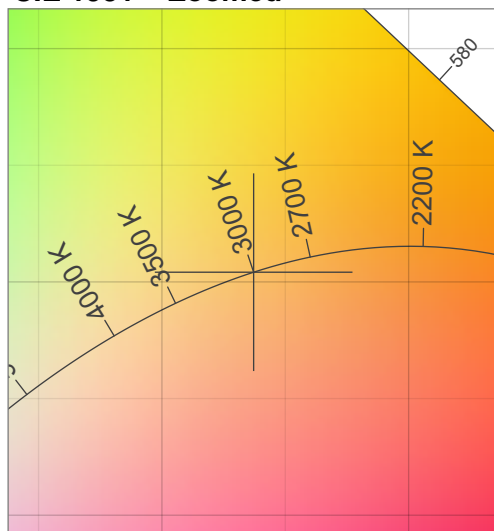
TM30-18 Rf-values per hue bin



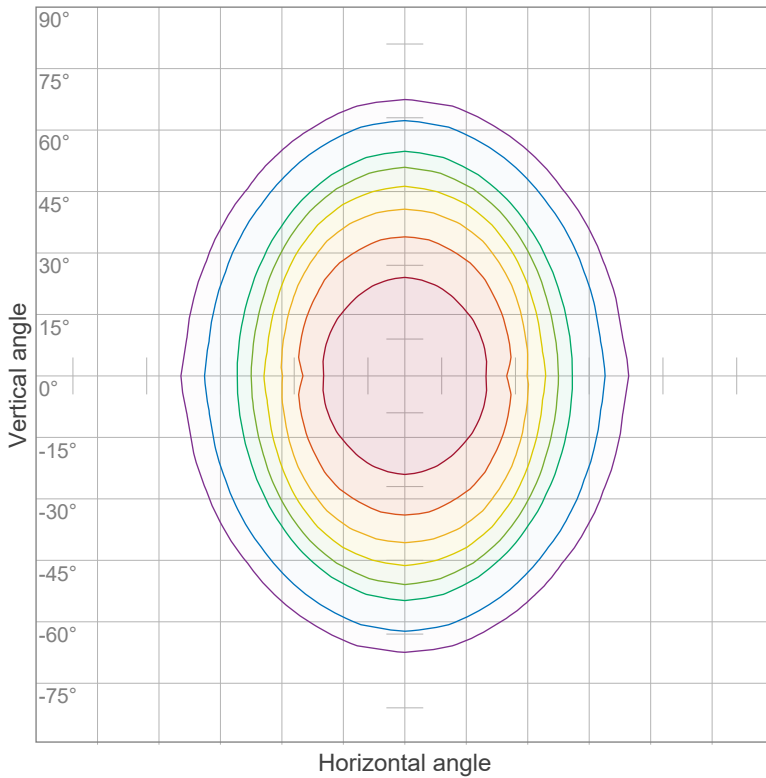
CIE 1931



CIE 1931 – Zoomed



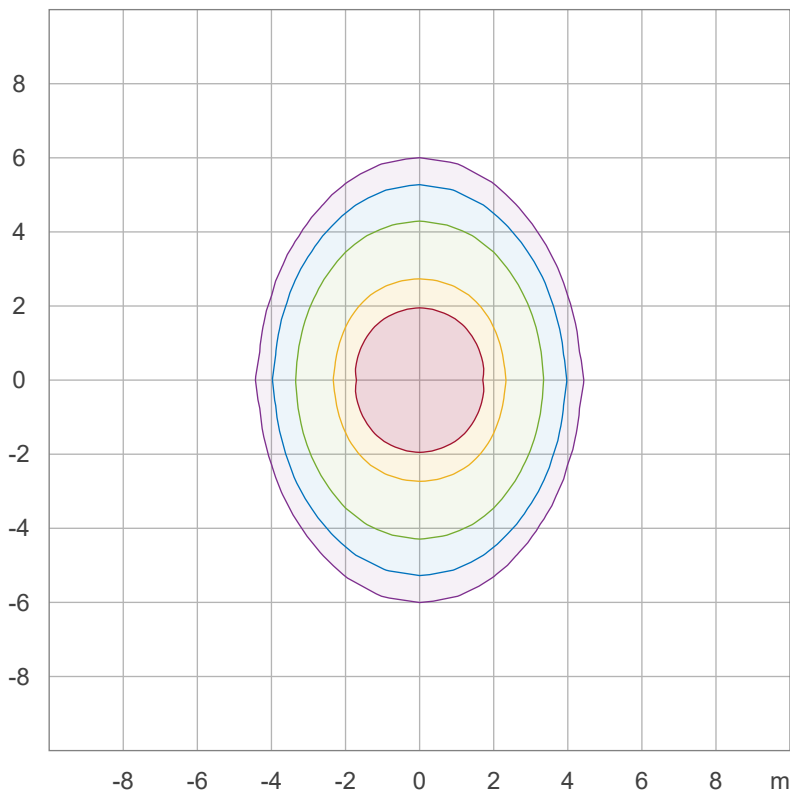
Iso-intensity Diagram (Iso-Candela)



90 %	346.9 cd
80 %	308.3 cd
70 %	269.8 cd
60 %	231.2 cd
50 %	192.7 cd
40 %	154.2 cd
30 %	115.6 cd
20 %	77.1 cd
10 %	38.5 cd

Peak intensity: 385.4 cd
Number of c-planes: 36

Iso-illuminance Diagram (Iso-lux)



50.0 %	21.4 lx
30.0 %	12.8 lx
10.0 %	4.3 lx
5.0 %	2.1 lx
3.0 %	1.3 lx

Peak illuminance: 42.8 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		70	70	50	50	30	70	70	50	50	30
ρ Walls		50	30	50	30	30	50	30	50	30	30
ρ Floor		20	20	20	20	20	20	20	20	20	20
Room size		Viewed Crosswise					Viewed Endwise				
H = mounting height above eye level											
X	Y	(Viewing direction orthogonal to lamp length axis)					(Viewing direction parallel to lamp length axis)				
2H	2H	25.3	26.3	25.5	26.6	26.8	20.2	21.2	20.4	21.5	21.7
	3H	26.0	27.1	26.4	27.3	27.5	20.0	21.1	20.4	21.4	21.6
	4H	26.2	27.2	26.6	27.5	27.7	20.0	21.0	20.4	21.3	21.5
	6H	26.3	27.2	26.6	27.5	27.8	20.0	20.8	20.3	21.1	21.5
	8H	26.3	27.1	26.6	27.4	27.9	19.9	20.8	20.2	21.1	21.5
	12H	26.2	27.1	26.6	27.4	27.8	19.9	20.7	20.2	21.0	21.5
4H	2H	25.1	26.1	25.5	26.4	26.6	20.5	21.6	20.9	21.8	22.1
	3H	26.0	26.8	26.4	27.2	27.6	20.6	21.4	20.9	21.7	22.2
	4H	26.1	26.9	26.6	27.3	27.9	20.4	21.2	20.9	21.6	22.1
	6H	26.2	27.0	26.7	27.3	27.7	20.4	21.1	20.9	21.5	21.8
	8H	26.2	26.9	26.7	27.3	27.6	20.3	21.0	20.8	21.4	21.7
	12H	26.2	26.7	26.7	27.2	27.6	20.3	20.8	20.8	21.2	21.7
8H	4H	26.0	26.7	26.5	27.1	27.4	20.4	21.1	20.9	21.5	21.8
	6H	26.1	26.6	26.6	27.1	27.6	20.4	20.9	20.9	21.3	21.9
	8H	26.2	26.6	26.7	27.1	27.7	20.4	20.8	20.9	21.3	21.9
	12H	26.1	26.5	26.7	27.0	27.6	20.3	20.7	20.9	21.2	21.8
12H	4H	26.0	26.5	26.5	26.9	27.4	20.4	20.9	20.9	21.4	21.8
	6H	26.1	26.5	26.6	27.1	27.7	20.4	20.8	20.9	21.3	22.0
	8H	26.1	26.5	26.7	27.0	27.6	20.3	20.7	20.9	21.2	21.8

Variations with the observer position for the luminaire spacings, S:

S = 1.0H	0.2 / -0.3	0.9 / -2.2
S = 1.5H	1.2 / -1.8	2.1 / -5.4
S = 2.0H	2.4 / -3.9	3.4 / -8.2

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	0			
Floor reflectance	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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	111	107	104	101	108	105	102	99	101	98	96	97	95	93	93	92	90	88
2	103	96	90	85	100	94	89	84	90	86	82	87	84	80	84	81	79	77
3	95	86	79	73	92	84	78	72	81	76	71	79	74	70	76	72	69	67
4	87	77	69	63	85	76	68	63	73	67	62	71	66	61	69	64	61	59
5	81	70	61	56	79	68	61	55	66	60	55	65	59	54	63	58	54	52
6	75	63	55	49	73	62	55	49	60	54	49	59	53	48	57	52	48	46
7	70	58	50	44	68	57	49	44	55	48	44	54	48	43	53	47	43	41
8	65	53	45	40	64	52	45	39	51	44	39	50	44	39	49	43	39	37
9	61	49	41	36	60	48	41	36	47	40	36	46	40	35	45	39	35	34
10	57	45	38	33	56	45	37	33	44	37	32	43	37	32	42	36	32	31

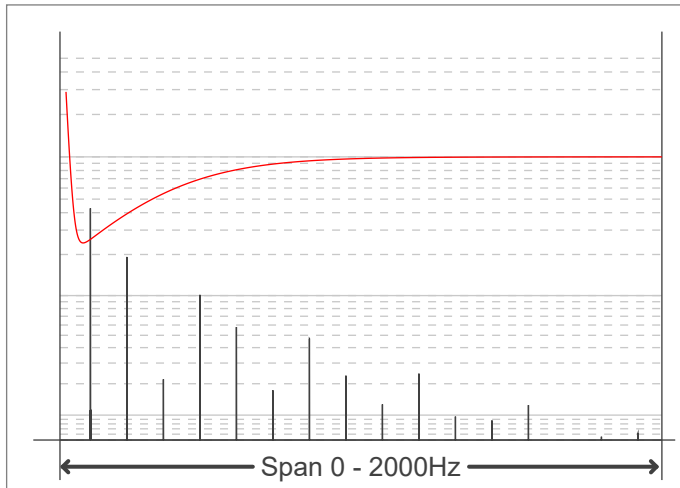


Flicker Details

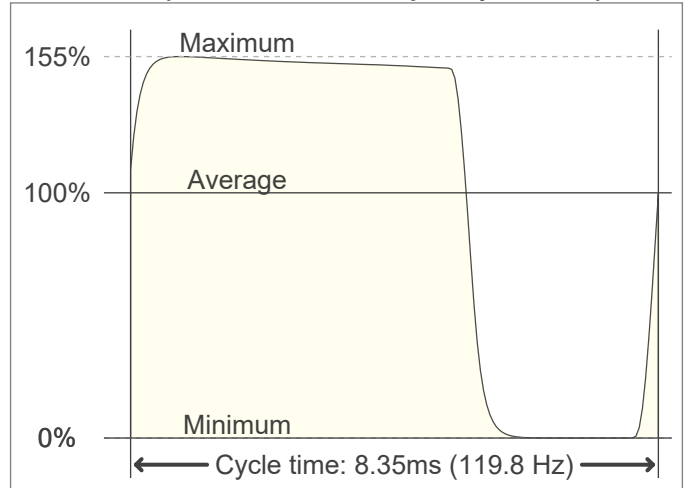
Flicker Meter Type	Viso Systems LabFlicker
Frequency of Input Power	60Hz
Flicker/TLA Sample Rate	20000 sample/s
Measurement Time	
PstLM	180 sec
All other indices	1.2 sec

Flicker Indices (IES)	
Flicker Percentage	100%
Flicker Frequency	119.76Hz
Flicker Index	0.33
Flicker SVM Value	3.13
Flicker PstLM Value	0.03

Flicker Frame



Flicker FFT (flicker curve in frequency domain)



IEEE 1789 Frequency/Modulation Plot

