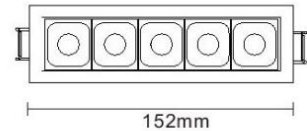
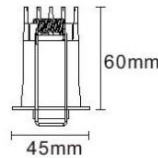




Product Overview

Product Name / Code	LINX 11W Linear Downlight Fixed - LC4470B
Description	3000K, IP40, 24°, Black w. Black Insert, Phase Dim
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

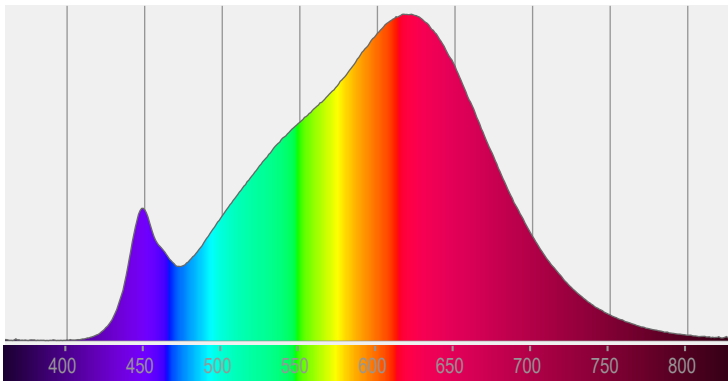
Test Date and Time	1/05/2023 12:18:44 PM
Operator	Johnny Elmer
C-Planes Measured	36
Measurement Resolution	10°
Measurement Distance	464.4cm
Measurement Number	VFR-230501-0072-MS
Tracking Link	http://www.visosystems.com/tracking/?id=VT230504-005850



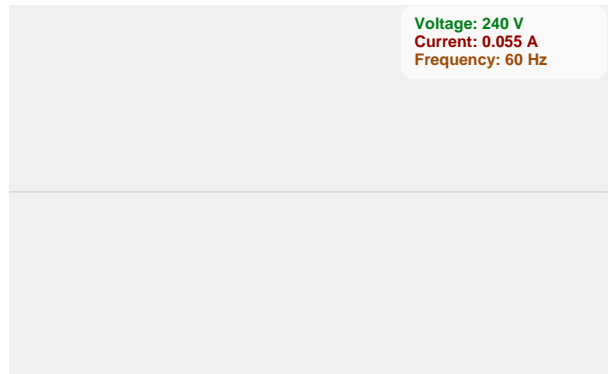
Performance

Total Lumen Output	1024 lm
Light Efficiency	82 Lumen/Watt
Peak (cd)	4771 cd
Nominal Power	12.5 W
Input Voltage	240 V
Frequency of Input Power	60 Hz
Power Factor	0.95
Warm-up (stabilisation) Time	Lamp stabilized in 1 hour 1 min
Warm-up Variation	-8.5

Spectral Power Distribution (SPD)



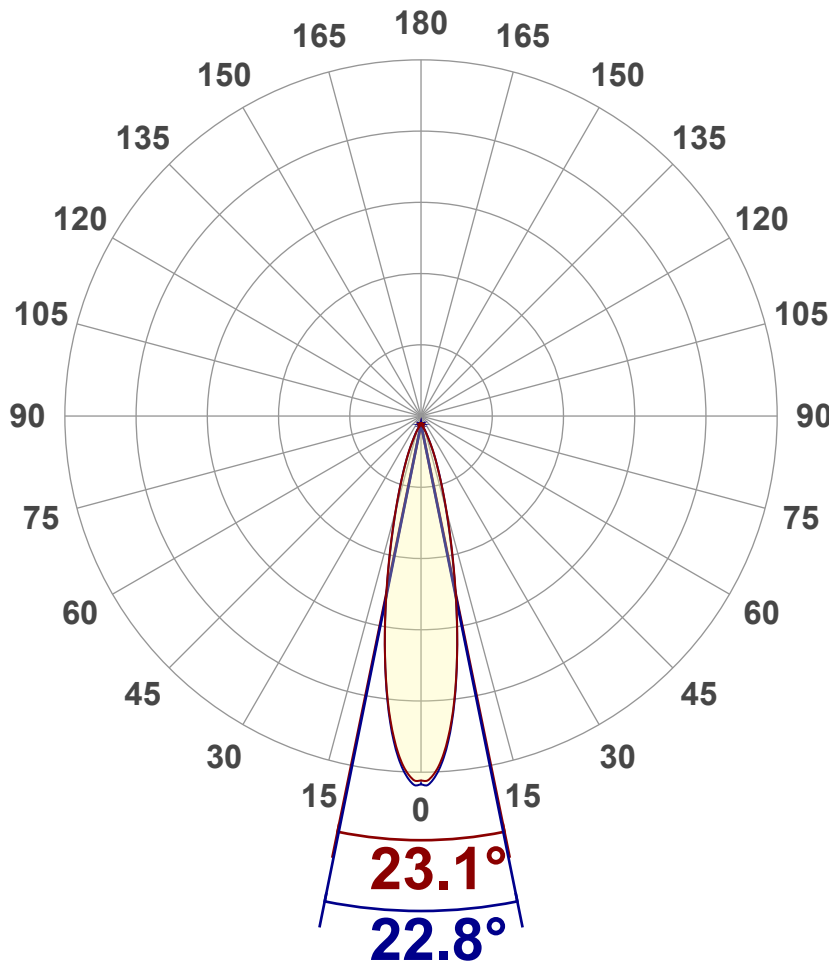
Input Power Curve



Optic Specifications

Correlated Colour Temperature, Target	3000K
Correlated Colour Temperature, Measured	3007K
Colour Rendering Index	CRI 91.4
R9 Value	R9 = 54.0
Colour Rendering TM30-18	R _f 92.0 - R _g 97.5
Colour Quality Scale	CQS = 90.7
Beam Angle	23.1°



Angular Distribution – 0° / 90° Plane

Main Values

Total Lumen Output	1024 lm
Lumen Up% / Down%	0.41 % / 99.59%
Peak Intensity	4771 cd
Beam Angle (50%)	23.1°
Beam Angle (90%)	22.8°
Beam Angle (10%)	n/a°

Cut-off Angle

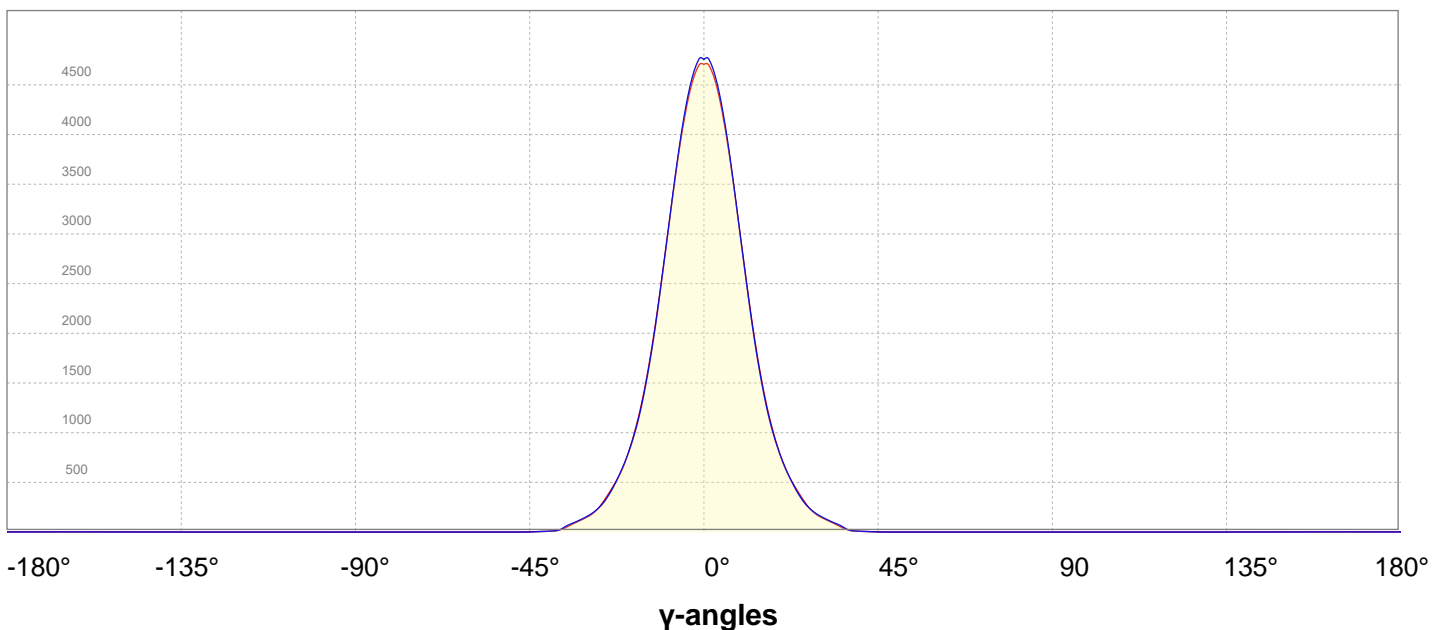
Average 2.5%	65.6°
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Field Angle

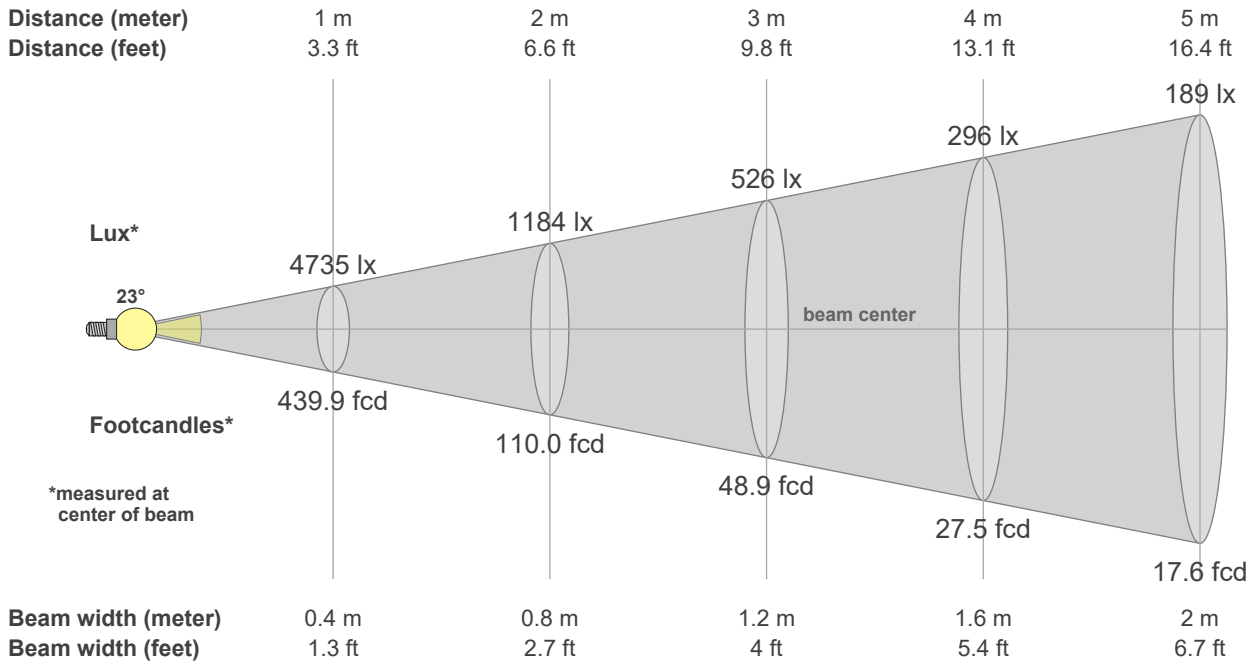
Average 10%	47.4°
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Intensity Ratio

In 120° Cone	99.5%
In 90° Cone	99.3%

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
4735	1184	526	296	189	132	97	74	58	47	39	33	28	24	21	18	16	15	13	12	lux
439.9	110	48.9	27.5	17.6	12.2	9	6.9	5.4	4.4	3.6	3.1	2.6	2.2	2	1.7	1.5	1.4	1.2	1.1	fc

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°	γ
4735	4639	4365	3936	3395	2811	2233	1727	1312	994	741	560	425	304	210	155	115	79	39	15	cd
100%	98%	92%	83%	72%	59%	47%	36%	28%	21%	16%	12%	9%	6%	4%	3%	2%	2%	1%	0%	of 0°val

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°	γ
4735	4696	4411	3966	3406	2800	2215	1704	1290	978	746	562	410	292	215	162	122	88	51	15	cd
100%	99%	93%	84%	72%	59%	47%	36%	27%	21%	16%	12%	9%	6%	5%	3%	3%	2%	1%	0%	of 0°val

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°	γ
4735	4639	4365	3936	3395	2811	2233	1727	1312	994	741	560	425	304	210	155	115	79	39	15	cd
100%	98%	92%	83%	72%	59%	47%	36%	28%	21%	16%	12%	9%	6%	4%	3%	2%	2%	1%	0%	of 0°val

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°	γ
4735	4696	4411	3966	3406	2800	2215	1704	1290	978	746	562	410	292	215	162	122	88	51	15	cd
100%	99%	93%	84%	72%	59%	47%	36%	27%	21%	16%	12%	9%	6%	5%	3%	3%	2%	1%	0%	Of 0°val

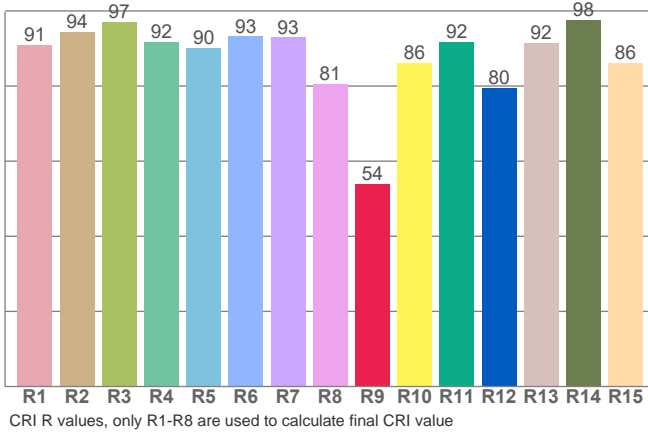


Colour Details

Correlated Colour Temperature, Target	CCT = 3000K
Correlated Colour Temperature, Measured	CCT = 3007K
Colour Rendering Index	CRI 91.4
Colour Rendering Index R9 Value	R9 = 54.0
Colour Rendering TM30-18	R _f 92.0, R _g 97.5
Colour Quality Scale	CQS = 90.7

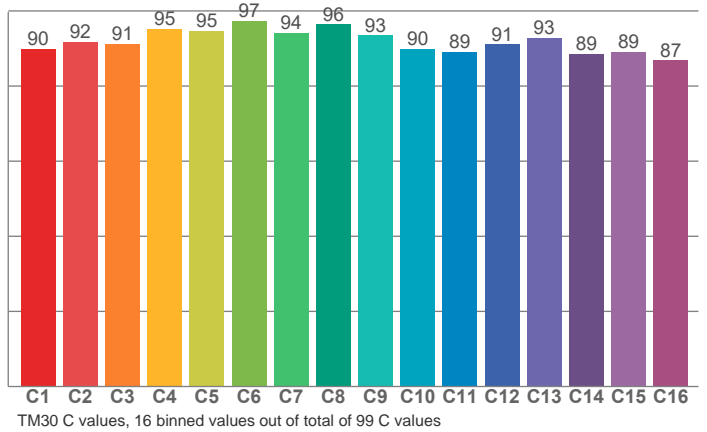
MacAdam Steps	SDCM = 2.9
Colour Coordinates CIE 1931	(x;y) = (0.437;0.404)
Colour Coordinates CIEs 1960	(u;v) = (0.251; 0.348)
Colour Deviation from BBL	Duv = 0.0029
Colour Coordinate CIEs 1976 (CIELUV)	(u';v') = (0.251;0.251)

Colour Rendering Index per reference colour (CIE 1995)



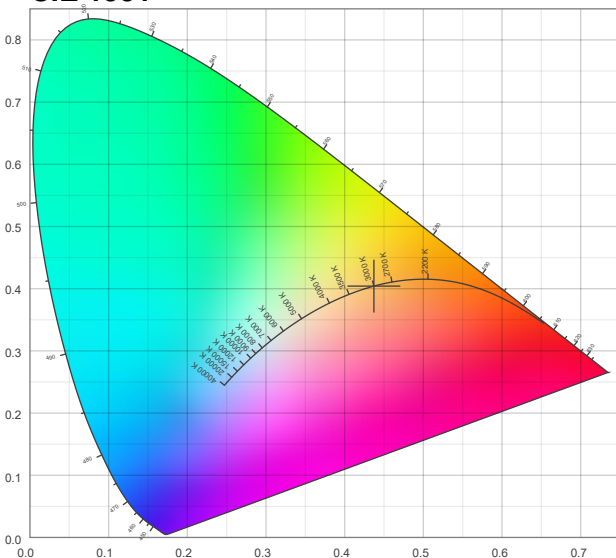
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
90.8	94.4	97.0	91.8	90.2	93.2	92.9	80.6	54.0	86.1	91.8	79.6	91.6	97.7	86.1

TM30-18 Rf-values per hue bin

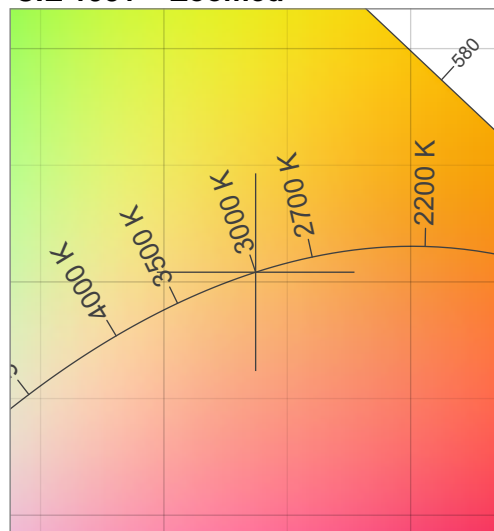


C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
89.8	91.9	91.1	95.2	94.7	97.3	94.1	96.4	93.5	89.8	89.2	91.1	92.9	88.6	89.1	86.8

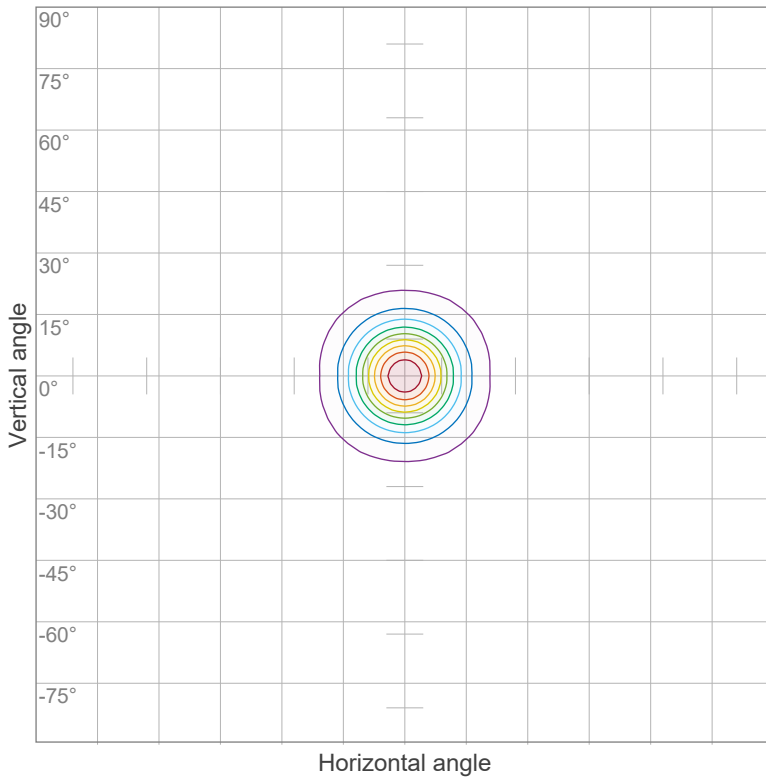
CIE 1931



CIE 1931 – Zoomed



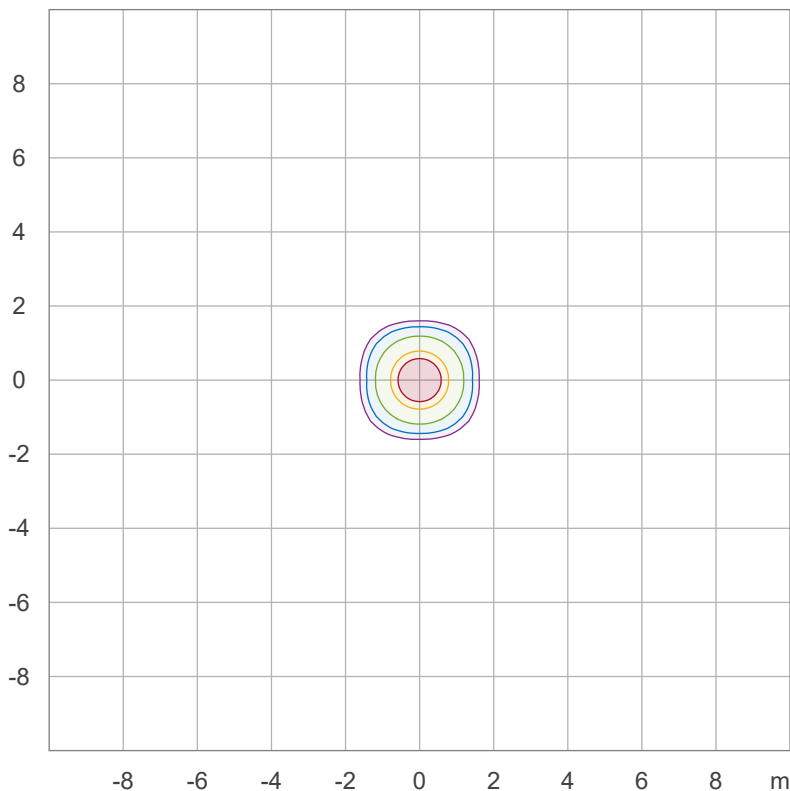
Iso-intensity Diagram (Iso-Candela)



90 %	4293.5 cd
80 %	3816.4 cd
70 %	3339.4 cd
60 %	2862.3 cd
50 %	2385.3 cd
40 %	1908.2 cd
30 %	1431.2 cd
20 %	954.1 cd
10 %	477.1 cd

Peak intensity: 4770.6 cd
Number of c-planes: 36

Iso-illuminance Diagram (Iso-lux)



50.0 %	264.9 lx
30.0 %	158.9 lx
10.0 %	53.0 lx
5.0 %	26.5 lx
3.0 %	15.9 lx

Peak illuminance: 529.8 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		(Viewing direction orthogonal to lamp length axis)					(Viewing direction parallel to lamp length axis)				
X	Y										
2H	2H	7.9	8.3	8.0	8.5	8.7	7.6	8.0	7.7	8.2	8.4
	3H	7.6	8.2	8.0	8.4	8.6	7.3	7.9	7.7	8.1	8.2
	4H	7.5	8.1	7.9	8.3	8.6	7.2	7.8	7.6	8.0	8.3
	6H	7.6	8.0	7.9	8.3	8.7	7.2	7.7	7.5	8.0	8.3
	8H	7.5	7.9	7.8	8.3	8.7	7.2	7.6	7.5	8.0	8.3
4H	12H	7.5	7.9	7.8	8.3	8.7	7.1	7.6	7.5	7.9	8.3
	2H	7.5	8.1	7.9	8.3	8.5	7.2	7.8	7.6	8.0	8.2
	3H	7.4	7.9	7.8	8.2	8.6	7.1	7.5	7.5	7.9	8.3
	4H	7.3	7.7	7.7	8.1	8.6	7.0	7.4	7.4	7.8	8.3
	6H	7.2	7.7	7.7	8.0	8.4	6.9	7.4	7.4	7.7	8.0
8H	8H	7.2	7.6	7.7	7.9	8.3	6.9	7.3	7.4	7.6	8.0
	12H	7.1	7.5	7.6	7.9	8.3	6.8	7.1	7.3	7.5	8.0
	4H	7.1	7.6	7.7	7.9	8.3	6.8	7.3	7.4	7.6	8.0
	6H	7.1	7.4	7.6	7.8	8.4	6.8	7.0	7.3	7.5	8.0
	8H	7.1	7.3	7.6	7.8	8.5	6.8	7.0	7.3	7.5	8.1
12H	12H	7.1	7.3	7.7	7.8	8.4	6.7	6.9	7.3	7.4	8.0
	4H	7.1	7.4	7.6	7.8	8.3	6.8	7.1	7.3	7.5	8.0
	6H	7.1	7.3	7.6	7.8	8.5	6.8	7.0	7.3	7.5	8.1
	8H	7.1	7.2	7.7	7.7	8.3	6.7	6.9	7.3	7.4	8.0

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

S = 1.0H	6.0 / -11.0	5.9 / -12.6
S = 1.5H	8.7 / -11.2	8.7 / -12.8
S = 2.0H	10.7 / -11.4	10.7 / -12.9

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	115	113	111	109	112	110	109	107	106	105	104	103	102	101	99	98	98	96
2	111	107	104	102	109	106	103	100	102	100	98	99	98	96	97	95	94	93
3	107	102	99	96	105	101	98	95	99	96	94	96	94	92	94	92	91	89
4	104	98	94	91	102	97	94	91	95	92	90	93	91	89	92	89	88	86
5	101	95	90	87	99	94	90	87	92	89	86	90	88	85	89	87	85	83
6	98	91	87	84	96	90	86	83	89	86	83	88	85	82	87	84	82	81
7	95	88	84	81	94	87	83	80	86	83	80	85	82	80	84	81	79	78
8	92	85	81	78	91	85	81	78	84	80	77	83	80	77	82	79	77	76
9	89	82	78	75	88	82	78	75	81	78	75	80	77	75	80	77	75	74
10	87	80	76	73	86	80	76	73	79	75	73	78	75	73	78	75	73	72

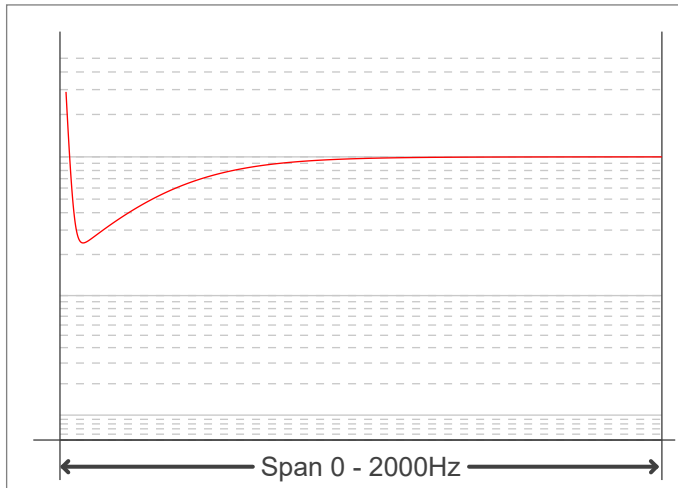
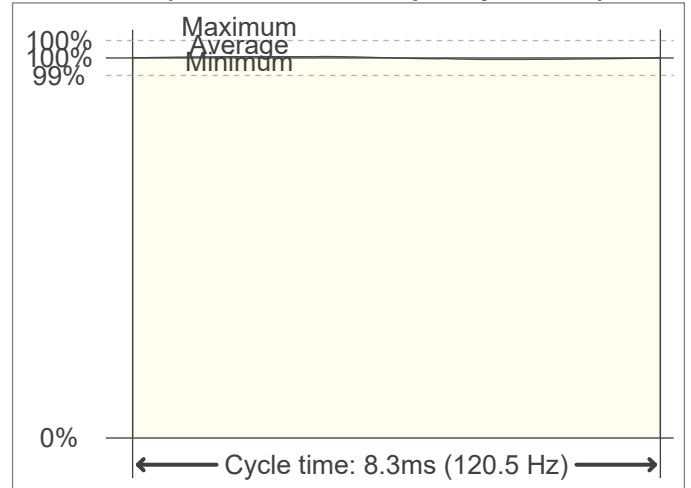


Flicker Details

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

Flicker Indices (IES)

Flicker Percentage	0.44%
Flicker Frequency	120.48 Hz
Flicker Index	0
Flicker SVM Value	0.01
Flicker PstLM Value	0.05

Flicker Frame

Flicker FFT (flicker curve in frequency domain)

IEEE 1789 Frequency/Modulation Plot
