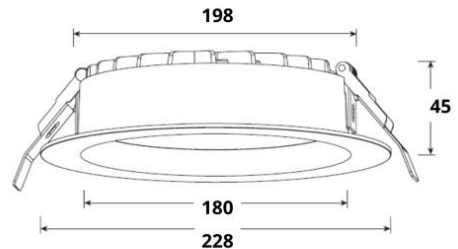


Product Overview

Product Name / Code	KARGO 35W Downlight - LC3645 (4000K)
Description	200mm Cutout, White, Tri-Colour, IP54, 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

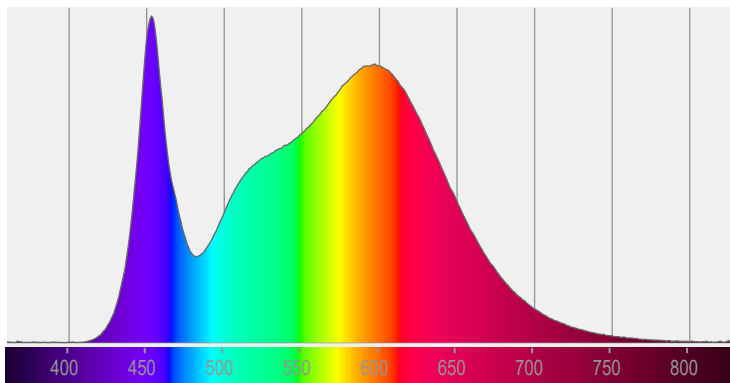
Test Date and Time	31/07/2023 12:12:12 PM
Operator	Johnny Elmer
C-Planes Measured	24
Measurement Resolution	15°
Measurement Distance	446.4cm
Measurement Number	VFR-230731-0154-MS
Tracking Link	http://www.visosystems.com/tracking/?id=VT230802-004885



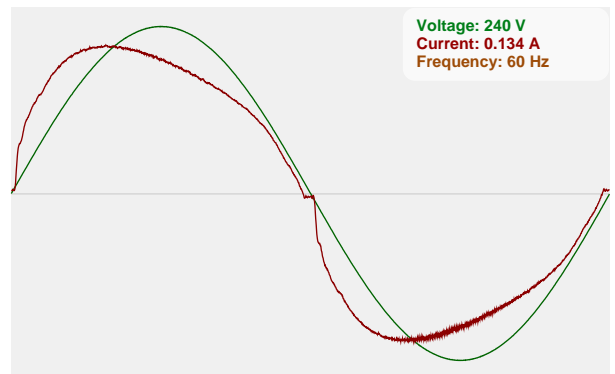
Performance

Total Lumen Output	3544lm
Light Efficiency	114 Lumen/Watt
Peak (cd)	1364cd
Nominal Power	31.2W
Input Voltage	240V
Frequency of Input Power	60Hz
Power Factor	0.97
Warm-up (stabilisation) Time	Lamp stabilized in 1 hour 27 min
Warm-up Variation	-7.7%

Spectral Power Distribution (SPD)



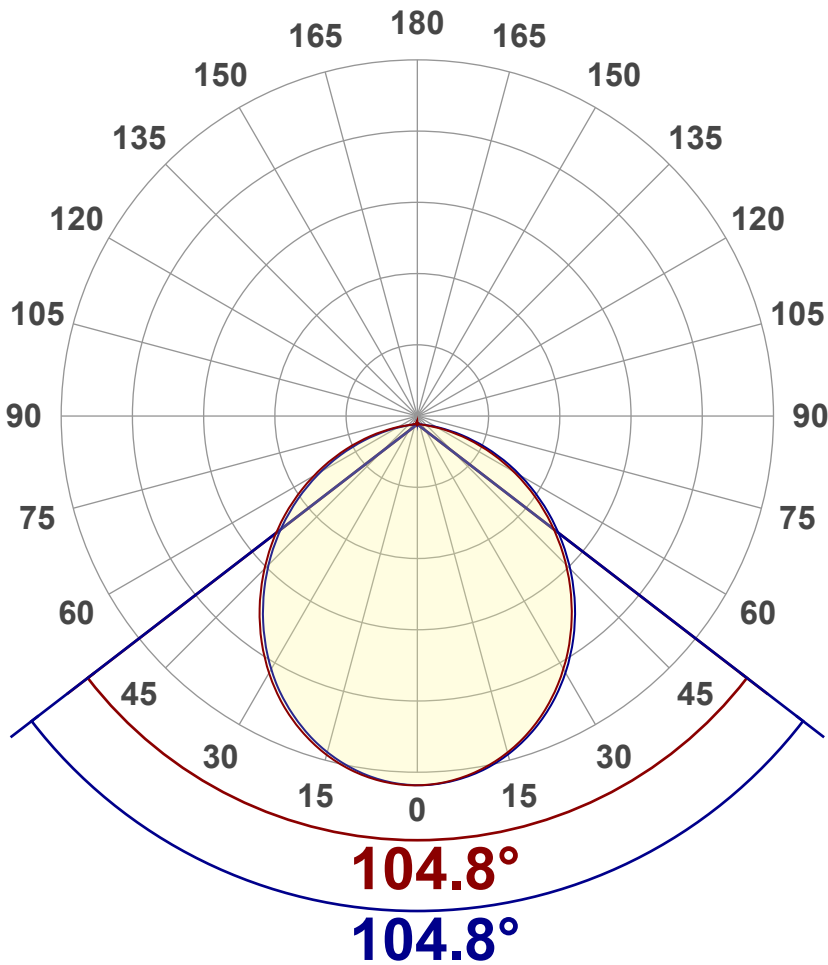
Input Power Curve



Optic Specifications

Correlated Colour Temperature, Target	4000K
Correlated Colour Temperature, Measured	4024K
Colour Rendering Index	CRI 85.1
R9 Value	R9 = 16.2
Colour Rendering TM30-18	R _f 84.5 - R _g 95.8
Colour Quality Scale	CQS = 82.8
Beam Angle	104.9°



Angular Distribution – 0° / 90° Plane

Main Values

Total Lumen Output	3544 lm
Lumen Up% / Down%	0.17 % / 99.83%
Peak Intensity	1364 cd
Beam Angle (50%)	104.9°
Beam Angle (90%)	104.8°
Beam Angle (10%)	104.9°

Cut-off Angle

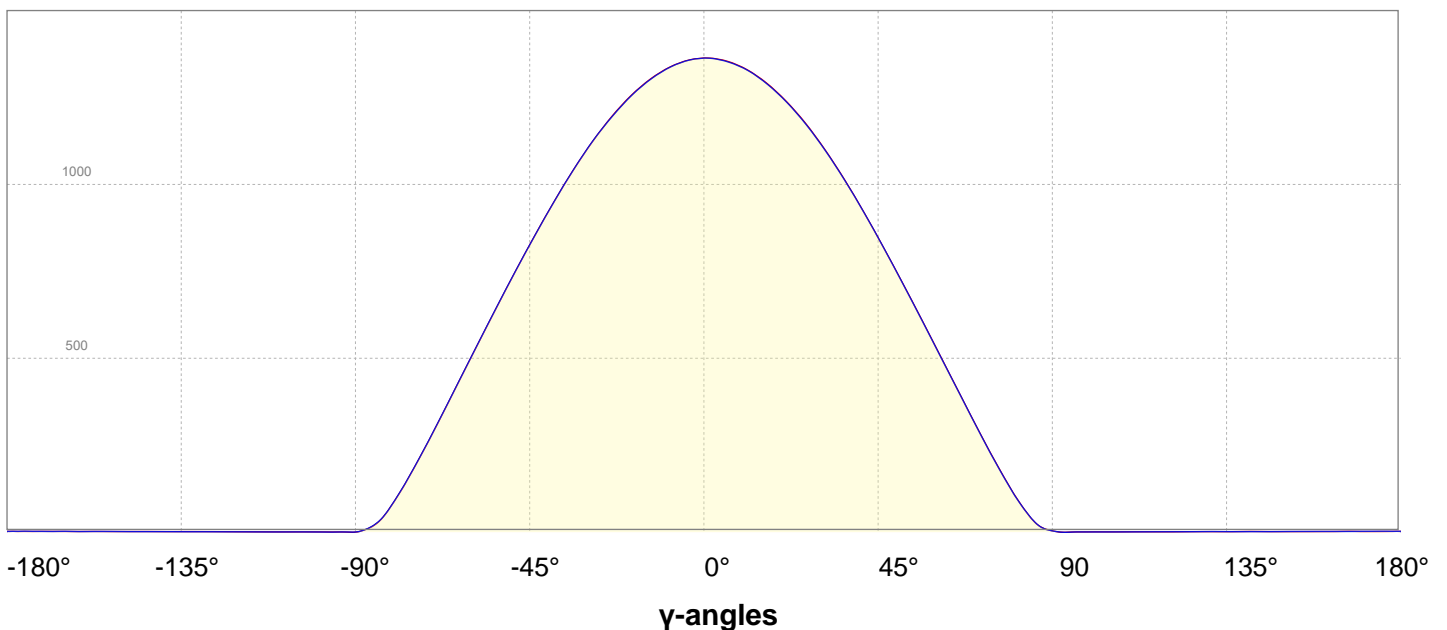
Average 2.5%	169.3°
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Field Angle

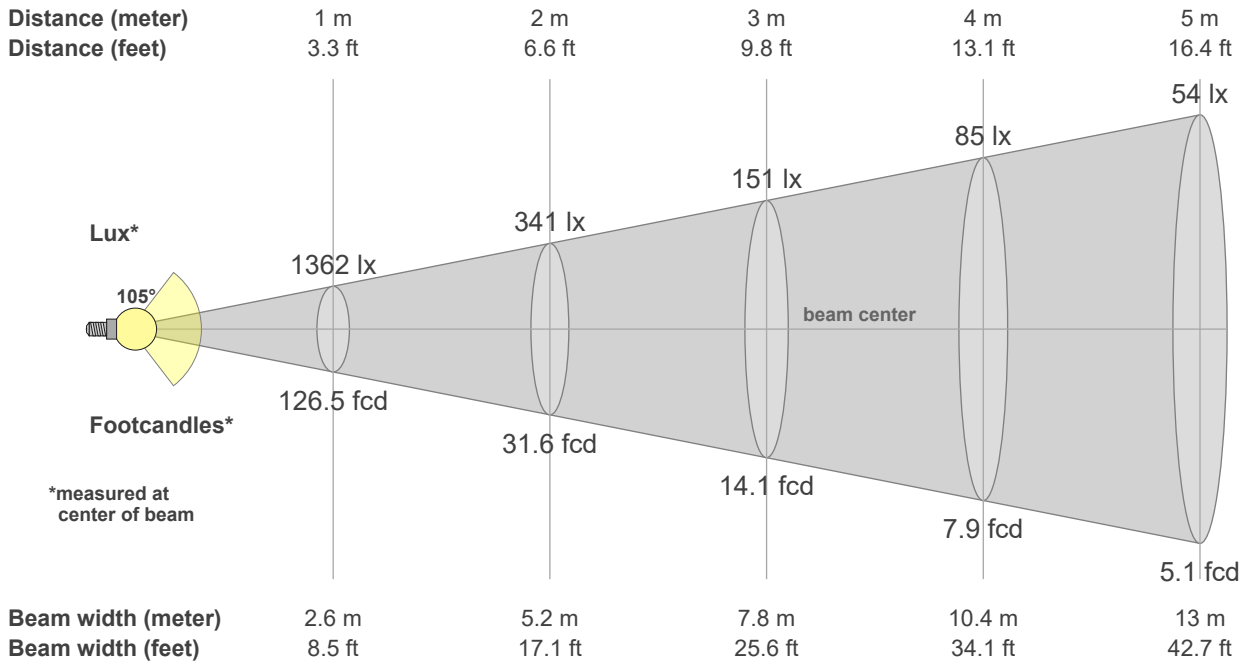
Average 10%	156.1°
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Intensity Ratio

In 120° Cone	81.5%
In 90° Cone	56.7%

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
1362	341	151	85	54	38	28	21	17	14	11	9	8	7	6	5	5	4	4	3	lux
126.5	31.6	14.1	7.9	5.1	3.5	2.6	2	1.6	1.3	1	0.9	0.7	0.6	0.6	0.5	0.4	0.4	0.4	0.3	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
1362	1353	1329	1292	1241	1178	1103	1018	925	826	722	614	505	395	286	183	90	24	2	0	cd
100%	99%	98%	95%	91%	86%	81%	75%	68%	61%	53%	45%	37%	29%	21%	13%	7%	2%	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
1362	1355	1334	1299	1251	1190	1118	1035	944	846	743	637	529	421	312	208	113	39	6	1	cd
100%	99%	98%	95%	92%	87%	82%	76%	69%	62%	55%	47%	39%	31%	23%	15%	8%	3%	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
1362	1352	1328	1291	1240	1177	1103	1018	925	826	722	615	506	396	287	183	91	26	2	0	cd
100%	99%	98%	95%	91%	86%	81%	75%	68%	61%	53%	45%	37%	29%	21%	13%	7%	2%	0%	0%	Of 0°val

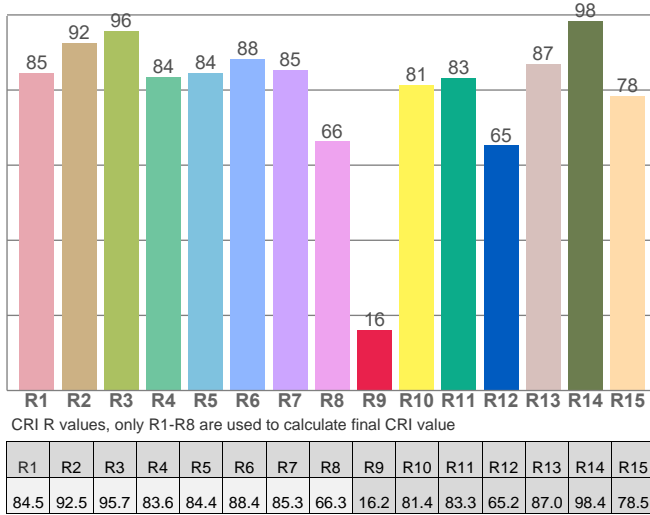


Colour Details

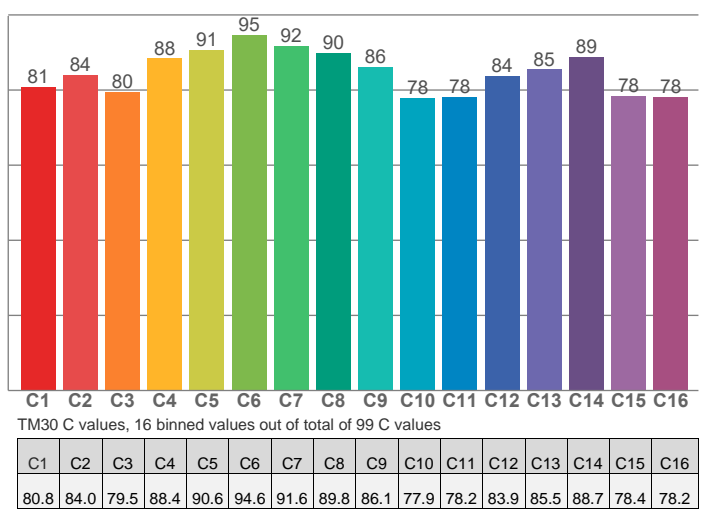
Correlated Colour Temperature, Target	CCT = 4000K
Correlated Colour Temperature, Measured	CCT = 4024K
Colour Rendering Index	CRI 85.1
Colour Rendering Index R9 Value	R9 = 16.2
Colour Rendering TM30-18	R _f 84.5, R _g 95.8
Colour Quality Scale	CQS = 82.8

MacAdam Steps	SDCM = 2.7
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 = -0.0033
Colour Coordinate CIEs 1976 (CIELUV)	(u';v') = (0.225;0.502)

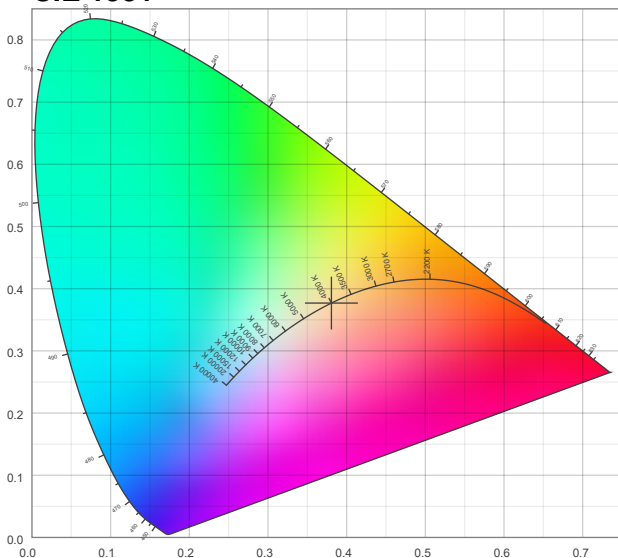
Colour Rendering Index per reference colour (CIE 1995)



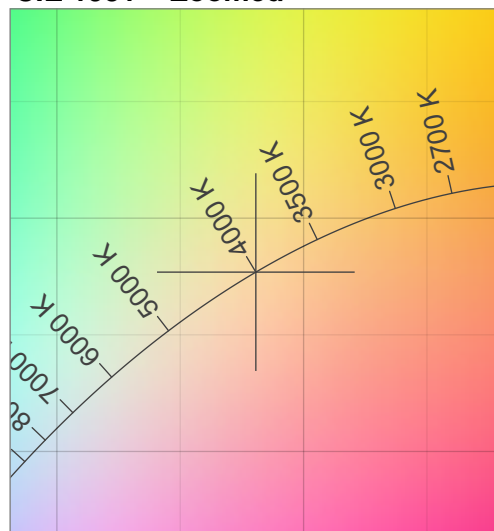
TM30-18 Rf-values per hue bin



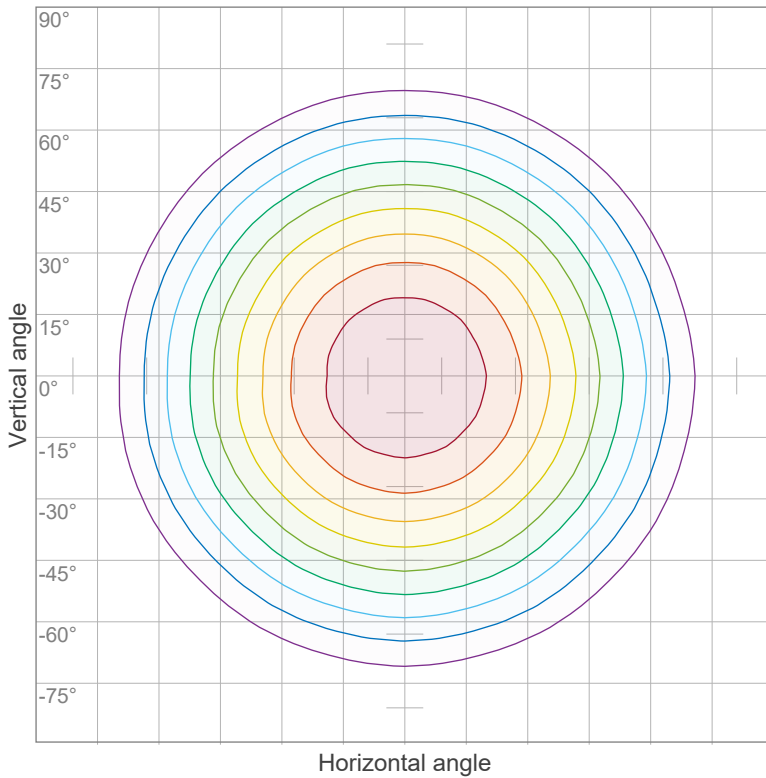
CIE 1931



CIE 1931 – Zoomed



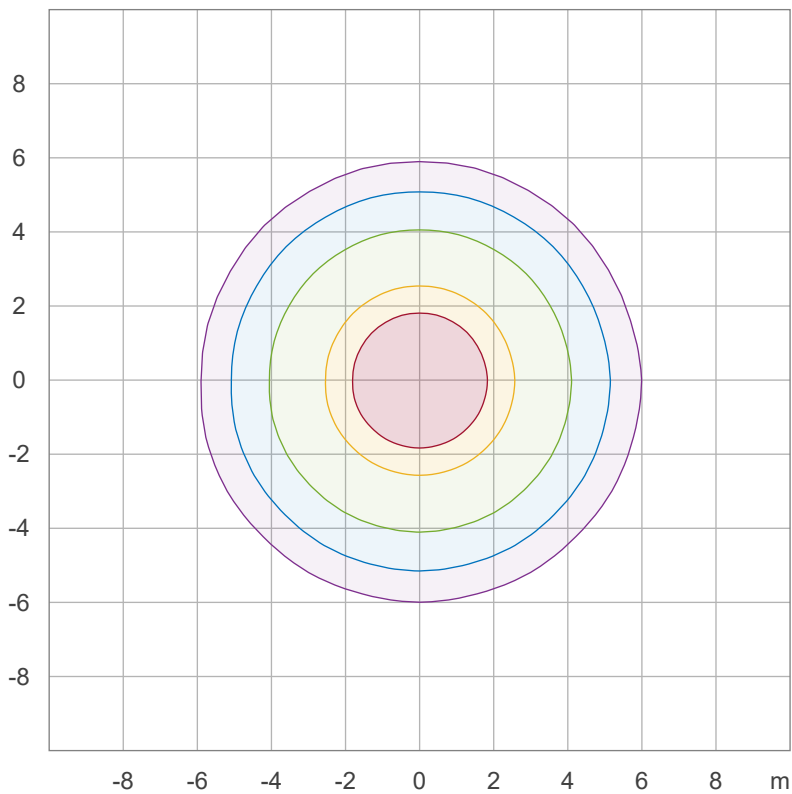
Iso-intensity Diagram (Iso-Candela)



90 %	1227.1 cd
80 %	1090.7 cd
70 %	954.4 cd
60 %	818.1 cd
50 %	681.7 cd
40 %	545.4 cd
30 %	409.0 cd
20 %	272.7 cd
10 %	136.3 cd

Peak intensity: 1363.4 cd
Number of c-planes: 24

Iso-illuminance Diagram (Iso-lux)



50.0 %	75.7 lx
30.0 %	45.4 lx
10.0 %	15.1 lx
5.0 %	7.6 lx
3.0 %	4.5 lx

Peak illuminance: 151.4 lx
Mounting height: 3.0 m
Number of c-planes: 24

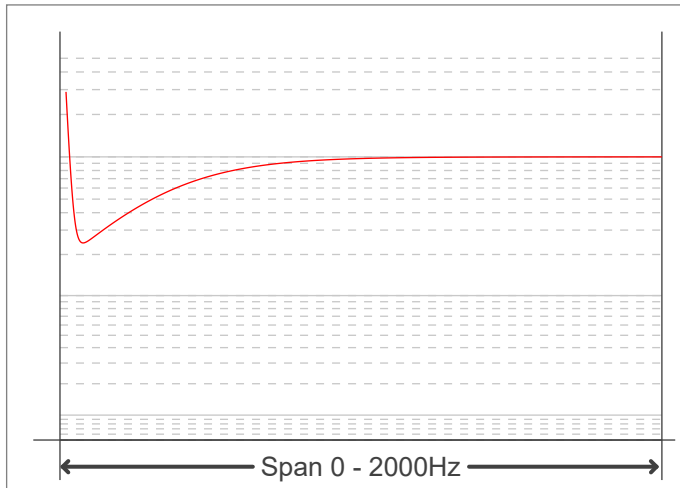


Flicker Details

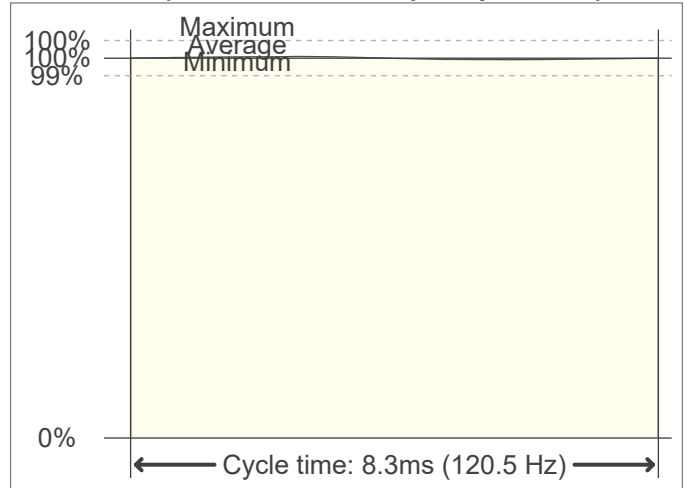
Flicker Meter Type	Viso Systems LabFlicker
Frequency of Input Power	60Hz
Flicker/TLA Sample Rate	20000 sample/s
Measurement Time	
PstLM	180 sec
All other indices	1.2 sec

Flicker Indices (IES)	
Flicker Percentage	0.47%
Flicker Frequency	120.48Hz
Flicker Index	0
Flicker SVM Value	0.01
Flicker PstLM Value	0.04

Flicker Frame



Flicker FFT (flicker curve in frequency domain)



IEEE 1789 Frequency/Modulation Plot

