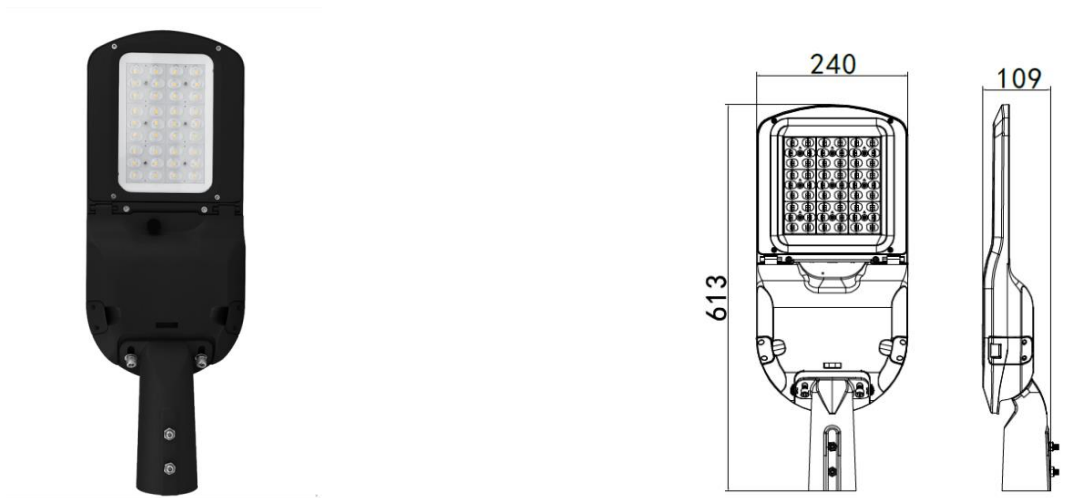




## Product Overview

<b>Product Name / Code</b>	KINGSTON 100W Streetlight - LC6140-T4
<b>Description</b>	Spigot Dia 60mm, IP65, 4000K, Non-Dim, T4 Optic
<b>Manufacturer</b>	Decrolux Lighting Pty Ltd



## Laboratory and Equipment

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

## Measurement Details

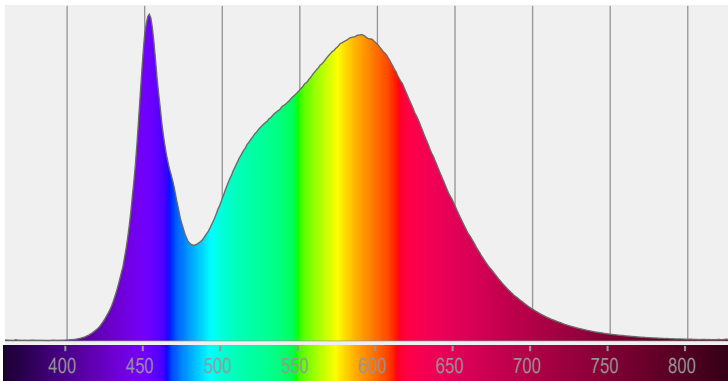
<b>Test Date and Time</b>	31/03/2023 3:28:35 PM
<b>Operator</b>	Johnny Elmer
<b>C-Planes Measured</b>	72
<b>Measurement Resolution</b>	5°
<b>Measurement Distance</b>	457.7cm
<b>Measurement Number</b>	VFR-230331-0040-MS
<b>Tracking Link</b>	<a href="http://www.visosystems.com/tracking/?id=VT230331-000396">http://www.visosystems.com/tracking/?id=VT230331-000396</a>



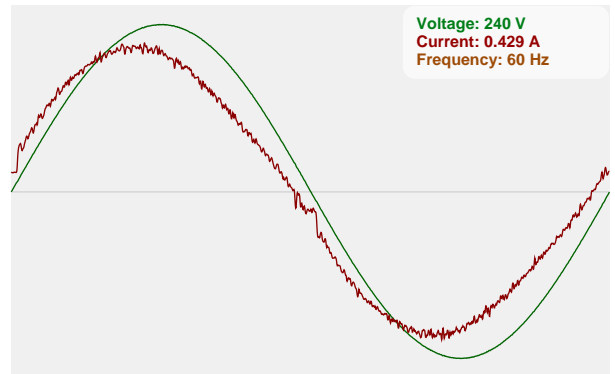
### Performance

<b>Total Lumen Output</b>	15419 lm
<b>Light Efficiency</b>	154 Lumen/Watt
<b>Peak (cd)</b>	7221 cd
<b>Nominal Power</b>	100.3 W
<b>Input Voltage</b>	240 V
<b>Frequency of Input Power</b>	60 Hz
<b>Power Factor</b>	0.97
<b>Warm-up (stabilisation) Time</b>	Lamp stabilized in 15 min 1 sec
<b>Warm-up Variation</b>	-0.1

### Spectral Power Distribution (SPD)



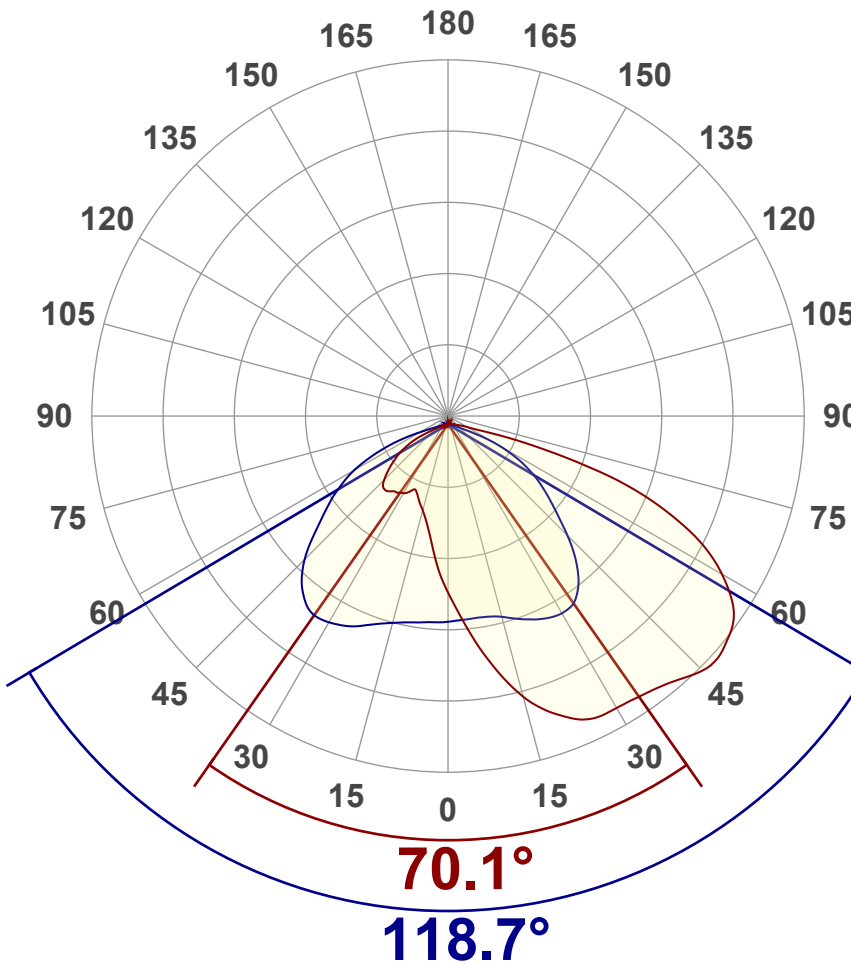
### Input Power Curve



### Optic Specifications

<b>Correlated Colour Temperature, Target</b>	4000K
<b>Correlated Colour Temperature, Measured</b>	4163K
<b>Colour Rendering Index</b>	CRI 79.5
<b>R9 Value</b>	R9 = -10.7
<b>Colour Rendering TM30-18</b>	R <sub>f</sub> 81.7 - R <sub>g</sub> 92.1
<b>Colour Quality Scale</b>	CQS = 79.4
<b>Beam Angle</b>	81.8°



**Angular Distribution – 0° / 90° Plane**

**Main Values**

<b>Total Lumen Output</b>	15419 lm
<b>Lumen Up% / Down%</b>	0.26 % / 99.74%
<b>Peak Intensity</b>	7221 cd
<b>Beam Angle (50%)</b>	81.8°
<b>Beam Angle (90%)</b>	118.7°
<b>Beam Angle (10%)</b>	70.2°

**Cut-off Angle**

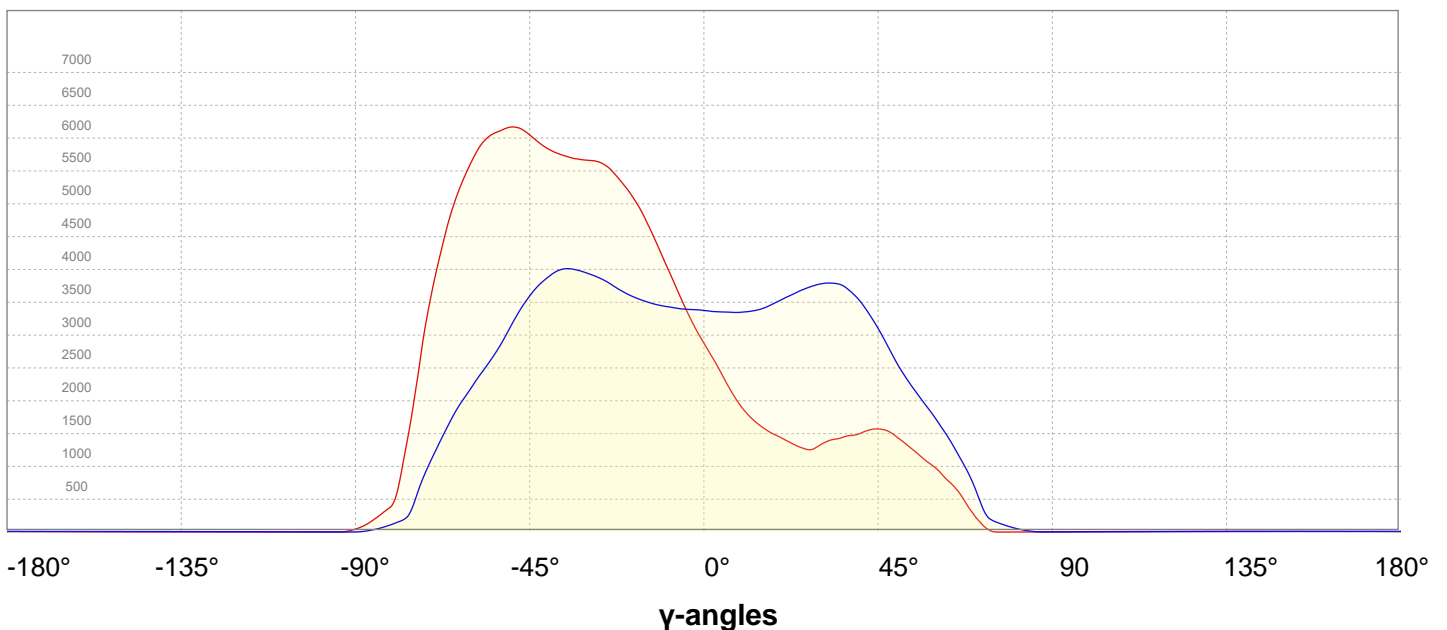
<b>Average 2.5%</b>	159.7°
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**Field Angle**

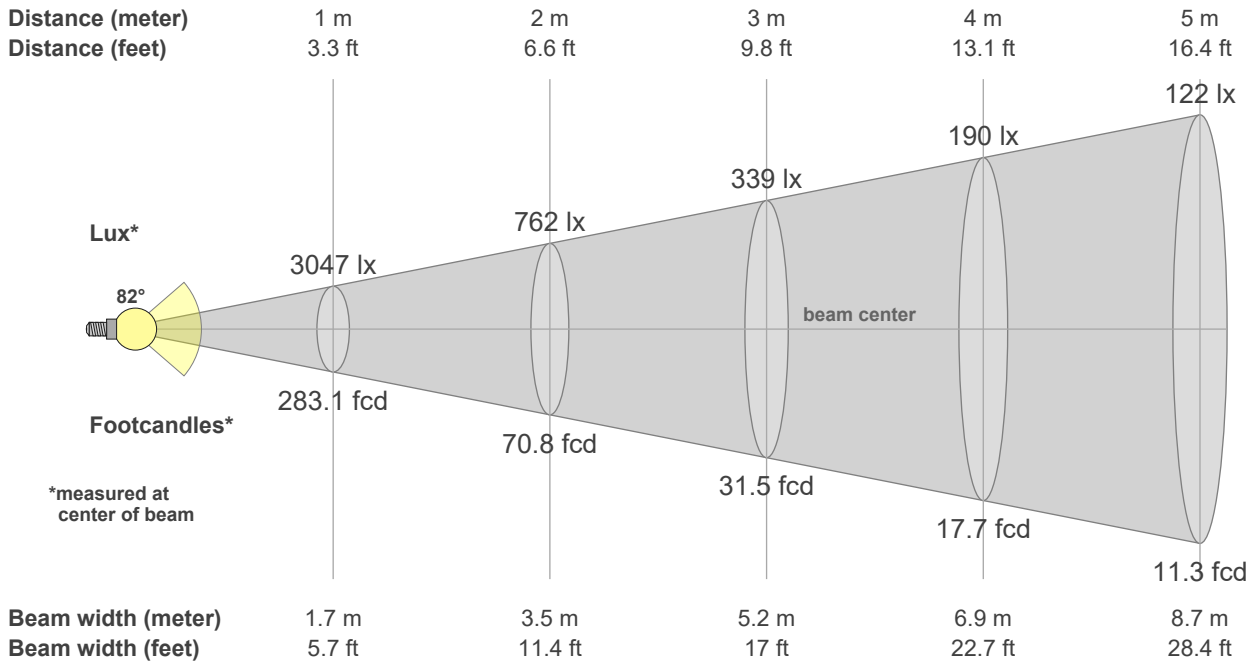
<b>Average 10%</b>	147.3°
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**Intensity Ratio**

<b>In 120° Cone</b>	69.7%
<b>In 90° Cone</b>	41.5%

**C000-C180**
**C090-C270**
**Linear Distribution Diagram – Intensity (candela) vs  $\gamma$ -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
3047	762	339	190	122	85	62	48	38	30	25	21	18	16	14	12	11	9	8	8	lux
283.1	70.8	31.5	17.7	11.3	7.9	5.8	4.4	3.5	2.8	2.3	2	1.7	1.4	1.3	1.1	1	0.9	0.8	0.7	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
3047	3439	4101	4750	5237	5566	5662	5713	5829	6048	6165	6045	5644	4912	3729	1955	480	200	45	1	cd
100%	113%	135%	156%	172%	183%	186%	188%	191%	198%	202%	198%	185%	161%	122%	64%	16%	7%	1%	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
3047	3351	3350	3402	3538	3678	3777	3773	3538	3100	2558	2115	1714	1251	669	165	65	10	2	2	cd
100%	110%	110%	112%	116%	121%	124%	124%	116%	102%	84%	69%	56%	41%	22%	5%	2%	0%	0%	0%	of 0°val

### Intensities in 180° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	γ
3047	2362	1884	1602	1435	1290	1325	1428	1495	1569	1441	1204	969	667	243	6	2	3	4	6	cd
100%	78%	62%	53%	47%	42%	43%	47%	49%	51%	47%	40%	32%	22%	8%	0%	0%	0%	0%	0%	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
3047	3395	3438	3512	3633	3809	3939	4010	3894	3594	3121	2625	2205	1744	1153	424	130	41	2	2	cd
100%	111%	113%	115%	119%	125%	129%	132%	128%	118%	102%	86%	72%	57%	38%	14%	4%	1%	0%	0%	Of 0°val

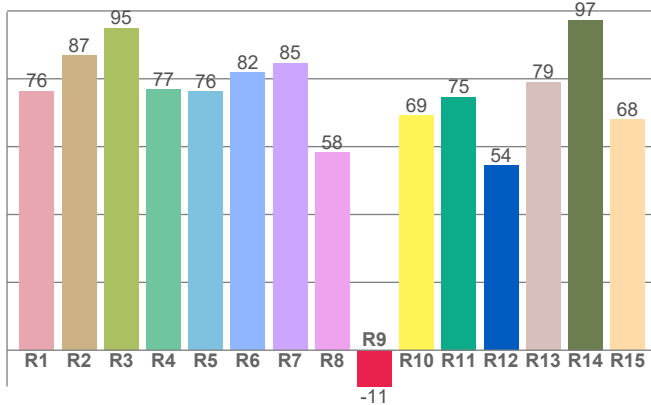


**Colour Details**

<b>Correlated Colour Temperature, Target</b>	CCT = 4000K
<b>Correlated Colour Temperature, Measured</b>	CCT = 4163K
<b>Colour Rendering Index</b>	CRI 79.5
<b>Colour Rendering Index R9 Value</b>	R9 = -10.7
<b>Colour Rendering TM30-18</b>	R <sub>f</sub> 81.7, R <sub>g</sub> 92.1
<b>Colour Quality Scale</b>	CQS = 79.4

<b>MacAdam Steps</b>	SDCM = 4.8
<b>Colour Coordinates CIE 1931</b>	(x;y) = (0.381;0.377)
<b>Colour Coordinates CIEs 1960</b>	(u;v) = (0.225; 0.334)
<b>Colour Deviation from BBL</b>	Duv = 0.0047
<b>Colour Coordinate CIEs 1976 (CIELUV)</b>	(u';v') = (0.225;0.225)

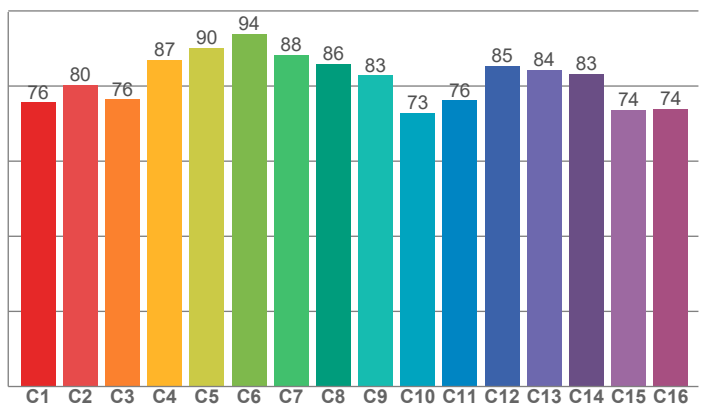
**Colour Rendering Index per reference colour (CIE 1995)**



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
76.3	86.9	94.9	76.9	76.2	81.9	84.6	58.3	-10.7	69.2	74.7	54.4	79.0	97.4	68.0

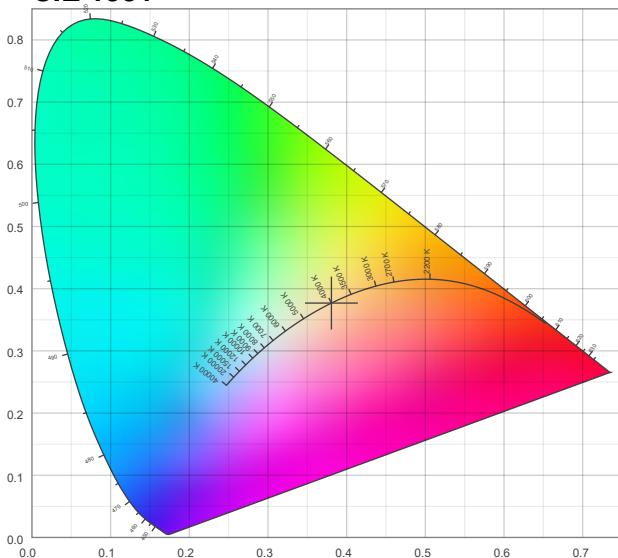
**TM30-18 Rf-values per hue bin**



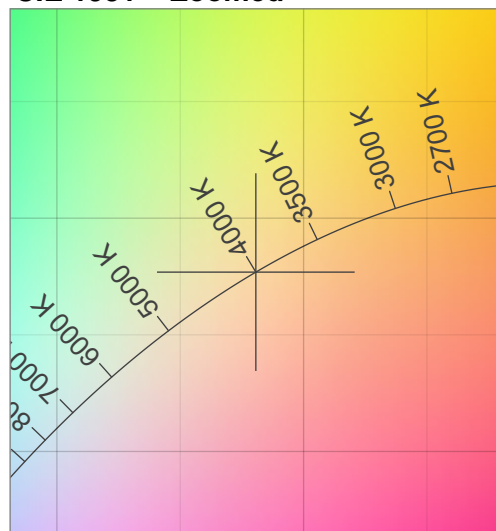
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
75.6	80.2	76.4	87.0	90.1	93.8	88.4	86.0	82.8	72.8	76.2	85.3	84.3	83.1	73.7	73.8

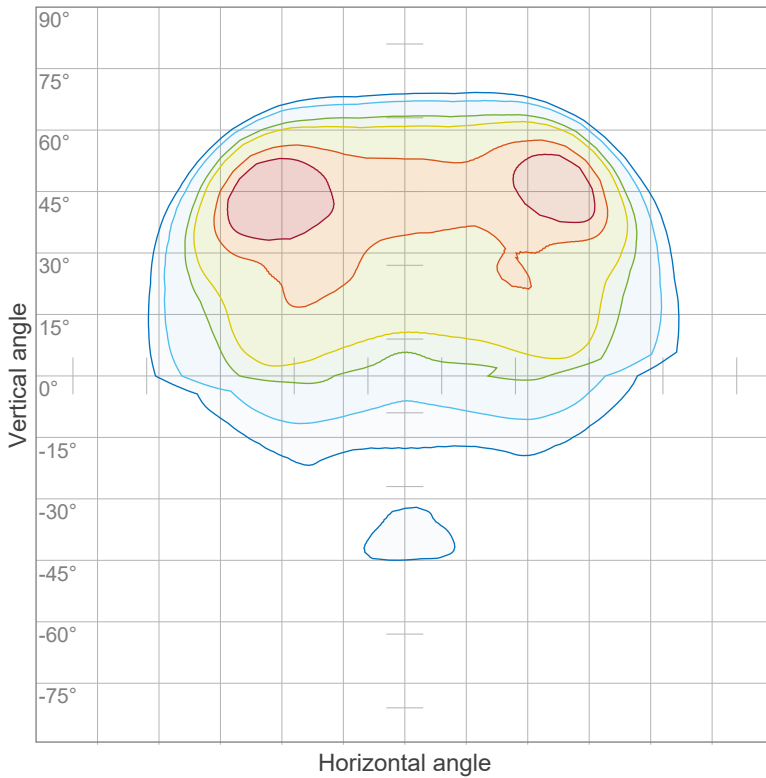
**CIE 1931**



**CIE 1931 – Zoomed**



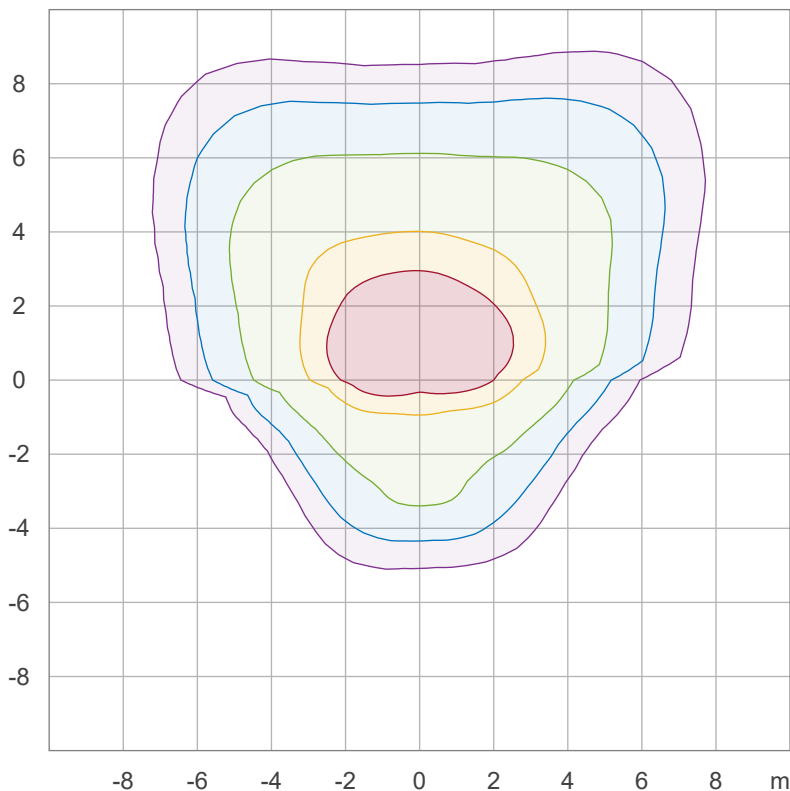
### Iso-intensity Diagram (Iso-Candela)



90 %	6497.9 cd
80 %	5775.9 cd
70 %	5053.9 cd
60 %	4331.9 cd
50 %	3609.9 cd
40 %	2888.0 cd
30 %	2166.0 cd
20 %	1444.0 cd
10 %	722.0 cd

Peak intensity: 7219.9 cd  
Number of c-planes: 72

### Iso-illuminance Diagram (Iso-lux)



50.0 %	242.2 lx
30.0 %	145.3 lx
10.0 %	48.4 lx
5.0 %	24.2 lx
3.0 %	14.5 lx

Peak illuminance: 484.3 lx  
Mounting height: 3.0 m  
Number of c-planes: 72



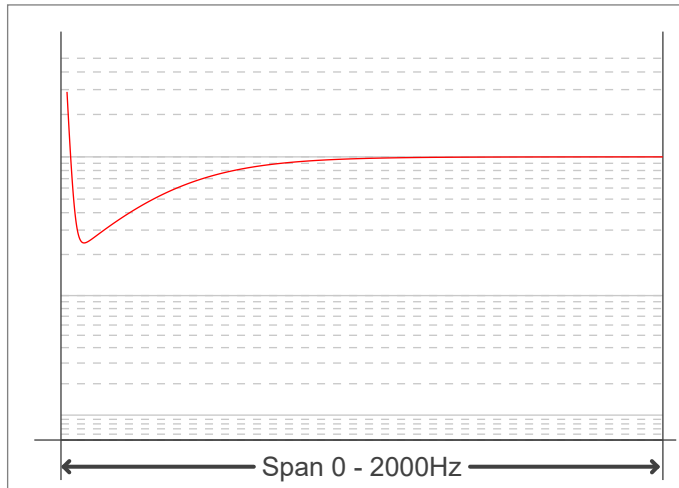
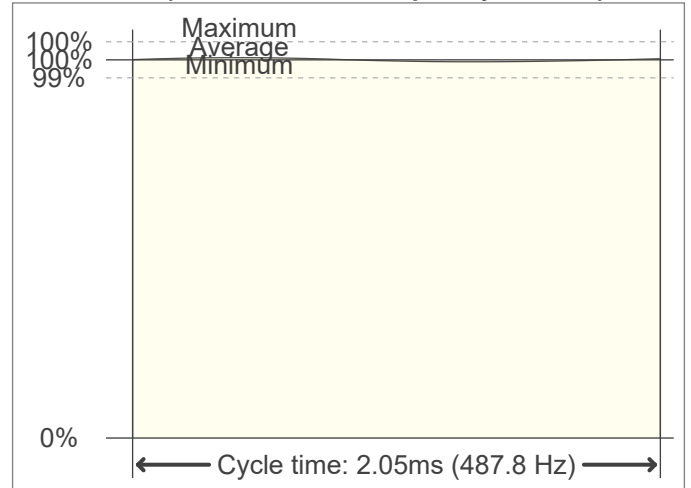


**Flicker Details**

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

**Flicker Indices (IES)**

<b>Flicker Percentage</b>	0.89%
<b>Flicker Frequency</b>	487.8 Hz
<b>Flicker Index</b>	0
<b>Flicker SVM Value</b>	0.01
<b>Flicker PstLM Value</b>	0.02

**Flicker Frame**

**Flicker FFT (flicker curve in frequency domain)**

**IEEE 1789 Frequency/Modulation Plot**
