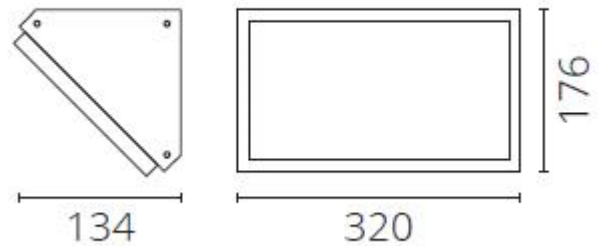




## Product Overview

<b>Product Name / Code</b>	RAVEN 35W Surface Mount Floodlight - LC4231 (4K)
<b>Description</b>	300mm, Charcoal, TRI-Colour, Non-Dim
<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

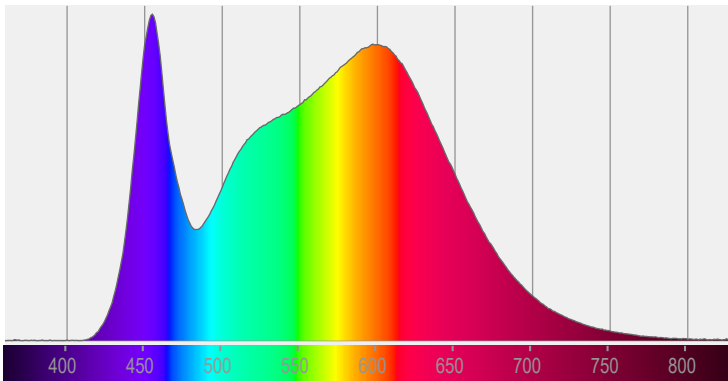
<b>Test Date and Time</b>	29/05/2023 3:41:51 PM
<b>Operator</b>	Johnny Elmer
<b>C-Planes Measured</b>	36
<b>Measurement Resolution</b>	10°
<b>Measurement Distance</b>	476.1cm
<b>Measurement Number</b>	VFR-230529-0096-MS
<b>Tracking Link</b>	<a href="http://www.visosystems.com/tracking/?id=VT230531-002529">http://www.visosystems.com/tracking/?id=VT230531-002529</a>



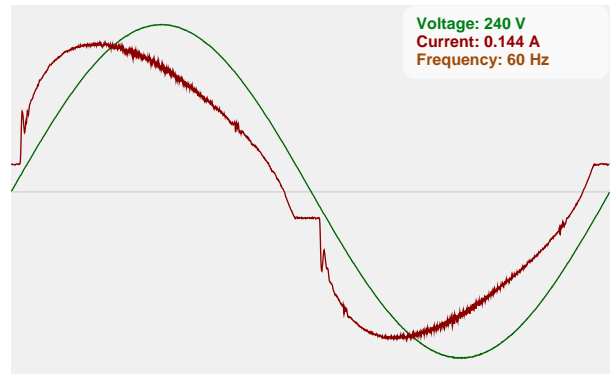
### Performance

<b>Total Lumen Output</b>	3392 lm
<b>Light Efficiency</b>	106 Lumen/Watt
<b>Peak (cd)</b>	1179 cd
<b>Nominal Power</b>	32.0 W
<b>Input Voltage</b>	240 V
<b>Frequency of Input Power</b>	60 Hz
<b>Power Factor</b>	0.93
<b>Warm-up (stabilisation) Time</b>	Lamp stabilized in 1 hour 1 min
<b>Warm-up Variation</b>	-8.5

### Spectral Power Distribution (SPD)



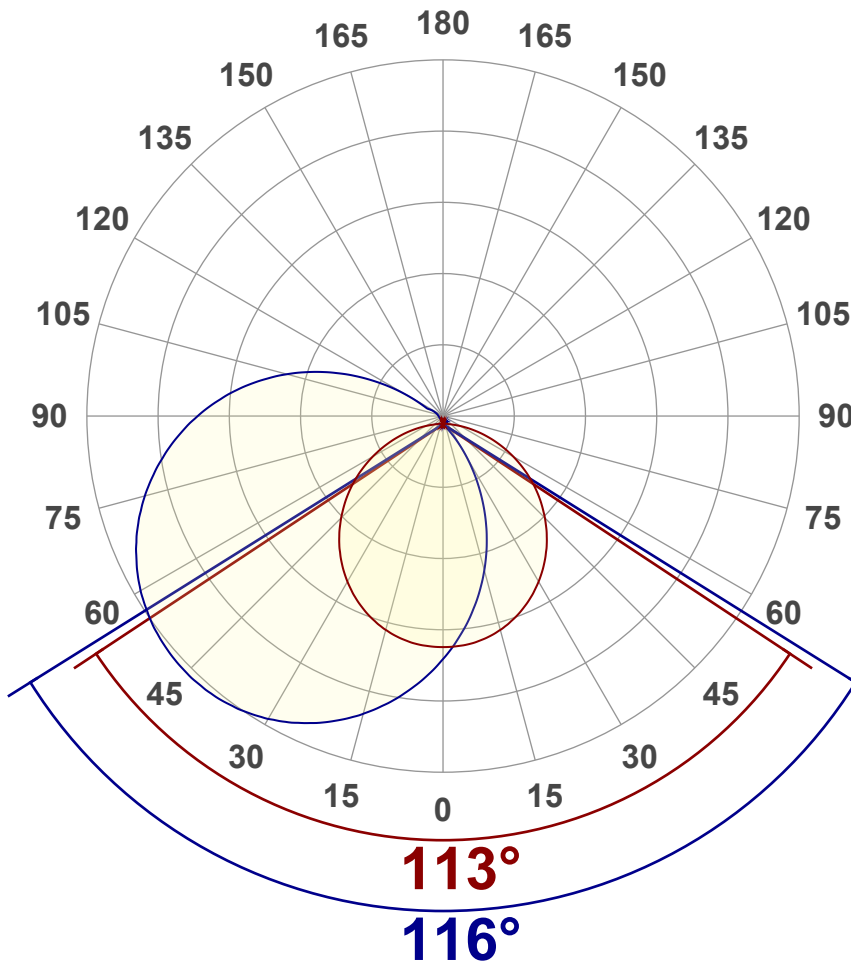
### Input Power Curve



### Optic Specifications

<b>Correlated Colour Temperature, Target</b>	4000K
<b>Correlated Colour Temperature, Measured</b>	4156K
<b>Colour Rendering Index</b>	CRI 87.5
<b>R9 Value</b>	R9 = 28.5
<b>Colour Rendering TM30-18</b>	R <sub>f</sub> 86.4 - R <sub>g</sub> 95.9
<b>Colour Quality Scale</b>	CQS = 85.6
<b>Beam Angle</b>	111.8°



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

**Main Values**

<b>Total Lumen Output</b>	3392 lm
<b>Lumen Up% / Down%</b>	16.29 % / 83.71%
<b>Peak Intensity</b>	1179 cd
<b>Beam Angle (50%)</b>	111.8°
<b>Beam Angle (90%)</b>	116°
<b>Beam Angle (10%)</b>	n/a°

**Cut-off Angle**

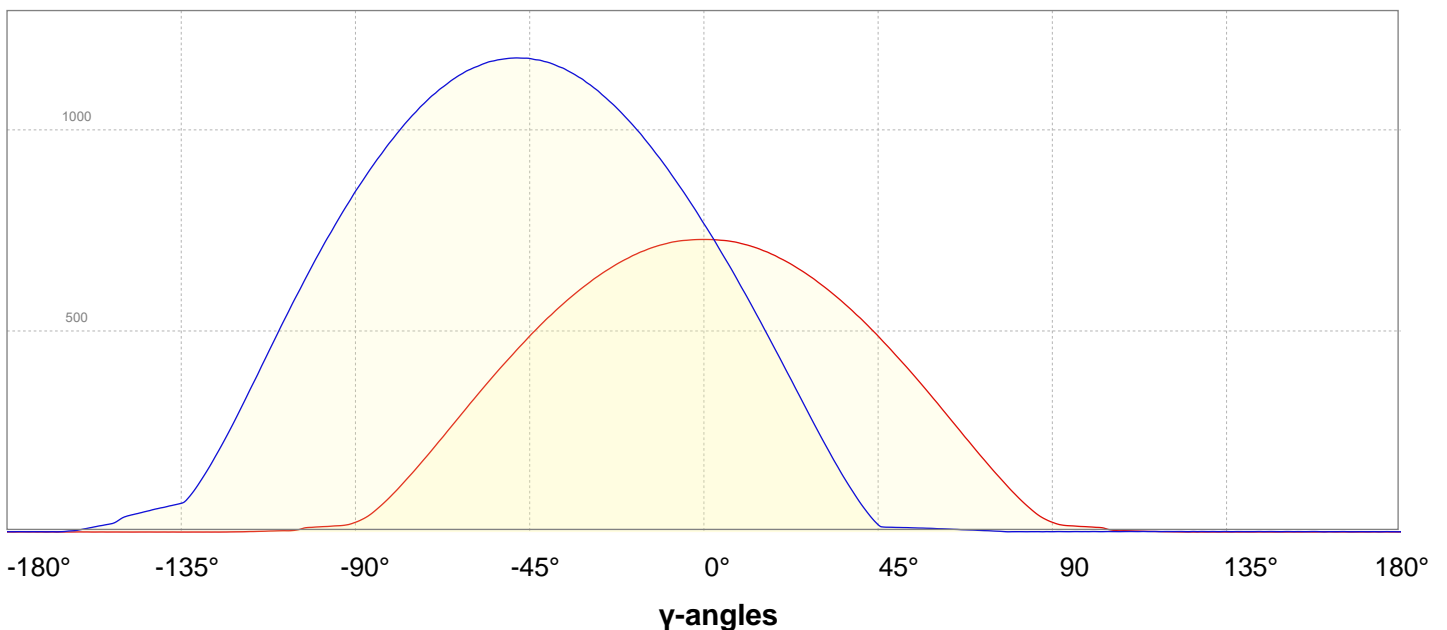
<b>Average 2.5%</b>	199.5°
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**Field Angle**

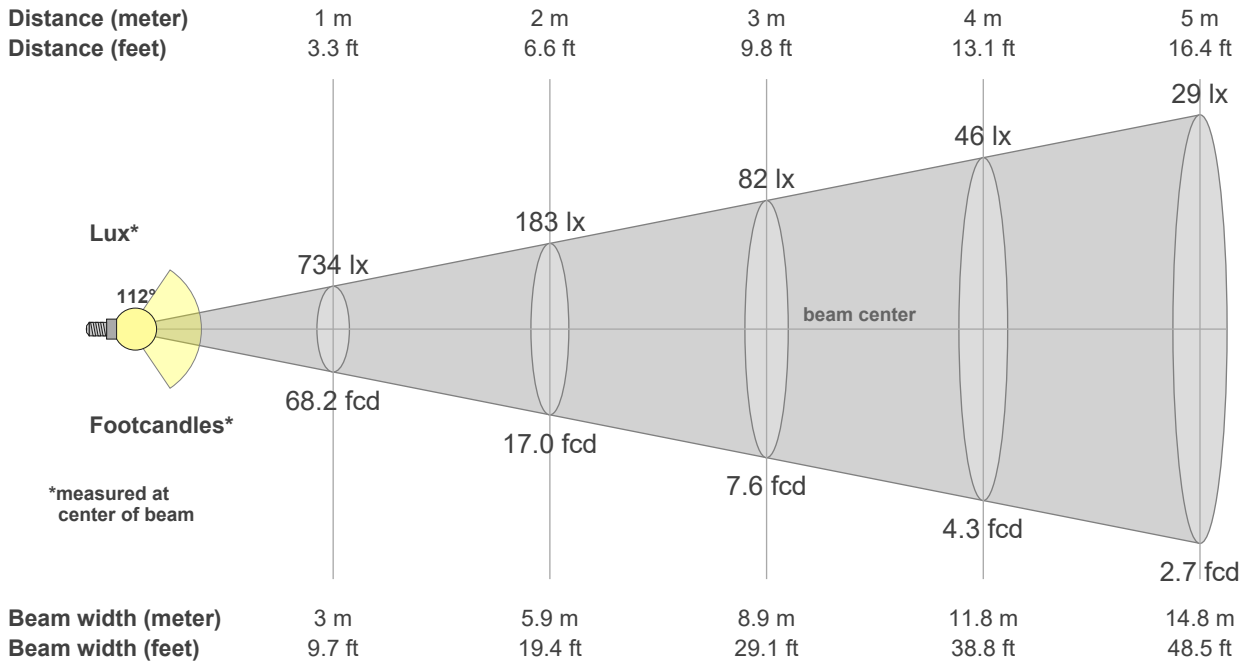
<b>Average 10%</b>	166.9°
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**Intensity Ratio**

<b>In 120° Cone</b>	52.1%
<b>In 90° Cone</b>	33.7%

**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
734	183	82	46	29	20	15	11	9	7	6	5	4	4	3	3	3	2	2	2	lux
68.2	17	7.6	4.3	2.7	1.9	1.4	1.1	0.8	0.7	0.6	0.5	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	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
734	725	716	701	679	651	617	579	535	487	435	381	324	265	207	150	98	53	24	15	cd
100%	99%	98%	96%	93%	89%	84%	79%	73%	66%	59%	52%	44%	36%	28%	20%	13%	7%	3%	2%	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
734	687	604	516	425	333	241	155	78	19	11	10	9	7	5	2	1	1	1	1	cd
100%	94%	82%	70%	58%	45%	33%	21%	11%	3%	2%	1%	1%	1%	1%	0%	0%	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
734	725	716	701	679	651	617	579	535	487	435	381	324	265	207	150	98	53	24	15	cd
100%	99%	98%	96%	93%	89%	84%	79%	73%	66%	59%	52%	44%	36%	28%	20%	13%	7%	3%	2%	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
734	842	911	973	1029	1076	1116	1146	1167	1177	1178	1170	1152	1124	1086	1039	982	918	847	768	cd
100%	115%	124%	133%	140%	147%	152%	156%	159%	160%	161%	159%	157%	153%	148%	142%	134%	125%	115%	105%	Of 0°val

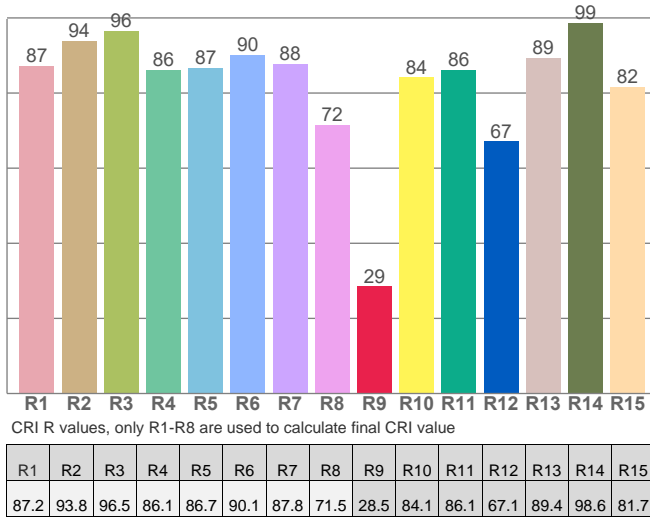


**Colour Details**

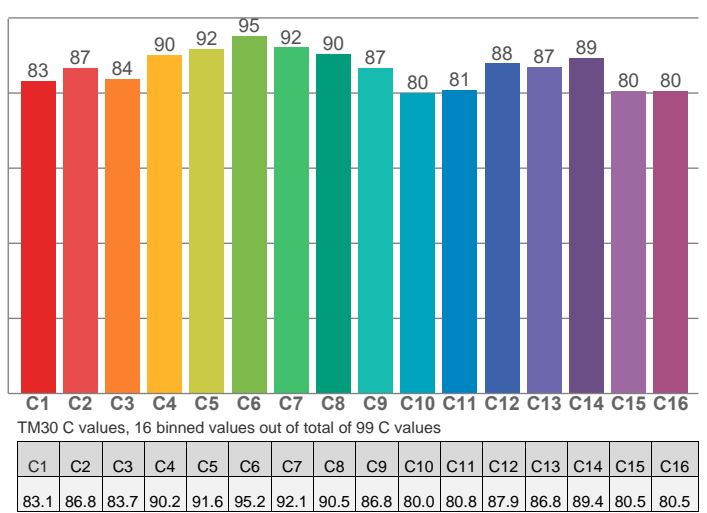
<b>Correlated Colour Temperature, Target</b>	CCT = 4000K
<b>Correlated Colour Temperature, Measured</b>	CCT = 4156K
<b>Colour Rendering Index</b>	CRI 87.5
<b>Colour Rendering Index R9 Value</b>	R9 = 28.5
<b>Colour Rendering TM30-18</b>	R <sub>f</sub> 86.4, R <sub>g</sub> 95.9
<b>Colour Quality Scale</b>	CQS = 85.6

<b>MacAdam Steps</b>	SDCM = 3.6
<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 = -0.0014
<b>Colour Coordinate CIEs 1976 (CIELUV)</b>	(u';v') = (0.225;0.225)

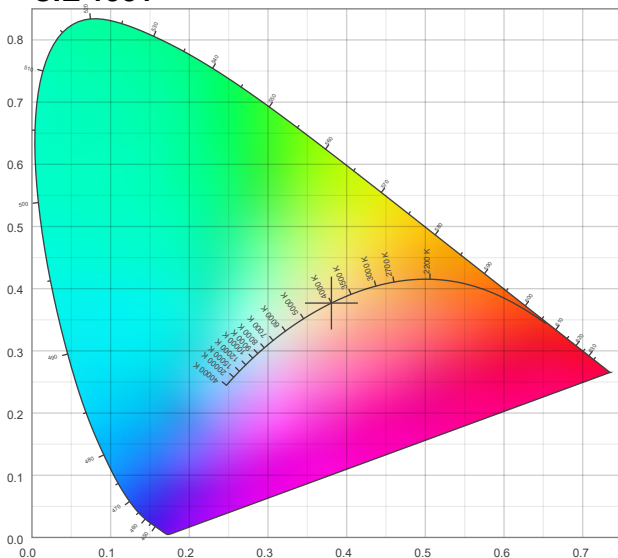
**Colour Rendering Index per reference colour (CIE 1995)**



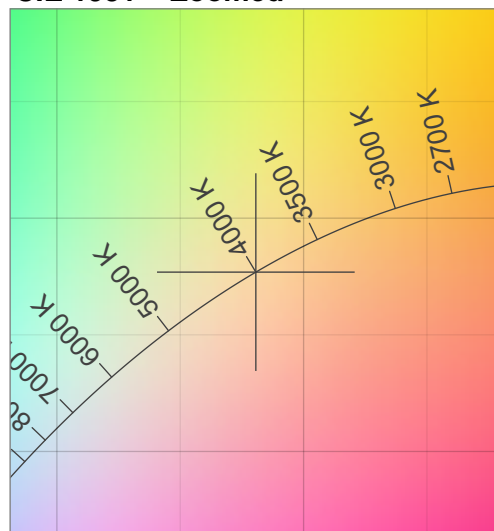
**TM30-18 Rf-values per hue bin**



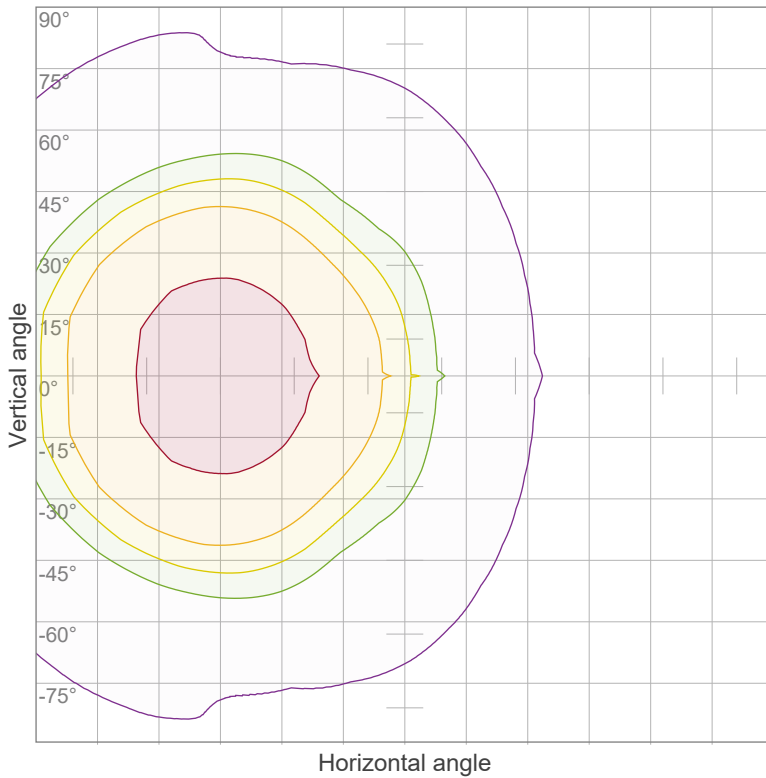
**CIE 1931**



**CIE 1931 – Zoomed**



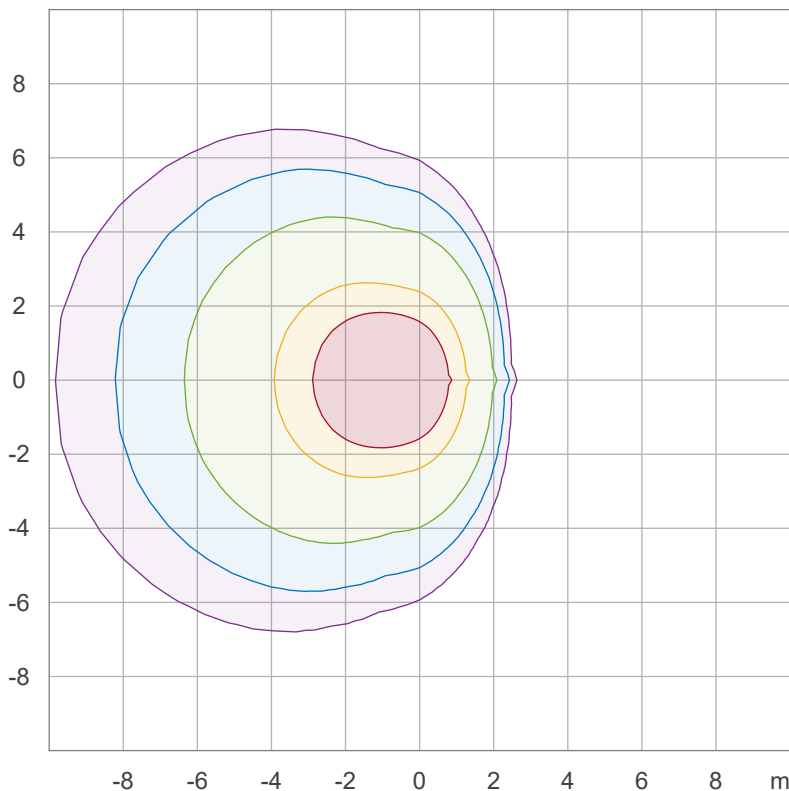
### Iso-intensity Diagram (Iso-Candela)



90 %	1060.8 cd
80 %	942.9 cd
70 %	825.0 cd
60 %	707.2 cd
50 %	589.3 cd
40 %	471.5 cd
30 %	353.6 cd
20 %	235.7 cd
10 %	117.9 cd

Peak intensity: 1178.6 cd  
Number of c-planes: 36

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



50.0 %	48.8 lx
30.0 %	29.3 lx
10.0 %	9.8 lx
5.0 %	4.9 lx
3.0 %	2.9 lx

Peak illuminance: 97.6 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	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	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		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/wrong symmetry. Goto Edit->Photometric->Corrections and select Correct asymmetry.

## 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	115 115 115	115 111 111	111 111 102	102 102 94	94 94 87	87 87 84
1	101 95 89	84 97 91	86 81 84	79 76 77	74 70 71	68 66 62
2	91 81 73	66 86 77	70 64 71	65 60 65	60 56 60	56 52 49
3	82 70 61	53 78 67	58 52 62	54 49 57	51 46 52	47 43 40
4	75 61 52	44 71 59	50 43 54	47 41 50	43 38 46	40 36 33
5	68 54 45	37 65 52	43 36 48	40 35 44	38 33 41	35 31 28
6	63 49 39	32 60 47	38 31 43	36 30 40	33 28 37	31 27 24
7	58 44 35	28 55 42	34 27 39	32 26 36	30 25 34	28 24 21
8	54 40 31	25 51 38	30 24 36	28 23 33	27 22 31	25 21 19
9	50 36 28	22 48 35	27 22 33	26 21 31	24 20 28	23 19 17
10	47 34 25	20 45 32	25 20 30	23 19 28	22 18 26	21 17 15

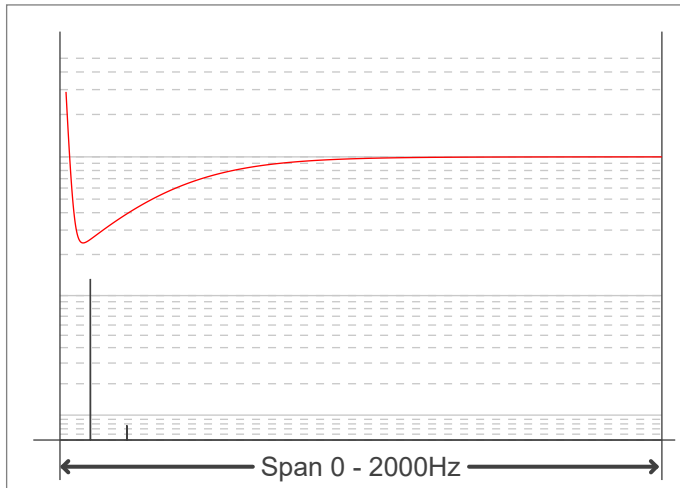


**Flicker Details**

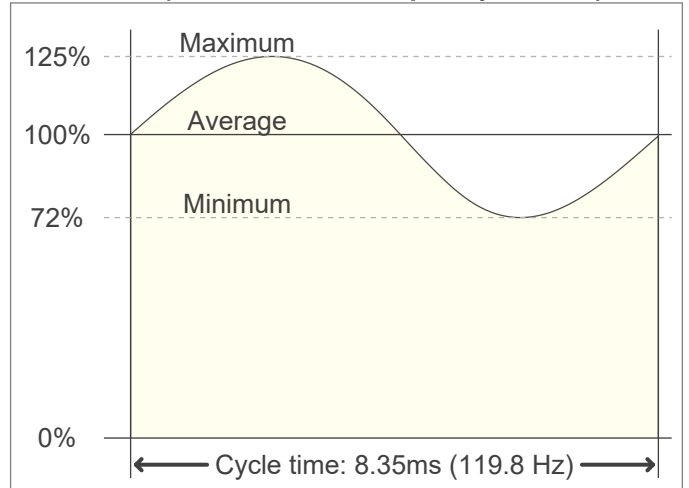
<b>Flicker Meter Type</b>	Viso Systems LabFlicker
<b>Frequency of Input Power</b>	60 Hz
<b>Flicker/TLA Sample Rate</b>	20000 sample/s
<b>Measurement Time</b>	
<b>PstLM</b>	180 sec
<b>All other indices</b>	1.2 sec

<b>Flicker Indices (IES)</b>	
<b>Flicker Percentage</b>	26.82%
<b>Flicker Frequency</b>	119.76 Hz
<b>Flicker Index</b>	0.08
<b>Flicker SVM Value</b>	0.96
<b>Flicker PstLM Value</b>	0.04

**Flicker Frame**



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



**IEEE 1789 Frequency/Modulation Plot**

