



TECHLUME

A U S T R A L I A

LM-79 Test Report

Testing Method:	IES Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products
Relevant Standards:	IES LM-79-08
Test Date and Time:	29/01/2024 12:14:48 PM
Test Location:	Techlume Australia - East Goderich Street Deloraine, TAS 7304
Operator:	Johnny Elmer
Measurement Number:	VFR-240129-0284-MS
Measurement Method:	Far Field, Type C Horizontal
Measurement Distance:	454.0 cm

Equipment Used

System Name:	LabSpion Goniometer
Sensor Name / Model:	Viso LabSensor Model2 / Freedom VIS (Custom Viso)
Spectrometer Range:	360 nm – 830 nm
Calibration Date:	16/12/2023
Flicker Meter Type:	Viso Systems LabFlicker
Manufacturer:	Viso Systems, Denmark

Test Conditions

Ambient Temperature:	25 °C ± 1 °C
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Remarks

The results stated in this report represent the tested sample only. All photometric and colourimetric data has been measured in compliance with IES LM-79-08 standards.

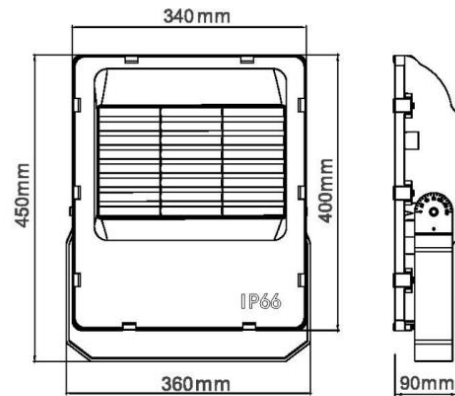


Product Overview

Product Description: LENNOX 120W Floodlight, 4000K, 90x40°, IP66, Black, Non-Dim

Item Number: LC2532

Manufacturer: Decrolux Lighting Pty Ltd



Photometric Measurements

Total Luminous Flux	Luminous Efficacy	Luminous Intensity
18189 lm	152 Lumen/watt	17937 cd

Correlated Colour Temperature, Target	Correlated Colour Temperature, Measured	Colour Rendering Index (CRI)
4000 K	3980 K	Ra 72.9

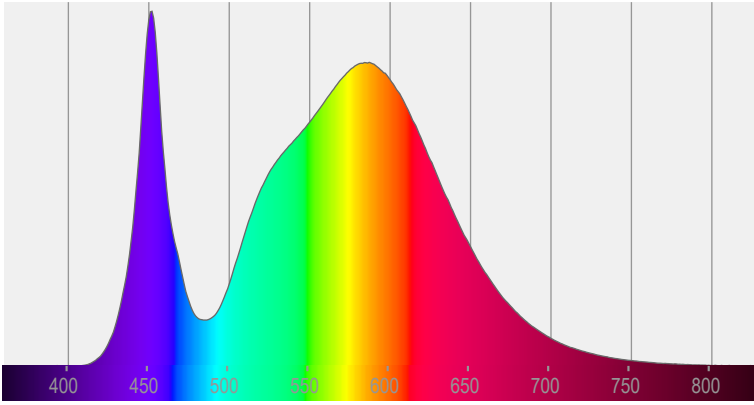
Electrical Measurements

Input Voltage	Input Current	Input Power	Input Voltage Frequency
240 VAC	0.511 A	119.5 W	60 Hz

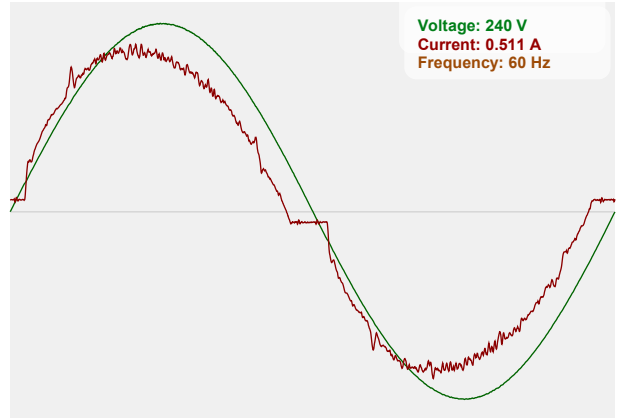
Power Factor	Stabilisation Time	Stabilisation Variation	Hours Operated Prior to Test
0.97	Lamp stabilized in 30 min 3 sec	-1.3%	0 hours



Spectral Power Distribution (SPD)



Input Power Curve

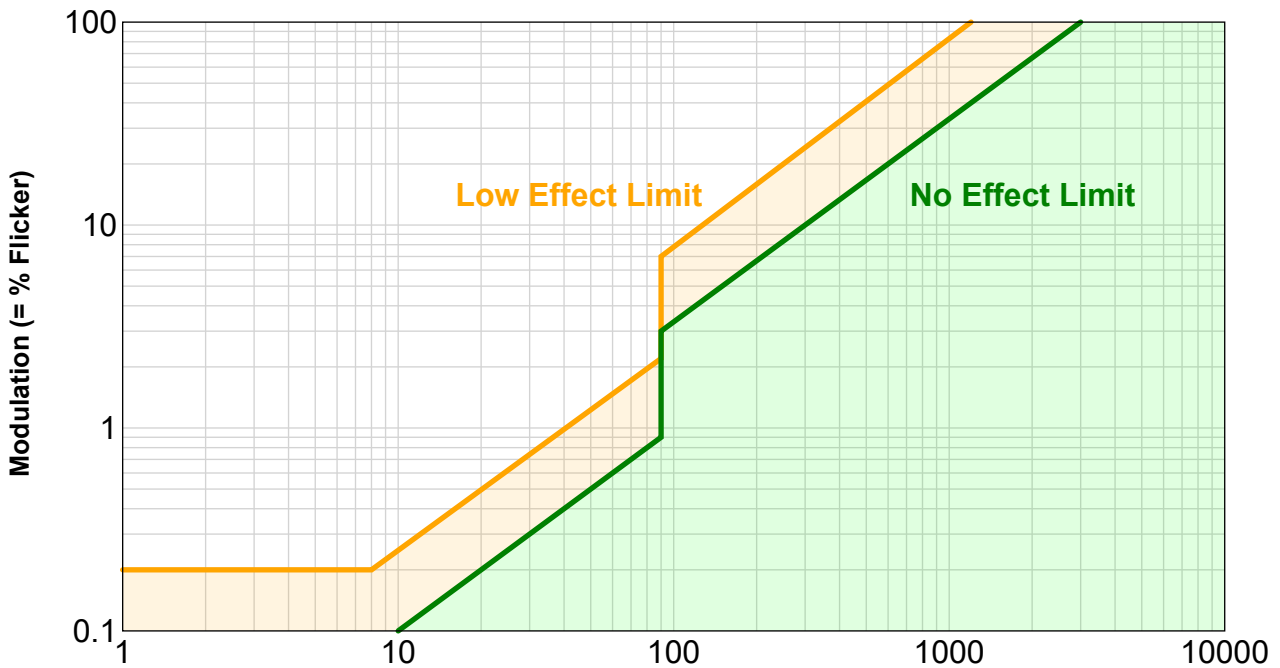


Flicker Details

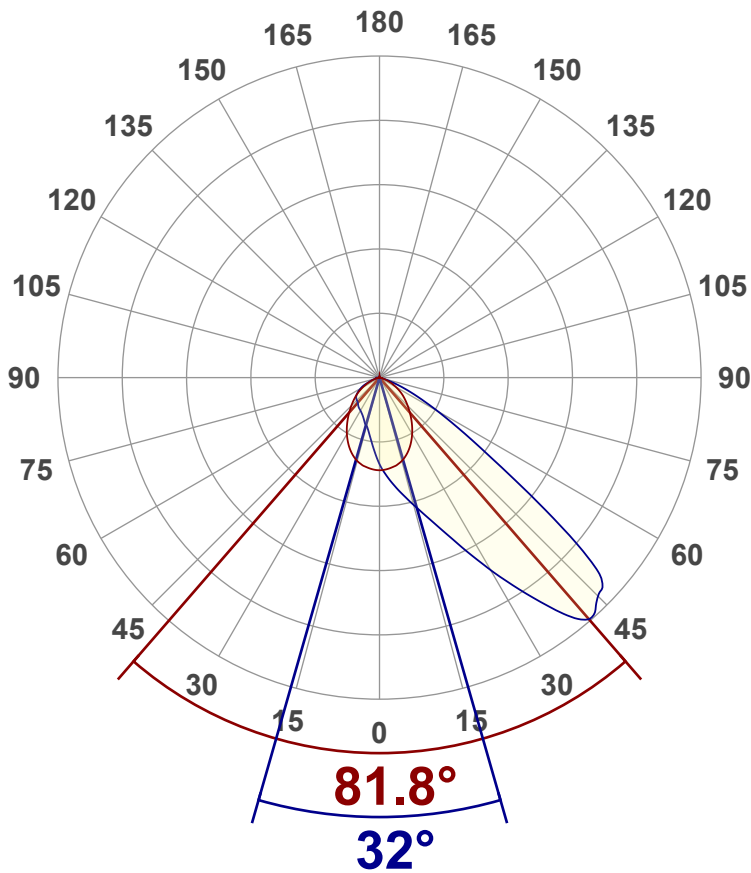
Flicker Sample Rate	Flicker Percentage	Flicker Frequency	Flicker Index
20000 sample/s	0.07%	120.48 Hz	0

Flicker SVM Value	Flicker PstLM Value	Measurement Time (PstLM)	Measurement Time (all other indices)
0	0.01	180 s	1.2 s

IEEE 1789 Frequency/Modulation Plot



Angular Distribution – 0° / 90° Plane



Main Values

Total Lumen Output	18189 lm
Lumen Up%	0.2%
Lumen Down%	99.8%
Peak Intensity	17937 cd
Beam Angle (90%)	32°

Cut-off Angle

Average 2.5%	149.3°
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Field Angle

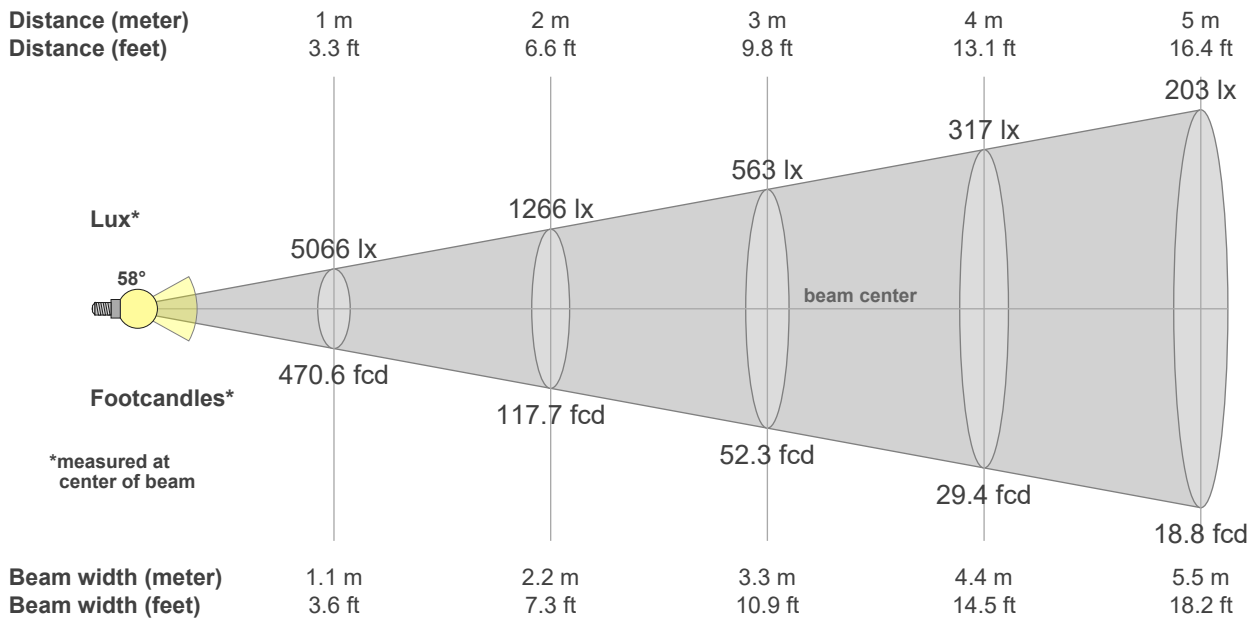
Average 10%	128.2°
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Intensity Ratio

In 120° Cone	88.8%
In 90° Cone	56.1%

C000-C180

C090-C270



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
5066	1266	563	317	203	141	103	79	63	51	42	35	30	26	23	20	18	16	14	13	lux
470.6	117.	52.3	29.4	18.8	13.1	9.6	7.4	5.8	4.7	3.9	3.3	2.8	2.4	2.1	1.8	1.6	1.5	1.3	1.2	fc



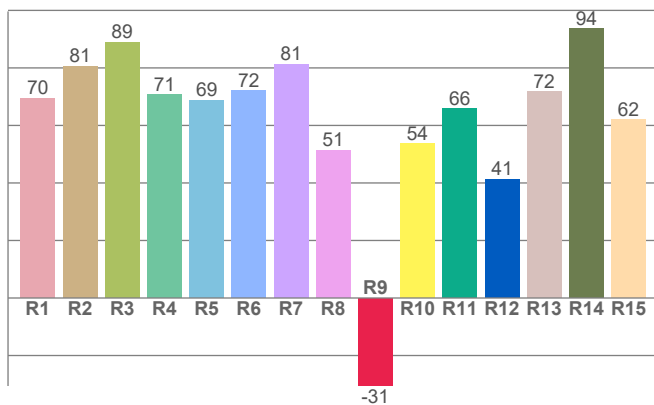
Colour Details

Colour Rendering Index (CRI)	Colour Rendering Index R9 Value	Colour Rendering TM30-18
Ra 72.9	R9 = -30.6	R _f 75.3, R _g 92.7

Colour Quality Scale	Correlated Colour Temperature, Target	Correlated Colour Temperature, Measured
CQS = 72.0	CCT = 4000 K	CCT = 3980 K

MacAdam Steps	Colour Coordinates CIE 1931	Colour Deviation from BBL
SDCM = 1.1	(x;y) = (0.381;0.377)	Duv = 0.0012

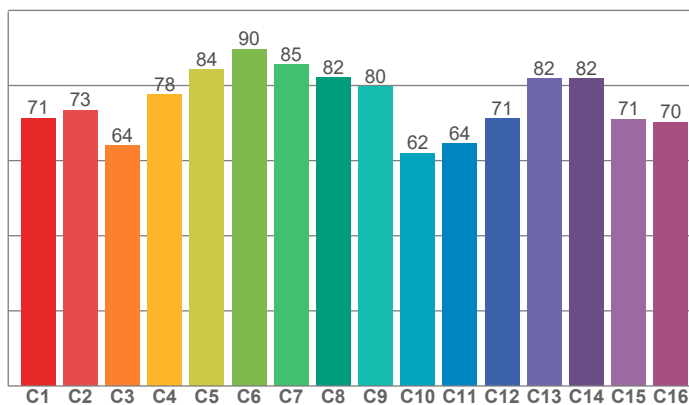
Colour Rendering Index per reference colour (CIE 1995)



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
69.5	80.6	88.9	70.7	68.8	72.0	81.3	51.4	-30.6	53.7	65.9	41.2	71.8	93.7	62.0

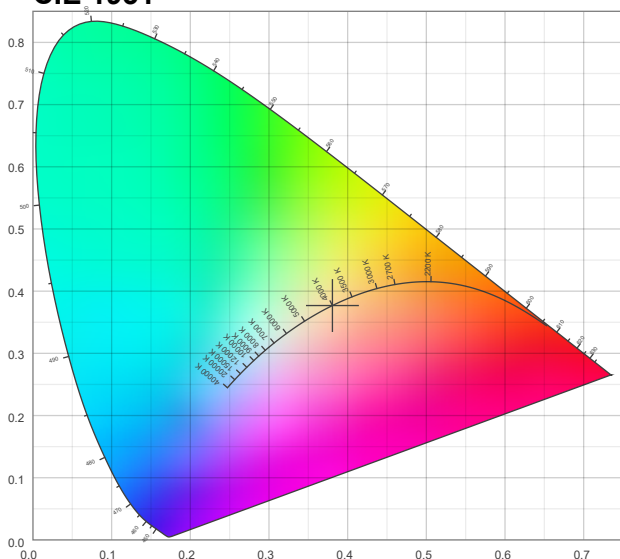
TM30-18 R_f-values per hue bin



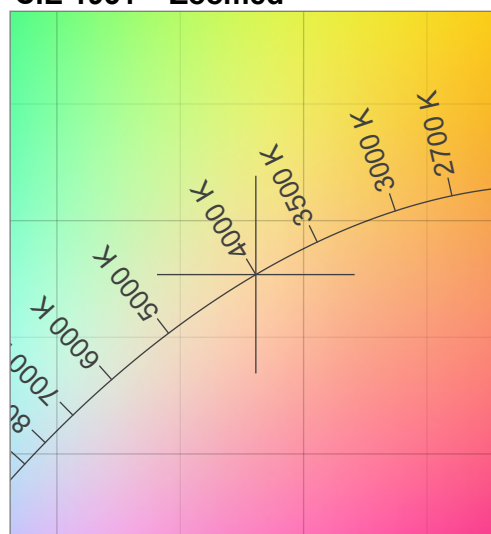
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
71.3	73.4	63.9	77.6	84.2	89.7	85.5	82.1	79.7	62.0	64.5	71.2	81.9	81.9	71.0	70.2

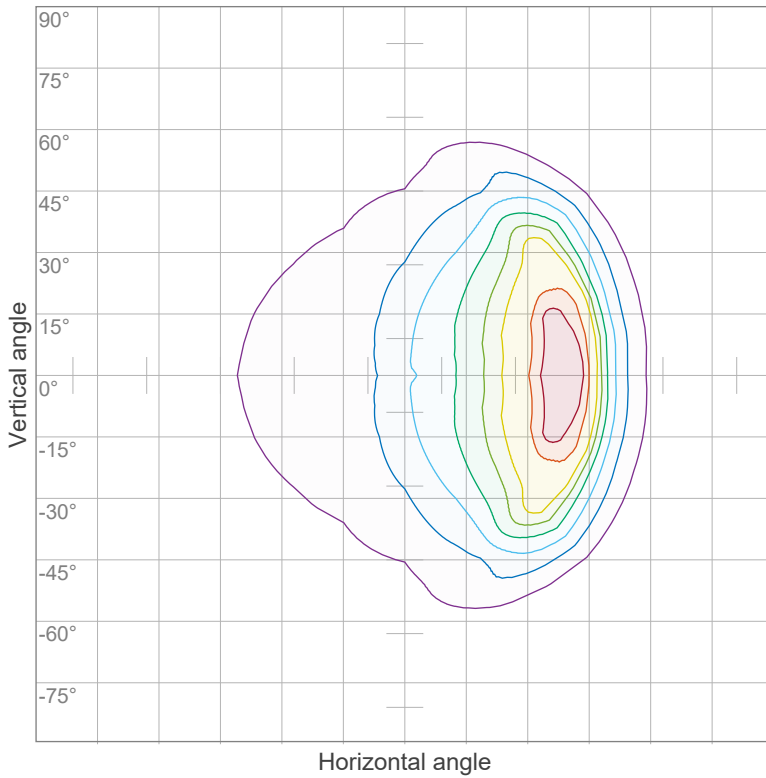
CIE 1931



CIE 1931 – Zoomed



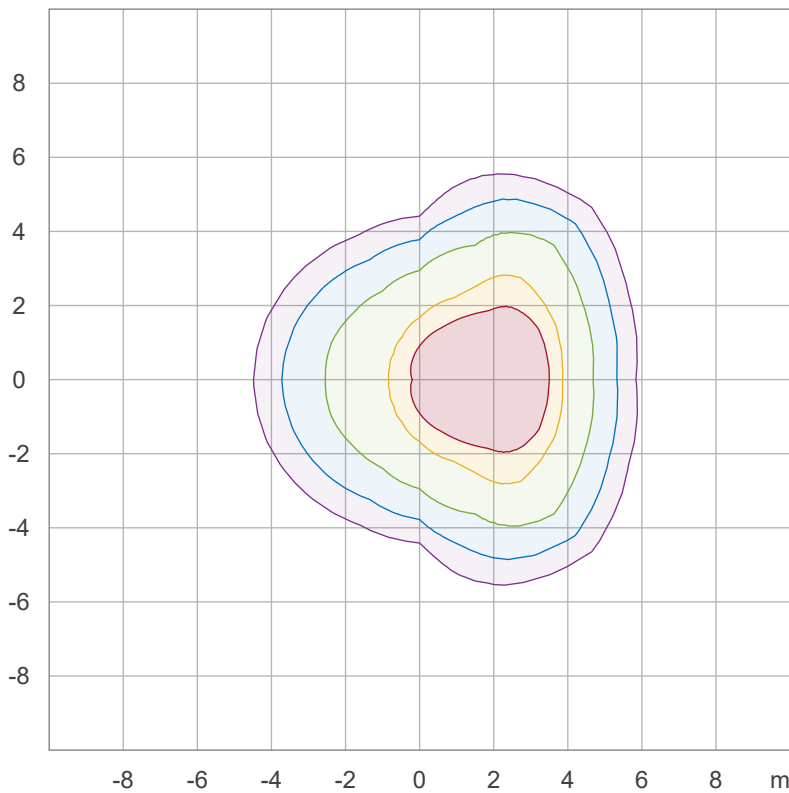
Iso-intensity Diagram (Iso-Candela)



90 %	16141.0 cd
80 %	14347.6 cd
70 %	12554.1 cd
60 %	10760.7 cd
50 %	8967.2 cd
40 %	7173.8 cd
30 %	5380.3 cd
20 %	3586.9 cd
10 %	1793.4 cd

Peak intensity: 17934.5 cd
Number of c-planes: 16

Iso-illuminance Diagram (Iso-lux)



50.0 %	461.5 lx
30.0 %	276.9 lx
10.0 %	92.3 lx
5.0 %	46.1 lx
3.0 %	27.7 lx

Peak illuminance: 922.9 lx
Mounting height: 3.0 m
Number of c-planes: 16



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	119	119	119	119	116	116	116	116	111	111	106	106	106	102	102	100	100	100
1	110	106	102	99	108	104	100	97	100	97	94	96	93	91	92	90	89	87
2	101	93	87	82	98	91	86	81	88	83	79	85	81	77	82	78	75	73
3	92	82	74	68	90	81	73	68	78	71	66	75	70	65	72	68	64	62
4	84	73	64	58	82	71	63	57	69	62	56	66	60	56	64	59	55	53
5	77	64	56	49	75	63	55	49	61	54	48	59	53	48	57	52	47	45
6	71	58	49	42	69	57	48	42	55	47	42	53	47	41	52	46	41	39
7	65	52	43	37	64	51	43	37	49	42	37	48	41	36	47	41	36	34
8	60	47	38	33	59	46	38	32	45	37	32	44	37	32	42	36	32	30
9	56	43	34	29	55	42	34	29	41	34	29	40	33	28	39	33	28	26
10	52	39	31	26	51	39	31	26	38	30	26	37	30	25	36	30	25	24

