

LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P517853

Luminaire Tested: HVL8-1-LD4-3STD-30-UNV-O-EDD-90

Issue Date: 4/27/2021

Tested By:

Approved By:



NVLAP Lab Code: 200050-0

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Test Information

Test Method: LM-79-2019
Report Number: P517853
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-3STD-30-UNV-O-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2374.0 lumens
Efficiency: N/A
Efficacy: 99.3 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

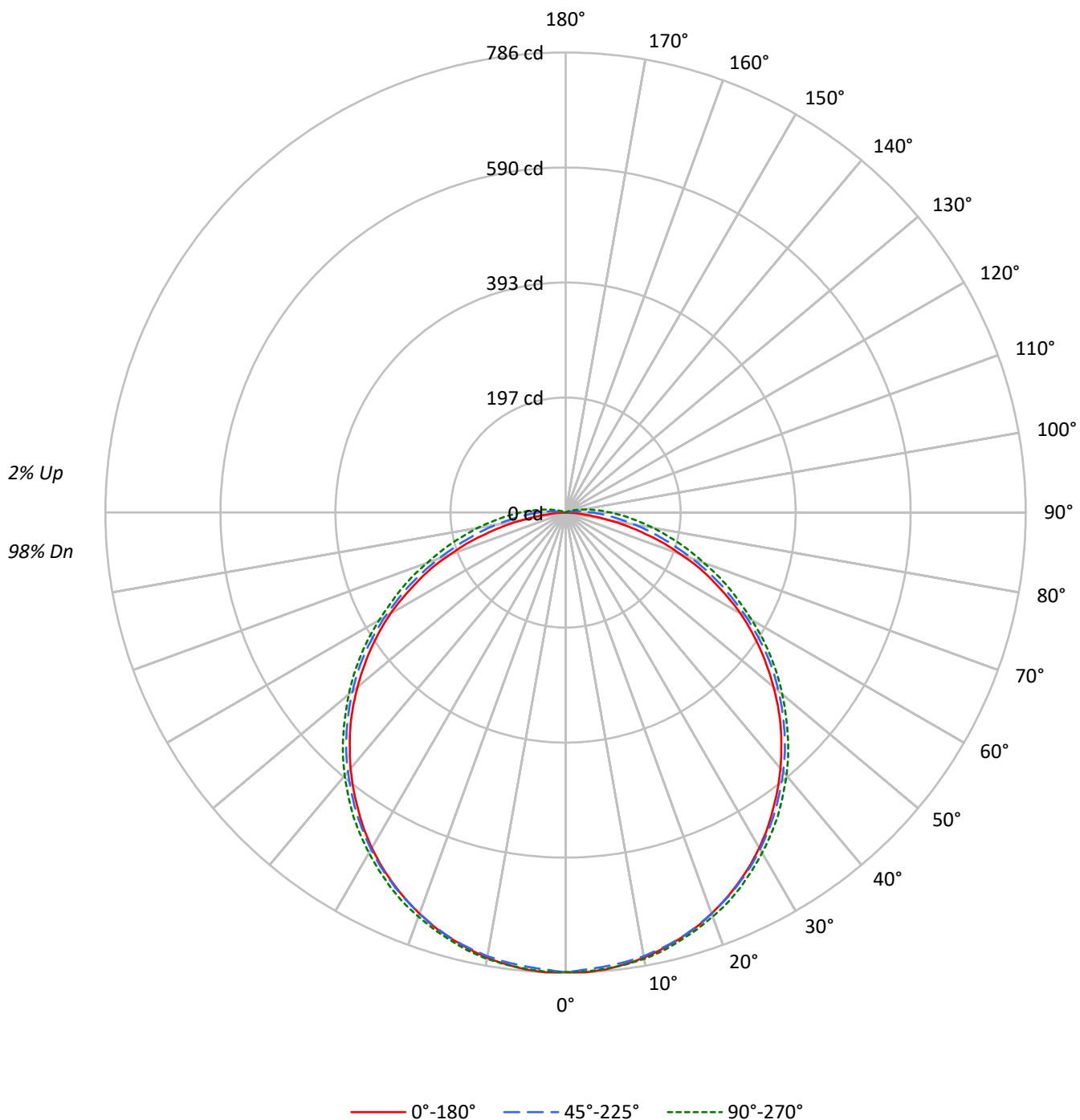
Input Watts (W): 23.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	P3	10/30/2015	4/30/2016
Power Meter	IN0214	1/12/2016	1/12/2017
AC Power Source	IN0062	1/12/2016	1/12/2017
DC Power Supply	--	--	--
Room Thermometer	IN0145	1/13/2016	1/13/2017

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Luminous Intensity Polar Plot



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20					20					20					20
RC	80				70					50					30					10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	110	110	110	105	105	105	101	101	101			98
1	108	102	98	94	105	100	96	92	95	92	89	91	88	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	77	73	79	75	71	76	72	69			67
3	89	78	69	63	86	76	68	62	73	66	61	70	64	59	67	62	58			56
4	81	69	60	53	79	67	59	52	65	57	52	62	56	51	60	54	50			47
5	75	61	52	45	72	60	52	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	40	67	54	46	39	52	45	39	50	44	38	49	43	38			36
7	64	50	41	35	62	49	41	35	47	40	34	46	39	34	44	38	34			32
8	59	46	37	31	58	45	37	31	43	36	31	42	35	30	41	35	30			28
9	55	42	34	28	54	41	33	28	40	33	28	39	32	27	38	32	27			25
10	52	39	31	25	51	38	30	25	37	30	25	36	29	25	35	29	25			23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	12678	12678	12678
5°	12516	12300	12406
10°	12299	11991	12159
15°	12060	11666	11859
20°	11814	11314	11569
25°	11545	10959	11275
30°	11250	10587	10940
35°	10911	10189	10609
40°	10558	9774	10223
45°	10179	9330	9805
50°	9723	8830	9357
55°	9229	8287	8861
60°	8655	7613	8283
65°	7849	6873	7709
70°	6796	6021	7043
75°	5430	5104	6438
80°	3647	4201	5887
85°	1556	3291	5359

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 10179 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	74.3	3.1
10°-20°	213.1	9.0
20°-30°	323.4	13.6
30°-40°	391.0	16.5
40°-50°	408.0	17.2
50°-60°	373.0	15.7
60°-70°	290.8	12.2
70°-80°	181.9	7.7
80°-90°	82.6	3.5
90°-100°	27.7	1.2
100°-110°	7.0	0.3
110°-120°	1.1	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	610.8	25.7
0°-40°	1001.9	42.2
0°-60°	1782.9	75.1
0°-90°	2338.3	98.5
90°-120°	35.8	1.5
90°-150°	35.8	1.5
90°-180°	36.0	1.5
0°-180°	2374.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	785	785	785	785	785	
5°	784	782	778	782	782	74
15°	754	755	753	757	757	213
25°	698	699	700	706	707	322
35°	618	621	624	630	632	387
45°	520	525	529	534	537	401
55°	406	411	418	424	427	363
65°	279	284	294	305	310	276
75°	141	150	172	192	200	151
85°	24	45	78	102	112	31
90°	0	17	46	69	77	1
95°	0	4	24	43	50	0
105°	0	1	4	12	15	0
115°	1	1	1	2	3	0
125°	0	0	0	0	0	0
135°	0	0	0	0	0	0
145°	0	0	0	0	0	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	785.2	785.2	785.2	785.2	785.2
2.5°	786.1	785.0	781.5	785.0	784.8
5°	783.5	782.0	778.5	782.2	782.2
7.5°	778.3	777.8	774.6	778.9	778.9
10°	772.2	772.0	769.4	774.1	774.3
12.5°	763.7	764.4	762.0	766.5	767.0
15°	753.7	755.0	753.0	757.2	757.0
17.5°	742.8	743.5	742.0	746.9	746.7
20°	729.3	730.2	729.1	734.1	734.6
22.5°	714.3	715.6	715.4	720.6	722.1
25°	698.4	698.9	699.7	705.6	706.7
27.5°	680.8	681.7	683.0	688.4	689.5
30°	661.5	663.0	664.5	670.0	671.5
32.5°	641.2	642.7	644.5	651.7	652.5
35°	618.2	621.0	623.6	629.9	632.5
37.5°	595.3	598.8	601.2	607.9	609.9
40°	571.0	574.5	578.4	585.5	586.8
42.5°	545.7	549.7	554.4	560.7	562.9
45°	520.1	524.7	529.0	534.2	536.8
47.5°	492.5	497.2	502.3	508.3	509.9
50°	464.0	469.4	475.0	480.5	483.5
52.5°	434.8	441.3	447.6	453.5	456.3
55°	405.9	410.7	418.3	424.4	427.2
57.5°	375.9	380.0	386.8	396.8	398.3
60°	345.4	349.1	356.1	364.3	367.6
62.5°	311.7	316.7	324.1	334.5	337.4
65°	278.9	283.8	293.6	305.2	310.0
67.5°	247.3	249.0	261.5	273.8	281.5
70°	209.9	216.2	230.8	245.8	251.7
72.5°	177.7	184.0	200.1	217.7	225.1
75°	141.2	149.9	171.8	192.3	199.5
77.5°	109.2	118.8	145.9	166.6	174.9
80°	76.3	91.3	120.7	144.0	153.1
82.5°	47.9	66.4	97.9	122.3	130.3
85°	24.4	45.2	77.6	102.5	111.6
87.5°	6.5	29.2	60.3	84.2	93.5
90°	0.2	16.8	45.7	68.7	77.0
92.5°	0.2	9.4	34.1	54.6	63.1
95°	0.2	4.4	23.7	42.9	49.6
97.5°	0.2	1.9	16.3	32.4	39.1
100°	0.2	0.9	10.4	23.5	29.2
102.5°	0.4	0.6	6.5	16.8	21.5
105°	0.4	0.6	3.9	11.5	15.4
107.5°	0.4	0.6	2.2	7.8	10.6
110°	0.6	0.6	1.3	4.8	7.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.6	0.6	0.7	3.1	4.6
115°	0.6	0.6	0.7	2.0	3.0
117.5°	0.0	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0	0.0
122.5°	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0
127.5°	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0
132.5°	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0
137.5°	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)