

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: P517823

Luminaire Tested: HVL8-1-LD4-3HI-35-UNV-C-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: P517823
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-3HI-35-UNV-C-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2963.0 lumens
Efficiency: N/A
Efficacy: 94.1 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

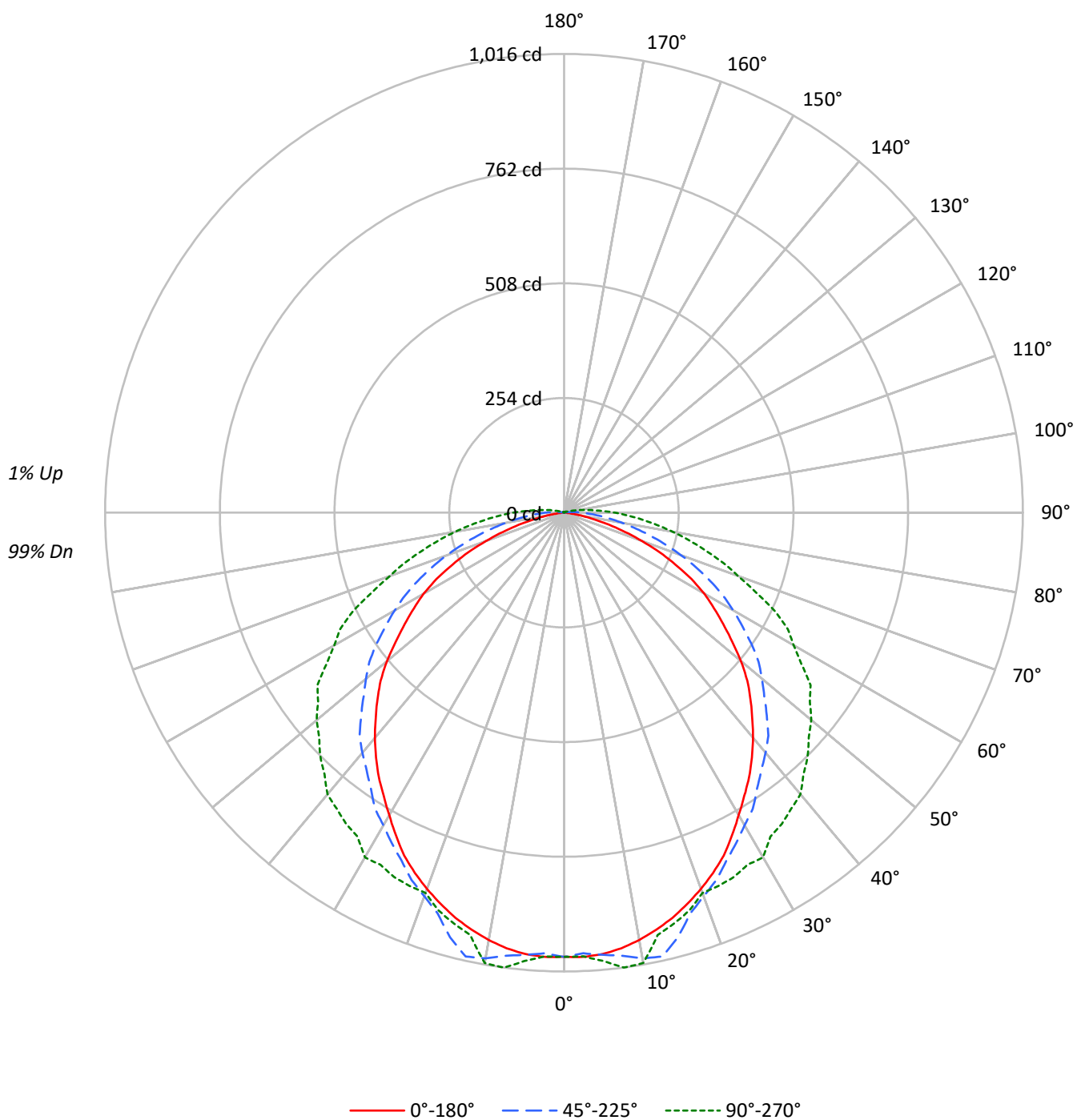
Input Watts (W): 31.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		101
1	108	103	98	94	105	100	96	92	96	92	89		91	89	86		87
2	98	89	82	76	95	87	80	75	83	78	73		80	75	71		76
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		67
4	81	69	60	53	79	67	59	52	65	57	51		62	56	51		60
5	75	61	52	45	72	60	51	45	58	50	44		56	49	44		54
6	69	55	46	39	67	54	46	39	52	45	39		50	44	38		49
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		44
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		41
9	55	42	34	28	54	41	33	28	40	33	28		39	32	27		38
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		35

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	15881	15881	15881
5°	15674	15525	15803
10°	15301	15619	15900
15°	14860	15085	14759
20°	14362	14028	14114
25°	13847	13321	14203
30°	13156	12737	14359
35°	12615	12181	14105
40°	12041	11738	14193
45°	11430	11197	13937
50°	10723	10633	13831
55°	9781	10035	13823
60°	8985	9257	13231
65°	7663	8353	12810
70°	5954	7229	11487
75°	3961	5912	10488
80°	1983	4602	9413
85°	587	3287	8293

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 13937 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	94.5	3.2
10°-20°	269.2	9.1
20°-30°	400.5	13.5
30°-40°	481.4	16.2
40°-50°	506.8	17.1
50°-60°	470.2	15.9
60°-70°	371.8	12.5
70°-80°	227.1	7.7
80°-90°	98.9	3.3
90°-100°	30.8	1.0
100°-110°	6.9	0.2
110°-120°	2.8	0.1
120°-130°	1.6	0.1
130°-140°	0.4	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°	764.3	25.8
0°-40°	1245.7	42.0
0°-60°	2222.7	75.0
0°-90°	2920.5	98.6
90°-120°	40.5	1.4
90°-150°	42.5	1.4
90°-180°	42.0	1.4
0°-180°	2963.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	984	984	984	984	984	
5°	981	979	983	994	996	93
15°	929	964	974	942	942	262
25°	838	891	850	876	890	385
35°	715	734	746	813	841	447
45°	584	587	635	736	763	450
55°	430	437	506	617	666	387
65°	272	281	357	472	515	270
75°	103	136	199	306	325	112
85°	9	32	78	150	173	14
90°	0	10	41	95	112	0
95°	0	2	18	52	64	0
105°	0	1	4	10	14	0
115°	0	1	3	5	5	0
125°	0	0	1	3	4	0
135°	0	0	0	1	1	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°	983.6	983.6	983.6	983.6	983.6
2.5°	984.8	982.2	976.7	982.0	983.4
5°	981.2	979.1	982.6	993.6	996.4
7.5°	972.9	980.5	989.6	1009.6	1016.0
10°	960.7	975.1	1002.2	1019.2	1012.6
12.5°	945.9	970.3	1006.6	973.3	957.9
15°	928.7	964.3	973.7	941.5	942.1
17.5°	908.4	959.3	930.3	929.5	923.6
20°	886.6	942.5	904.0	902.4	896.2
22.5°	863.1	920.2	880.8	877.6	894.4
25°	837.7	891.2	850.5	876.0	890.2
27.5°	805.8	853.1	825.3	861.3	879.2
30°	773.6	813.9	799.4	849.7	881.4
32.5°	743.3	772.8	778.2	845.3	850.5
35°	714.7	734.5	745.5	813.3	840.9
37.5°	683.2	688.6	717.9	799.8	826.5
40°	651.2	647.8	694.6	777.8	814.7
42.5°	616.7	615.5	670.0	766.8	785.2
45°	584.0	586.6	634.9	735.5	763.0
47.5°	550.6	554.0	601.7	701.3	735.3
50°	511.7	516.1	572.0	670.8	714.7
52.5°	469.6	478.1	543.2	641.9	686.2
55°	430.2	437.2	506.5	617.3	666.4
57.5°	394.1	398.3	468.6	586.2	623.3
60°	358.6	359.6	433.0	551.8	587.2
62.5°	318.0	319.8	396.3	511.1	558.6
65°	272.3	280.9	356.8	472.2	515.1
67.5°	229.6	244.6	316.6	436.6	459.0
70°	183.9	209.4	277.1	394.7	410.5
72.5°	142.1	171.9	236.6	347.8	370.1
75°	103.0	136.4	199.0	305.7	325.0
77.5°	69.3	103.4	163.7	259.3	284.7
80°	41.5	75.5	132.2	216.2	244.8
82.5°	21.2	50.7	102.6	181.3	207.0
85°	9.2	32.1	77.5	150.5	172.7
87.5°	2.6	18.2	57.1	121.6	140.5
90°	0.2	9.6	40.7	95.4	112.4
92.5°	0.2	4.6	28.7	72.1	85.2
95°	0.2	2.4	17.8	52.3	63.9
97.5°	0.2	1.4	10.8	37.1	46.9
100°	0.2	1.2	6.4	24.6	33.5
102.5°	0.2	1.4	4.4	15.6	21.8
105°	0.2	1.4	3.6	10.2	14.4
107.5°	0.4	1.4	3.2	7.6	10.0
110°	0.2	1.2	3.4	5.8	7.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.4	1.0	3.2	4.8	5.8
115°	0.2	0.8	2.8	4.6	4.8
117.5°	0.4	0.6	2.2	4.6	4.8
120°	0.4	0.4	1.8	4.4	5.0
122.5°	0.4	0.4	1.4	4.0	4.8
125°	0.2	0.4	1.2	3.0	4.2
127.5°	0.4	0.4	1.0	2.4	3.2
130°	0.4	0.4	0.8	1.8	2.4
132.5°	0.4	0.4	0.6	1.4	1.8
135°	0.4	0.4	0.4	1.0	1.4
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)