

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: P517840

Luminaire Tested: HVL8-1-LD4-3LO-35-UNV-C-EDD

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: P517840
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-3LO-35-UNV-C-EDD
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2136.0 lumens
Efficiency: N/A
Efficacy: 127.1 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

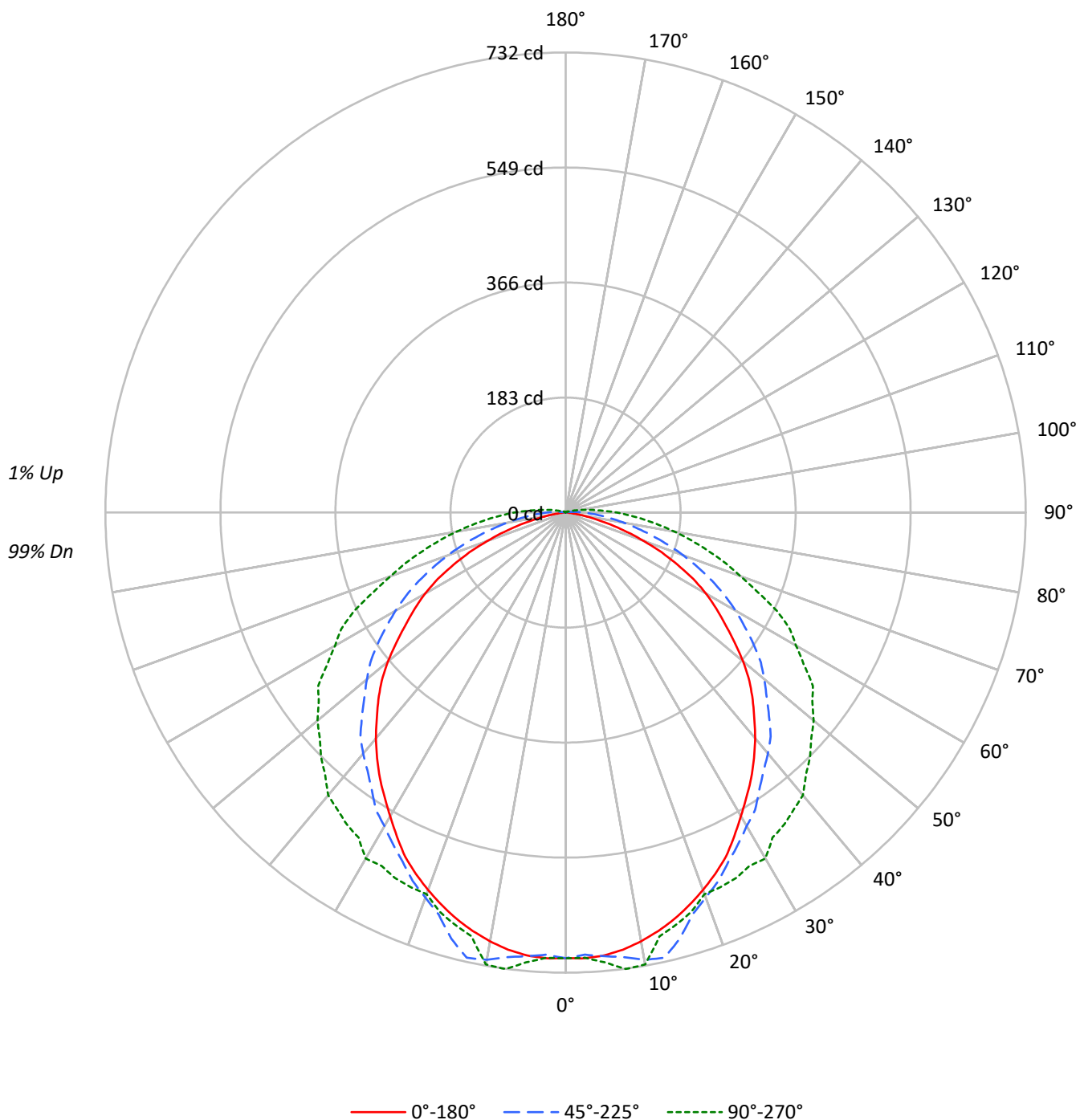
Input Watts (W): 16.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			99
1	108	103	98	94	105	100	96	92	96	92	89	91	89	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	78	73	80	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	51	62	56	51	60	54	50			47
5	75	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	39	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°	11447	11447	11447
5°	11299	11191	11393
10°	11031	11260	11463
15°	10712	10875	10639
20°	10353	10113	10175
25°	9983	9603	10238
30°	9485	9182	10352
35°	9093	8781	10168
40°	8679	8463	10232
45°	8239	8072	10046
50°	7730	7666	9970
55°	7051	7233	9965
60°	6477	6673	9538
65°	5525	6021	9234
70°	4293	5212	8280
75°	2854	4260	7561
80°	1429	3317	6787
85°	421	2371	5978

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 10046 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	68.1	3.2
10°-20°	194.1	9.1
20°-30°	288.7	13.5
30°-40°	347.1	16.2
40°-50°	365.3	17.1
50°-60°	339.0	15.9
60°-70°	268.0	12.5
70°-80°	163.7	7.7
80°-90°	71.3	3.3
90°-100°	22.2	1.0
100°-110°	5.0	0.2
110°-120°	2.0	0.1
120°-130°	1.1	0.1
130°-140°	0.3	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°	551.0	25.8
0°-40°	898.0	42.0
0°-60°	1602.3	75.0
0°-90°	2105.4	98.6
90°-120°	29.2	1.4
90°-150°	30.6	1.4
90°-180°	31.0	1.5
0°-180°	2136.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	709	709	709	709	709	
5°	707	706	708	716	718	67
15°	670	695	702	679	679	189
25°	604	642	613	632	642	277
35°	515	530	537	586	606	322
45°	421	423	458	530	550	325
55°	310	315	365	445	480	279
65°	196	202	257	340	371	194
75°	74	98	143	220	234	81
85°	7	23	56	108	124	10
90°	0	7	29	69	81	0
95°	0	2	13	38	46	0
105°	0	1	3	7	10	0
115°	0	1	2	3	4	0
125°	0	0	1	2	3	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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CATALOG NUMBER: HVL8-1-LD4-3LO-35-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	709.0	709.0	709.0	709.0	709.0
2.5°	709.9	708.0	704.1	707.9	708.9
5°	707.3	705.9	708.3	716.3	718.3
7.5°	701.4	706.9	713.4	727.8	732.4
10°	692.6	703.0	722.5	734.7	730.0
12.5°	681.9	699.5	725.6	701.7	690.5
15°	669.5	695.2	702.0	678.7	679.1
17.5°	654.9	691.6	670.6	670.0	665.8
20°	639.1	679.4	651.7	650.5	646.1
22.5°	622.2	663.4	634.9	632.6	644.8
25°	603.9	642.5	613.1	631.5	641.7
27.5°	580.9	615.0	594.9	620.9	633.8
30°	557.7	586.7	576.3	612.6	635.4
32.5°	535.9	557.1	561.0	609.4	613.1
35°	515.2	529.5	537.4	586.3	606.2
37.5°	492.5	496.4	517.5	576.6	595.8
40°	469.4	467.0	500.8	560.7	587.3
42.5°	444.6	443.7	483.0	552.8	566.0
45°	421.0	422.9	457.7	530.2	550.0
47.5°	396.9	399.4	433.7	505.5	530.1
50°	368.9	372.1	412.4	483.6	515.2
52.5°	338.6	344.6	391.6	462.8	494.7
55°	310.1	315.2	365.1	445.0	480.4
57.5°	284.1	287.1	337.8	422.6	449.3
60°	258.5	259.3	312.1	397.8	423.3
62.5°	229.2	230.5	285.7	368.5	402.7
65°	196.3	202.5	257.2	340.4	371.3
67.5°	165.5	176.4	228.2	314.7	330.9
70°	132.6	150.9	199.8	284.5	295.9
72.5°	102.4	123.9	170.6	250.7	266.8
75°	74.2	98.4	143.4	220.4	234.3
77.5°	50.0	74.5	118.0	186.9	205.2
80°	29.9	54.5	95.3	155.8	176.5
82.5°	15.3	36.5	74.0	130.7	149.2
85°	6.6	23.1	55.9	108.5	124.5
87.5°	1.9	13.1	41.2	87.7	101.2
90°	0.1	6.9	29.3	68.8	81.0
92.5°	0.1	3.3	20.7	52.0	61.4
95°	0.1	1.7	12.9	37.7	46.1
97.5°	0.1	1.0	7.8	26.7	33.8
100°	0.1	0.9	4.6	17.8	24.1
102.5°	0.1	1.0	3.2	11.3	15.7
105°	0.1	1.0	2.6	7.4	10.4
107.5°	0.3	1.0	2.3	5.5	7.2
110°	0.1	0.9	2.5	4.2	5.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.7	2.3	3.5	4.2
115°	0.1	0.6	2.0	3.3	3.5
117.5°	0.3	0.4	1.6	3.3	3.5
120°	0.3	0.3	1.3	3.2	3.6
122.5°	0.3	0.3	1.0	2.9	3.5
125°	0.1	0.3	0.9	2.2	3.0
127.5°	0.3	0.3	0.7	1.7	2.3
130°	0.3	0.3	0.6	1.3	1.7
132.5°	0.3	0.3	0.4	1.0	1.3
135°	0.3	0.3	0.3	0.7	1.0
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)