

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: P517781

Luminaire Tested: HVL8-1-LD4-2HI-40-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: P517781
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-2HI-40-UNV-O-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1726.0 lumens
Efficiency: N/A
Efficacy: 80.3 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

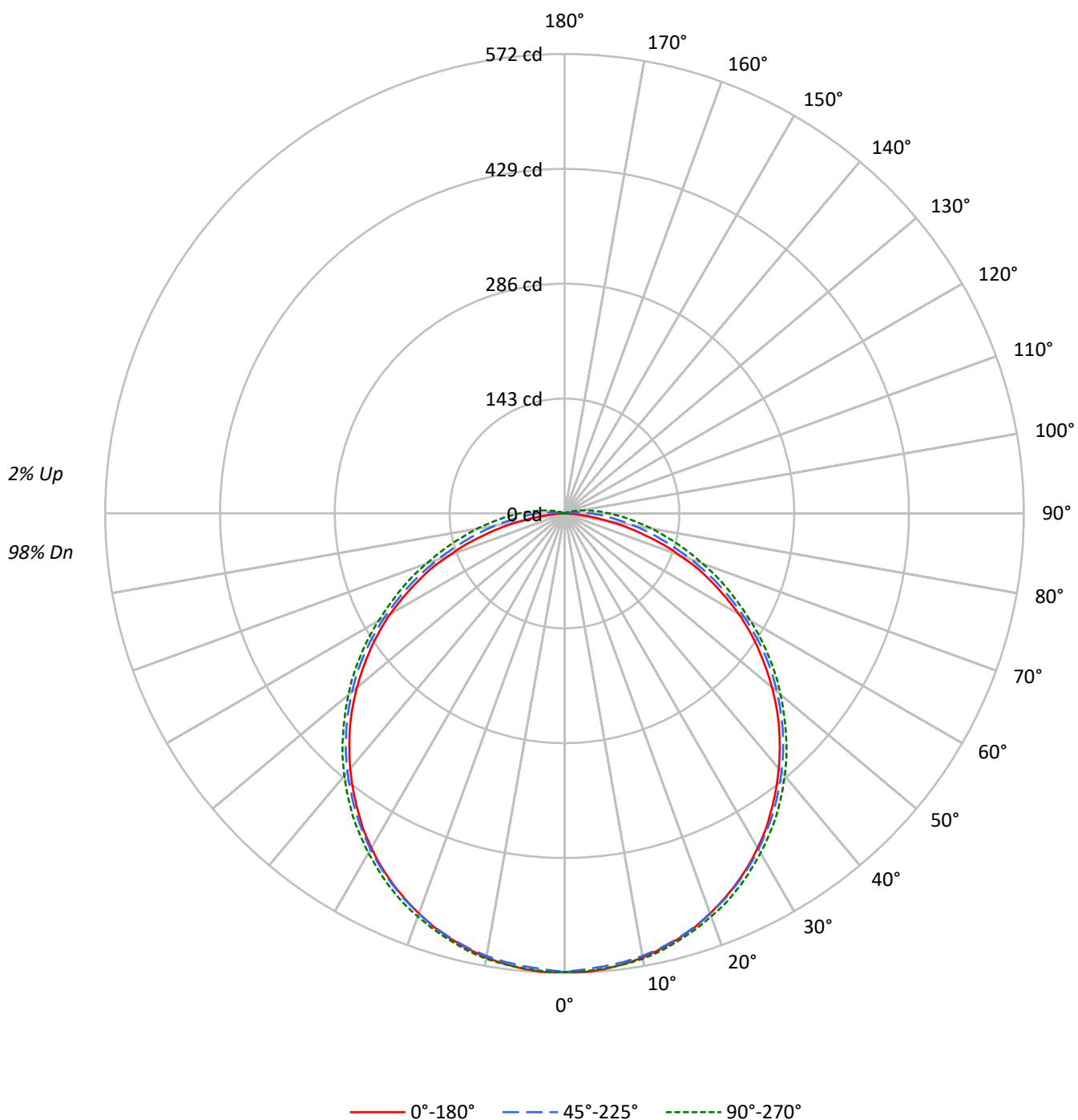
Input Watts (W): 21.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	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°	9218	9218	9218
5°	9099	8943	9020
10°	8941	8718	8839
15°	8768	8480	8622
20°	8589	8226	8411
25°	8392	7968	8198
30°	8180	7697	7954
35°	7934	7408	7713
40°	7677	7106	7432
45°	7400	6783	7129
50°	7070	6419	6802
55°	6710	6025	6443
60°	6292	5535	6023
65°	5707	4996	5605
70°	4941	4377	5121
75°	3950	3711	4682
80°	2648	3053	4280
85°	1135	2392	3894

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 7400 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	54.0	3.1
10°-20°	155.0	9.0
20°-30°	235.1	13.6
30°-40°	284.3	16.5
40°-50°	296.6	17.2
50°-60°	271.2	15.7
60°-70°	211.4	12.2
70°-80°	132.3	7.7
80°-90°	60.1	3.5
90°-100°	20.1	1.2
100°-110°	5.1	0.3
110°-120°	0.8	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°	444.1	25.7
0°-40°	728.4	42.2
0°-60°	1296.3	75.1
0°-90°	1700.0	98.5
90°-120°	26.0	1.5
90°-150°	26.0	1.5
90°-180°	26.0	1.5
0°-180°	1726.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	571	571	571	571	571	
5°	570	569	566	569	569	54
15°	548	549	547	550	550	155
25°	508	508	509	513	514	234
35°	450	452	453	458	460	281
45°	378	382	385	388	390	291
55°	295	299	304	309	311	264
65°	203	206	213	222	225	201
75°	103	109	125	140	145	109
85°	18	33	56	75	81	22
90°	0	12	33	50	56	1
95°	0	3	17	31	36	0
105°	0	0	3	8	11	0
115°	0	0	0	2	2	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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CATALOG NUMBER: HVL8-1-LD4-2HI-40-UNV-O-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	570.9	570.9	570.9	570.9	570.9
2.5°	571.5	570.7	568.2	570.7	570.6
5°	569.6	568.6	566.0	568.7	568.7
7.5°	565.9	565.5	563.2	566.3	566.3
10°	561.4	561.3	559.4	562.8	562.9
12.5°	555.2	555.8	554.0	557.3	557.7
15°	548.0	548.9	547.4	550.5	550.4
17.5°	540.0	540.6	539.5	543.0	542.9
20°	530.2	530.9	530.1	533.7	534.1
22.5°	519.3	520.3	520.1	523.9	525.0
25°	507.7	508.1	508.7	513.0	513.8
27.5°	495.0	495.6	496.6	500.5	501.3
30°	481.0	482.0	483.1	487.2	488.2
32.5°	466.2	467.2	468.6	473.8	474.4
35°	449.5	451.5	453.4	458.0	459.8
37.5°	432.8	435.3	437.1	441.9	443.4
40°	415.2	417.7	420.5	425.7	426.6
42.5°	396.7	399.7	403.0	407.6	409.2
45°	378.1	381.5	384.6	388.4	390.3
47.5°	358.1	361.5	365.2	369.5	370.7
50°	337.4	341.3	345.3	349.4	351.5
52.5°	316.1	320.8	325.4	329.7	331.7
55°	295.1	298.6	304.1	308.6	310.6
57.5°	273.3	276.3	281.3	288.5	289.6
60°	251.1	253.8	258.9	264.8	267.3
62.5°	226.6	230.3	235.6	243.2	245.3
65°	202.8	206.3	213.4	221.9	225.4
67.5°	179.8	181.0	190.2	199.0	204.7
70°	152.6	157.2	167.8	178.7	183.0
72.5°	129.2	133.8	145.5	158.3	163.6
75°	102.7	109.0	124.9	139.8	145.1
77.5°	79.4	86.4	106.0	121.1	127.2
80°	55.4	66.3	87.7	104.7	111.3
82.5°	34.9	48.3	71.2	89.0	94.7
85°	17.8	32.8	56.4	74.6	81.1
87.5°	4.7	21.3	43.9	61.2	68.0
90°	0.1	12.2	33.2	49.9	56.0
92.5°	0.1	6.9	24.8	39.7	45.9
95°	0.1	3.2	17.2	31.2	36.1
97.5°	0.1	1.3	11.8	23.6	28.4
100°	0.1	0.7	7.5	17.1	21.3
102.5°	0.3	0.4	4.7	12.2	15.6
105°	0.3	0.4	2.8	8.3	11.2
107.5°	0.3	0.4	1.6	5.7	7.7
110°	0.4	0.4	0.9	3.5	5.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.4	0.4	0.5	2.3	3.4
115°	0.4	0.4	0.5	1.5	2.2
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)