

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: P518161

Luminaire Tested: HVL8-8-LD4-1HI-35-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: P518161
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-8-LD4-1HI-35-UNV-O-EDD-90
Description: 8 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8565.0 lumens
Efficiency: N/A
Efficacy: 99.6 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 8' x H: 0.17')
CIE Type: Direct

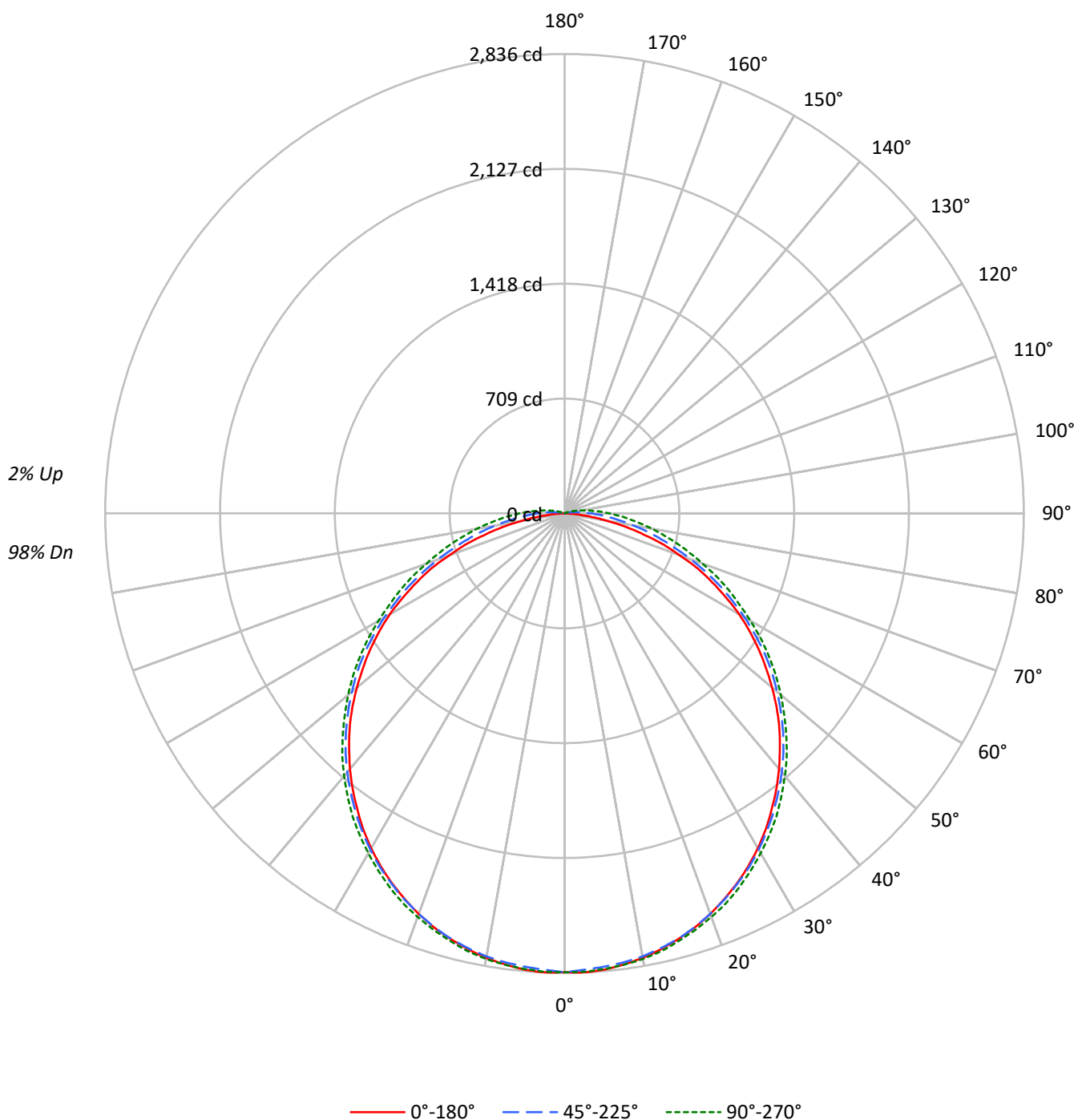
Input Watts (W): 86
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	5717	5717	5717
5°	5717	5596	5595
10°	5689	5503	5483
15°	5650	5399	5349
20°	5608	5281	5218
25°	5557	5160	5085
30°	5496	5031	4934
35°	5416	4888	4784
40°	5334	4737	4610
45°	5247	4572	4422
50°	5129	4380	4219
55°	5004	4170	3996
60°	4855	3894	3735
65°	4601	3585	3477
70°	4227	3219	3177
75°	3686	2818	2904
80°	2859	2426	2655
85°	1648	2031	2417

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 5247 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	268.1	3.1
10°-20°	768.9	9.0
20°-30°	1166.7	13.6
30°-40°	1410.8	16.5
40°-50°	1472.0	17.2
50°-60°	1345.9	15.7
60°-70°	1049.2	12.2
70°-80°	656.3	7.7
80°-90°	298.1	3.5
90°-100°	99.9	1.2
100°-110°	25.1	0.3
110°-120°	4.0	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°	2203.7	25.7
0°-40°	3614.5	42.2
0°-60°	6432.5	75.1
0°-90°	8436.0	98.5
90°-120°	129.0	1.5
90°-150°	129.0	1.5
90°-180°	129.0	1.5
0°-180°	8565.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2833	2833	2833	2833	2833	
5°	2827	2821	2809	2822	2822	268
15°	2719	2724	2717	2732	2731	768
25°	2520	2522	2524	2546	2550	1161
35°	2230	2240	2250	2272	2282	1396
45°	1876	1893	1909	1927	1937	1446
55°	1464	1482	1509	1531	1541	1308
65°	1006	1024	1059	1101	1119	996
75°	510	541	620	694	720	543
85°	88	163	280	370	403	112
90°	1	61	165	248	278	3
95°	1	16	86	155	179	1
105°	1	2	14	41	55	1
115°	2	2	3	7	11	1
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°	2832.8	2832.8	2832.8	2832.8	2832.8
2.5°	2836.1	2832.1	2819.4	2832.1	2831.4
5°	2826.8	2821.4	2808.7	2822.1	2822.1
7.5°	2808.1	2806.1	2794.7	2810.1	2810.1
10°	2786.0	2785.4	2776.0	2792.7	2793.4
12.5°	2755.3	2758.0	2749.3	2765.3	2767.3
15°	2719.3	2723.9	2716.6	2731.9	2731.3
17.5°	2679.9	2682.5	2677.2	2694.6	2693.9
20°	2631.1	2634.4	2630.4	2648.5	2650.5
22.5°	2577.0	2581.7	2581.0	2599.7	2605.1
25°	2519.6	2521.6	2524.3	2545.6	2549.6
27.5°	2456.1	2459.5	2464.2	2483.5	2487.5
30°	2386.7	2392.0	2397.4	2417.4	2422.8
32.5°	2313.2	2318.6	2325.3	2351.3	2354.0
35°	2230.4	2240.5	2249.8	2272.5	2281.9
37.5°	2147.6	2160.3	2169.0	2193.0	2200.4
40°	2060.1	2072.8	2086.9	2112.2	2116.9
42.5°	1968.7	1983.3	2000.0	2022.7	2030.8
45°	1876.5	1893.2	1908.6	1927.3	1936.6
47.5°	1777.0	1793.7	1812.4	1833.8	1839.8
50°	1674.2	1693.5	1713.6	1733.6	1744.3
52.5°	1568.6	1592.0	1614.7	1636.1	1646.1
55°	1464.5	1481.8	1509.2	1531.3	1541.3
57.5°	1356.3	1371.0	1395.7	1431.8	1437.1
60°	1246.1	1259.5	1284.8	1314.2	1326.2
62.5°	1124.6	1142.6	1169.3	1206.7	1217.4
65°	1006.4	1023.7	1059.1	1101.2	1118.6
67.5°	892.2	898.2	943.6	987.7	1015.7
70°	757.3	780.0	832.7	886.8	908.2
72.5°	641.1	663.8	721.9	785.3	812.0
75°	509.5	540.9	619.7	693.8	719.9
77.5°	394.0	428.7	526.2	601.0	631.1
80°	275.1	329.2	435.4	519.5	552.3
82.5°	173.0	239.7	353.3	441.4	470.1
85°	88.1	162.9	279.8	370.0	402.7
87.5°	23.4	105.5	217.7	303.8	337.2
90°	0.7	60.8	164.9	247.8	277.8
92.5°	0.7	34.1	122.9	197.0	227.7
95°	0.7	16.0	85.5	154.9	179.0
97.5°	0.7	6.7	58.8	116.9	140.9
100°	0.7	3.3	37.4	84.8	105.5
102.5°	1.3	2.0	23.4	60.8	77.5
105°	1.3	2.0	14.0	41.4	55.4
107.5°	1.3	2.0	8.0	28.0	38.1
110°	2.0	2.0	4.7	17.4	25.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.0	2.0	2.7	11.4	16.7
115°	2.0	2.0	2.7	7.3	10.7
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)