

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: P518146

Luminaire Tested: HVL8-4-LD4-3STD-35-UNV-O-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: P518146
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-3STD-35-UNV-O-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8340.0 lumens
Efficiency: N/A
Efficacy: 87.3 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

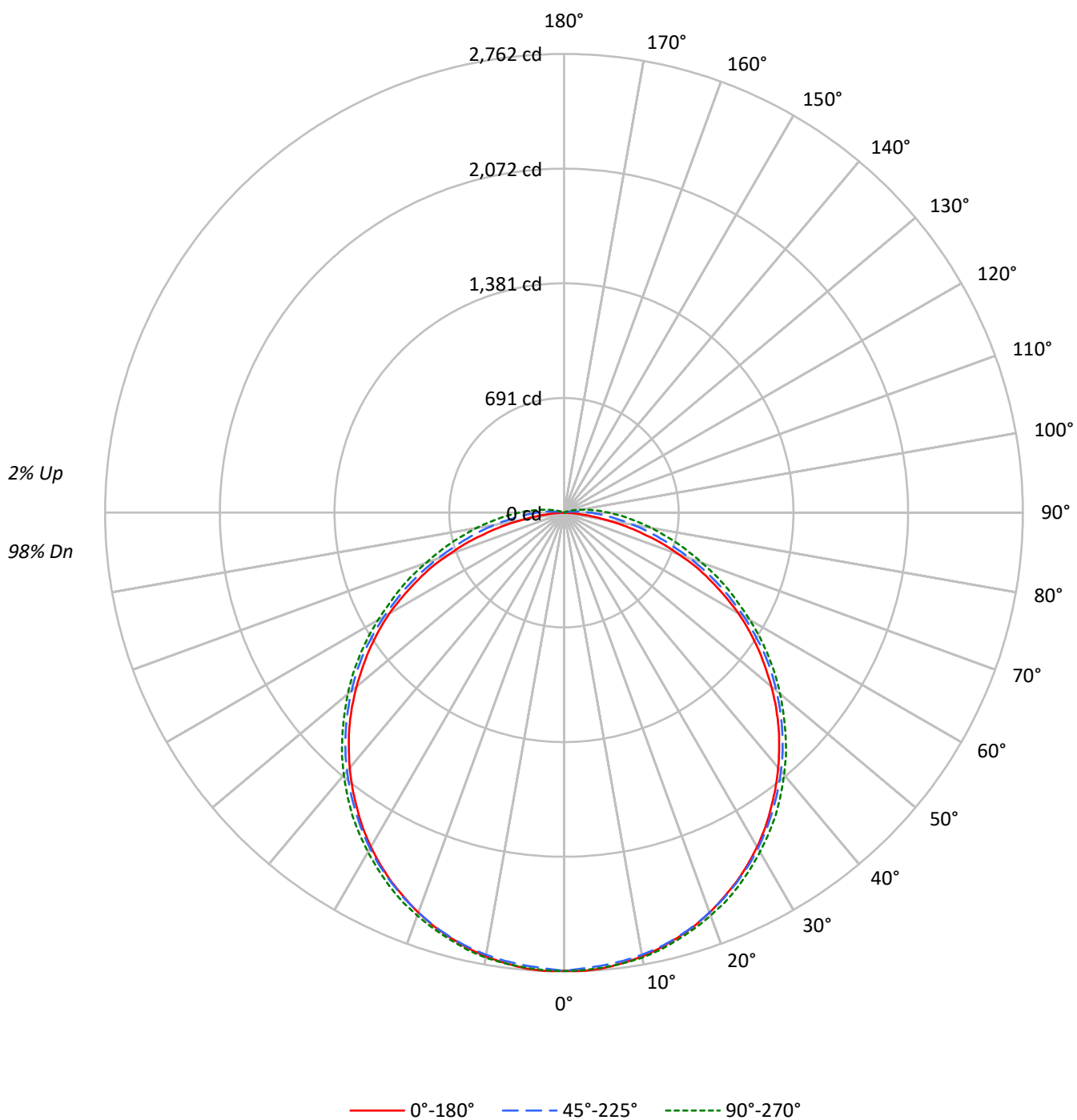
Input Watts (W): 95.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	11134	11134	11134
5°	11112	10885	10896
10°	11038	10690	10678
15°	10943	10475	10416
20°	10841	10234	10161
25°	10719	9987	9903
30°	10577	9723	9608
35°	10398	9433	9317
40°	10213	9127	8978
45°	10013	8794	8611
50°	9753	8410	8217
55°	9472	7989	7782
60°	9136	7441	7275
65°	8591	6829	6772
70°	7809	6108	6186
75°	6696	5317	5655
80°	5037	4542	5170
85°	2692	3759	4707

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 10013 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	261.0	3.1
10°-20°	748.7	9.0
20°-30°	1136.1	13.6
30°-40°	1373.7	16.5
40°-50°	1433.4	17.2
50°-60°	1310.5	15.7
60°-70°	1021.6	12.2
70°-80°	639.1	7.7
80°-90°	290.3	3.5
90°-100°	97.3	1.2
100°-110°	24.4	0.3
110°-120°	3.9	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°	2145.9	25.7
0°-40°	3519.6	42.2
0°-60°	6263.5	75.1
0°-90°	8214.4	98.5
90°-120°	125.6	1.5
90°-150°	125.6	1.5
90°-180°	126.0	1.5
0°-180°	8340.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2758	2758	2758	2758	2758	
5°	2752	2747	2735	2748	2748	261
15°	2648	2652	2645	2660	2660	747
25°	2453	2455	2458	2479	2483	1130
35°	2172	2182	2191	2213	2222	1359
45°	1827	1844	1858	1877	1886	1408
55°	1426	1443	1470	1491	1501	1274
65°	980	997	1031	1072	1089	970
75°	496	527	603	676	701	529
85°	86	159	272	360	392	109
90°	1	59	161	241	270	3
95°	1	16	83	151	174	1
105°	1	2	14	40	54	1
115°	2	2	3	7	10	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°	2758.4	2758.4	2758.4	2758.4	2758.4
2.5°	2761.6	2757.7	2745.4	2757.7	2757.1
5°	2752.5	2747.3	2735.0	2748.0	2748.0
7.5°	2734.3	2732.4	2721.3	2736.3	2736.3
10°	2712.9	2712.2	2703.1	2719.4	2720.0
12.5°	2682.9	2685.5	2677.1	2692.7	2694.6
15°	2647.8	2652.4	2645.2	2660.2	2659.5
17.5°	2609.5	2612.1	2606.9	2623.8	2623.1
20°	2562.0	2565.2	2561.3	2578.9	2580.8
22.5°	2509.3	2513.9	2513.2	2531.4	2536.6
25°	2453.4	2455.4	2458.0	2478.8	2482.7
27.5°	2391.6	2394.9	2399.4	2418.3	2422.2
30°	2324.0	2329.2	2334.4	2353.9	2359.1
32.5°	2252.5	2257.7	2264.2	2289.5	2292.1
35°	2171.8	2181.6	2190.7	2212.8	2221.9
37.5°	2091.2	2103.6	2112.0	2135.4	2142.6
40°	2006.0	2018.4	2032.0	2056.7	2061.3
42.5°	1916.9	1931.2	1947.5	1969.6	1977.4
45°	1827.2	1843.5	1858.4	1876.6	1885.7
47.5°	1730.3	1746.6	1764.8	1785.6	1791.4
50°	1630.2	1649.0	1668.5	1688.1	1698.5
52.5°	1527.4	1550.2	1572.3	1593.1	1602.9
55°	1426.0	1442.9	1469.6	1491.0	1500.8
57.5°	1320.7	1335.0	1359.0	1394.1	1399.3
60°	1213.4	1226.4	1251.1	1279.7	1291.4
62.5°	1095.0	1112.6	1138.6	1175.0	1185.4
65°	979.9	996.8	1031.3	1072.3	1089.2
67.5°	868.7	874.6	918.8	961.7	989.0
70°	737.4	759.5	810.9	863.5	884.3
72.5°	624.2	646.4	702.9	764.7	790.7
75°	496.1	526.7	603.4	675.6	701.0
77.5°	383.6	417.5	512.4	585.2	614.5
80°	267.9	320.6	424.0	505.9	537.8
82.5°	168.4	233.4	344.0	429.8	457.8
85°	85.8	158.7	272.5	360.2	392.1
87.5°	22.8	102.7	212.0	295.9	328.4
90°	0.7	59.2	160.6	241.2	270.5
92.5°	0.7	33.2	119.6	191.8	221.7
95°	0.7	15.6	83.2	150.9	174.3
97.5°	0.7	6.5	57.2	113.8	137.2
100°	0.7	3.3	36.4	82.6	102.7
102.5°	1.3	2.0	22.8	59.2	75.4
105°	1.3	2.0	13.7	40.3	54.0
107.5°	1.3	2.0	7.8	27.3	37.1
110°	2.0	2.0	4.6	16.9	24.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.0	2.0	2.6	11.1	16.3
115°	2.0	2.0	2.6	7.2	10.4
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)