

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: P518150

Luminaire Tested: HVL8-4-LD4-3STD-40-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: P518150
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-3STD-40-UNV-O-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8458.0 lumens
Efficiency: N/A
Efficacy: 88.6 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

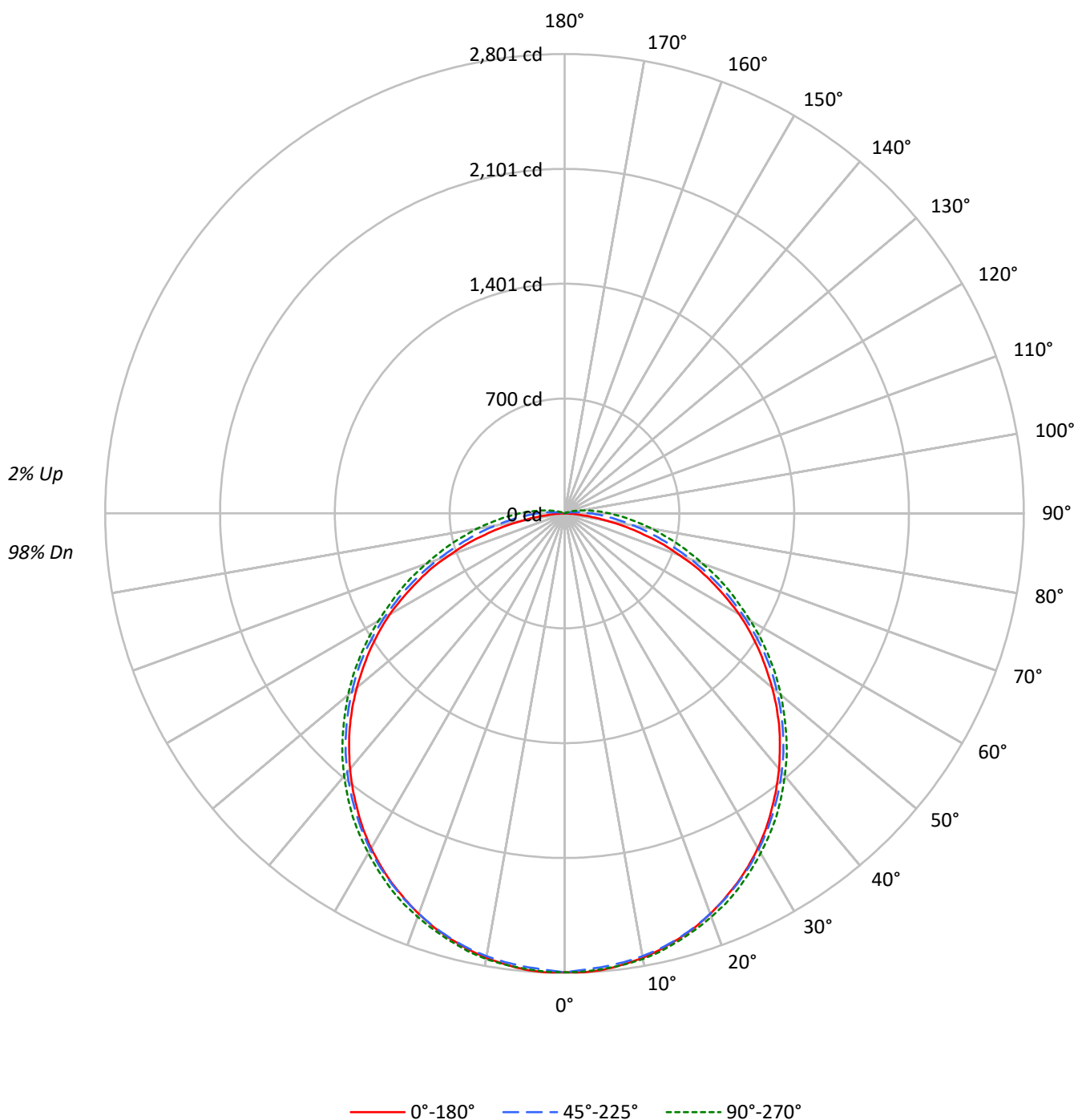
Input Watts (W): 95.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	11292	11292	11292
5°	11270	11039	11050
10°	11194	10842	10829
15°	11098	10623	10563
20°	10994	10379	10305
25°	10870	10128	10043
30°	10727	9860	9744
35°	10546	9566	9449
40°	10358	9257	9105
45°	10155	8919	8733
50°	9890	8530	8333
55°	9606	8102	7892
60°	9265	7547	7378
65°	8713	6926	6868
70°	7919	6194	6274
75°	6791	5393	5735
80°	5108	4606	5243
85°	2729	3811	4773

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 10155 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	264.7	3.1
10°-20°	759.3	9.0
20°-30°	1152.2	13.6
30°-40°	1393.2	16.5
40°-50°	1453.7	17.2
50°-60°	1329.1	15.7
60°-70°	1036.1	12.2
70°-80°	648.1	7.7
80°-90°	294.4	3.5
90°-100°	98.7	1.2
100°-110°	24.8	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°	2176.2	25.7
0°-40°	3569.4	42.2
0°-60°	6352.1	75.1
0°-90°	8330.7	98.5
90°-120°	127.3	1.5
90°-150°	127.3	1.5
90°-180°	127.0	1.5
0°-180°	8458.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2797	2797	2797	2797	2797	
5°	2792	2786	2774	2787	2787	265
15°	2685	2690	2683	2698	2697	758
25°	2488	2490	2493	2514	2518	1146
35°	2203	2212	2222	2244	2253	1379
45°	1853	1870	1885	1903	1912	1428
55°	1446	1463	1490	1512	1522	1292
65°	994	1011	1046	1087	1105	983
75°	503	534	612	685	711	536
85°	87	161	276	365	398	110
90°	1	60	163	245	274	3
95°	1	16	84	153	177	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°	2797.4	2797.4	2797.4	2797.4	2797.4
2.5°	2800.7	2796.7	2784.2	2796.7	2796.1
5°	2791.5	2786.2	2773.7	2786.8	2786.8
7.5°	2773.0	2771.0	2759.8	2775.0	2775.0
10°	2751.2	2750.6	2741.3	2757.8	2758.5
12.5°	2720.9	2723.5	2715.0	2730.8	2732.8
15°	2685.3	2689.9	2682.7	2697.8	2697.2
17.5°	2646.4	2649.0	2643.7	2660.9	2660.2
20°	2598.2	2601.5	2597.6	2615.4	2617.4
22.5°	2544.8	2549.4	2548.8	2567.2	2572.5
25°	2488.1	2490.1	2492.7	2513.8	2517.8
27.5°	2425.5	2428.8	2433.4	2452.5	2456.5
30°	2356.9	2362.2	2367.4	2387.2	2392.5
32.5°	2284.3	2289.6	2296.2	2321.9	2324.6
35°	2202.6	2212.5	2221.7	2244.1	2253.3
37.5°	2120.8	2133.3	2141.9	2165.6	2172.9
40°	2034.4	2046.9	2060.8	2085.8	2090.5
42.5°	1944.1	1958.6	1975.1	1997.5	2005.4
45°	1853.1	1869.5	1884.7	1903.2	1912.4
47.5°	1754.8	1771.3	1789.8	1810.9	1816.8
50°	1653.2	1672.4	1692.2	1711.9	1722.5
52.5°	1549.1	1572.1	1594.6	1615.7	1625.5
55°	1446.2	1463.3	1490.4	1512.1	1522.0
57.5°	1339.3	1353.9	1378.3	1413.9	1419.1
60°	1230.5	1243.7	1268.8	1297.8	1309.7
62.5°	1110.5	1128.3	1154.7	1191.6	1202.2
65°	993.8	1010.9	1045.9	1087.4	1104.6
67.5°	881.0	887.0	931.8	975.3	1003.0
70°	747.8	770.2	822.3	875.8	896.9
72.5°	633.1	655.5	712.9	775.5	801.9
75°	503.2	534.2	612.0	685.2	710.9
77.5°	389.1	423.4	519.6	593.5	623.2
80°	271.7	325.1	430.0	513.1	545.4
82.5°	170.8	236.7	348.9	435.9	464.3
85°	87.0	160.9	276.3	365.3	397.6
87.5°	23.1	104.2	215.0	300.1	333.0
90°	0.7	60.0	162.9	244.7	274.3
92.5°	0.7	33.6	121.3	194.5	224.9
95°	0.7	15.8	84.4	153.0	176.7
97.5°	0.7	6.6	58.0	115.4	139.1
100°	0.7	3.3	36.9	83.8	104.2
102.5°	1.3	2.0	23.1	60.0	76.5
105°	1.3	2.0	13.8	40.9	54.7
107.5°	1.3	2.0	7.9	27.7	37.6
110°	2.0	2.0	4.6	17.1	25.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.0	2.0	2.6	11.2	16.5
115°	2.0	2.0	2.6	7.3	10.6
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)