

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: P518128

Luminaire Tested: HVL8-4-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: P518128
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-3LO-35-UNV-C-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: 8545.0 lumens
Efficiency: N/A
Efficacy: 126.8 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

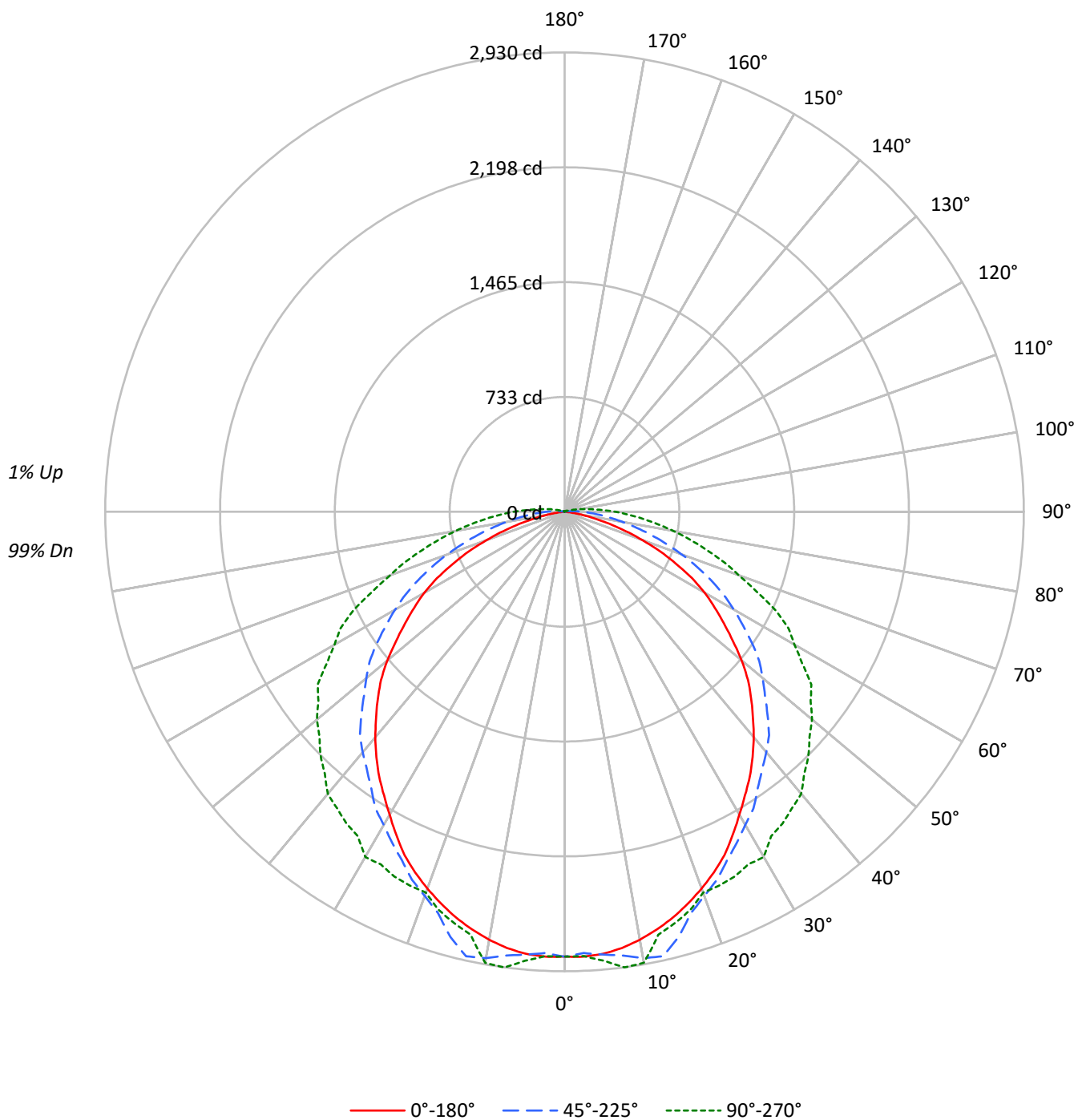
Input Watts (W): 67.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	11449	11449	11449
5°	11423	11278	11394
10°	11273	11430	11464
15°	11068	11120	10641
20°	10819	10417	10176
25°	10554	9966	10240
30°	10154	9602	10353
35°	9868	9257	10169
40°	9561	8998	10233
45°	9230	8665	10048
50°	8828	8315	9971
55°	8240	7940	9966
60°	7788	7427	9540
65°	6884	6815	9236
70°	5617	6019	8282
75°	4008	5056	7561
80°	2249	4086	6788
85°	834	3084	5979

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 10048 cd/sqm

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CATALOG NUMBER: HVL8-4-LD4-3LO-35-UNV-C-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	272.6	3.2
10°-20°	776.3	9.1
20°-30°	1155.1	13.5
30°-40°	1388.5	16.2
40°-50°	1461.4	17.1
50°-60°	1356.0	15.9
60°-70°	1072.2	12.5
70°-80°	654.9	7.7
80°-90°	285.3	3.3
90°-100°	88.8	1.0
100°-110°	20.0	0.2
110°-120°	8.0	0.1
120°-130°	4.5	0.1
130°-140°	1.2	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°	2204.1	25.8
0°-40°	3592.5	42.0
0°-60°	6410.0	75.0
0°-90°	8422.5	98.6
90°-120°	116.8	1.4
90°-150°	122.6	1.4
90°-180°	123.0	1.4
0°-180°	8545.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2836	2836	2836	2836	2836	
5°	2830	2824	2834	2865	2874	268
15°	2678	2781	2808	2715	2717	754
25°	2416	2570	2453	2526	2567	1109
35°	2061	2118	2150	2345	2425	1288
45°	1684	1692	1831	2121	2200	1298
55°	1241	1261	1461	1780	1922	1115
65°	785	810	1029	1362	1486	778
75°	297	394	574	882	937	324
85°	27	92	224	434	498	41
90°	1	28	117	275	324	1
95°	1	7	51	151	184	0
105°	1	4	10	30	42	1
115°	1	2	8	13	14	1
125°	1	1	4	9	12	1
135°	1	1	1	3	4	1
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: HVL8-4-LD4-3LO-35-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2836.5	2836.5	2836.5	2836.5	2836.5
2.5°	2839.9	2832.4	2816.8	2831.9	2835.9
5°	2829.5	2823.8	2833.6	2865.4	2873.5
7.5°	2805.9	2827.8	2853.8	2911.6	2930.1
10°	2770.6	2812.2	2890.2	2939.3	2920.3
12.5°	2727.8	2798.3	2902.9	2807.0	2762.5
15°	2678.2	2781.0	2808.2	2715.1	2716.9
17.5°	2619.8	2766.6	2682.8	2680.5	2663.7
20°	2556.8	2718.0	2607.1	2602.5	2584.5
22.5°	2489.2	2653.9	2540.1	2530.8	2579.3
25°	2415.8	2570.1	2452.8	2526.2	2567.2
27.5°	2324.0	2460.3	2380.0	2484.0	2535.4
30°	2230.9	2347.1	2305.5	2450.5	2541.8
32.5°	2143.7	2228.6	2244.2	2437.8	2452.8
35°	2061.1	2118.3	2150.0	2345.3	2425.1
37.5°	1970.3	1985.9	2070.3	2306.6	2383.5
40°	1877.9	1868.1	2003.3	2243.1	2349.4
42.5°	1778.5	1775.0	1932.2	2211.3	2264.4
45°	1684.3	1691.8	1831.1	2121.1	2200.3
47.5°	1587.8	1597.6	1735.2	2022.3	2120.6
50°	1475.7	1488.4	1649.7	1934.5	2061.1
52.5°	1354.4	1378.7	1566.4	1851.3	1979.0
55°	1240.6	1260.8	1460.7	1780.2	1921.8
57.5°	1136.6	1148.7	1351.5	1690.7	1797.6
60°	1034.3	1037.2	1248.7	1591.3	1693.6
62.5°	917.0	922.2	1142.9	1474.0	1610.9
65°	785.2	810.1	1029.1	1361.9	1485.6
67.5°	662.2	705.5	912.9	1259.1	1323.8
70°	530.4	603.8	799.1	1138.3	1183.9
72.5°	409.7	495.8	682.4	1003.1	1067.2
75°	297.0	393.5	573.8	881.7	937.2
77.5°	199.9	298.2	472.1	747.7	821.1
80°	119.6	217.8	381.4	623.5	706.1
82.5°	61.2	146.2	295.8	522.9	596.9
85°	26.6	92.4	223.6	433.9	498.1
87.5°	7.5	52.6	164.7	350.7	405.0
90°	0.6	27.7	117.3	275.0	324.2
92.5°	0.6	13.3	82.6	208.0	245.6
95°	0.6	6.9	51.4	150.8	184.3
97.5°	0.6	4.0	31.2	106.9	135.2
100°	0.6	3.5	18.5	71.1	96.5
102.5°	0.6	4.0	12.7	45.1	63.0
105°	0.6	4.0	10.4	29.5	41.6
107.5°	1.2	4.0	9.2	22.0	28.9
110°	0.6	3.5	9.8	16.8	22.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.2	2.9	9.2	13.9	16.8
115°	0.6	2.3	8.1	13.3	13.9
117.5°	1.2	1.7	6.4	13.3	13.9
120°	1.2	1.2	5.2	12.7	14.4
122.5°	1.2	1.2	4.0	11.6	13.9
125°	0.6	1.2	3.5	8.7	12.1
127.5°	1.2	1.2	2.9	6.9	9.2
130°	1.2	1.2	2.3	5.2	6.9
132.5°	1.2	1.2	1.7	4.0	5.2
135°	1.2	1.2	1.2	2.9	4.0
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)