

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: P518227

Luminaire Tested: HVL8-8-LD4-2LO-40-UNV-C-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: P518227
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-8-LD4-2LO-40-UNV-C-EDD-90
Description: 8 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10945.0 lumens
Efficiency: N/A
Efficacy: 118.7 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 8' x H: 0.17')
CIE Type: Direct

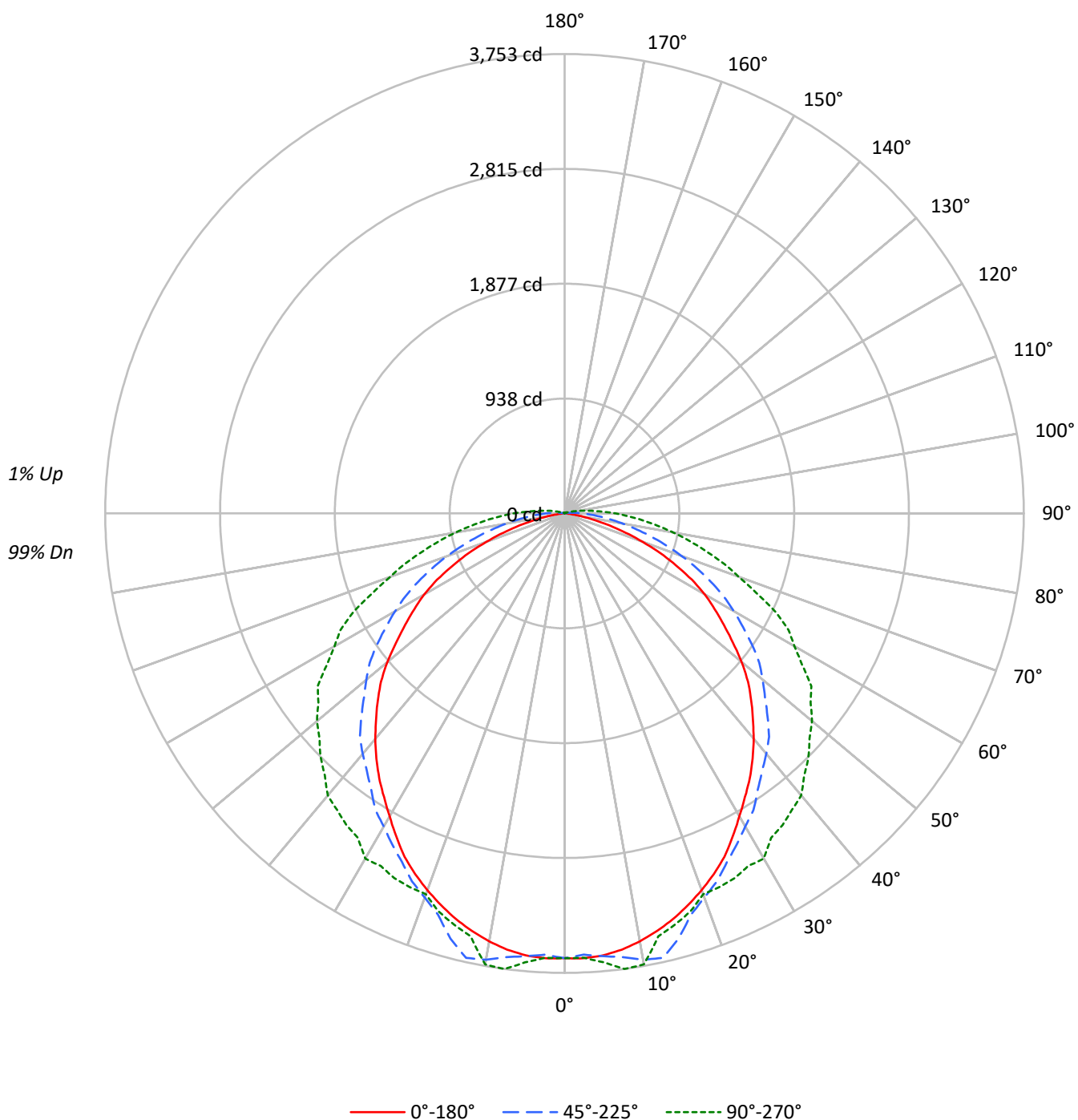
Input Watts (W): 92.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	7332	7332	7332
5°	7329	7232	7297
10°	7246	7339	7342
15°	7128	7149	6814
20°	6981	6705	6517
25°	6825	6423	6558
30°	6580	6197	6630
35°	6411	5983	6513
40°	6228	5824	6553
45°	6032	5618	6435
50°	5791	5401	6386
55°	5430	5169	6382
60°	5161	4848	6110
65°	4598	4462	5915
70°	3792	3957	5305
75°	2752	3342	4842
80°	1592	2721	4347
85°	636	2079	3829

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 6435 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	349.2	3.2
10°-20°	994.4	9.1
20°-30°	1479.6	13.5
30°-40°	1778.4	16.2
40°-50°	1871.9	17.1
50°-60°	1736.9	15.9
60°-70°	1373.3	12.5
70°-80°	838.9	7.7
80°-90°	365.5	3.3
90°-100°	113.8	1.0
100°-110°	25.6	0.2
110°-120°	10.3	0.1
120°-130°	5.8	0.1
130°-140°	1.6	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°	2823.1	25.8
0°-40°	4601.6	42.0
0°-60°	8210.4	75.0
0°-90°	10788.1	98.6
90°-120°	149.6	1.4
90°-150°	157.0	1.4
90°-180°	157.0	1.4
0°-180°	10945.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3633	3633	3633	3633	3633	
5°	3624	3617	3629	3670	3680	343
15°	3430	3562	3597	3478	3480	966
25°	3094	3292	3142	3236	3288	1421
35°	2640	2713	2754	3004	3106	1650
45°	2157	2167	2345	2717	2818	1663
55°	1589	1615	1871	2280	2462	1428
65°	1006	1038	1318	1744	1903	996
75°	380	504	735	1129	1200	415
85°	34	118	286	556	638	53
90°	1	36	150	352	415	2
95°	1	9	66	193	236	1
105°	1	5	13	38	53	1
115°	1	3	10	17	18	1
125°	1	2	4	11	16	1
135°	2	2	2	4	5	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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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3633.1	3633.1	3633.1	3633.1	3633.1
2.5°	3637.6	3628.0	3608.0	3627.2	3632.4
5°	3624.3	3616.9	3629.4	3670.1	3680.5
7.5°	3593.9	3622.0	3655.3	3729.4	3753.0
10°	3548.8	3602.1	3702.0	3764.9	3740.5
12.5°	3494.0	3584.3	3718.3	3595.4	3538.4
15°	3430.4	3562.1	3596.9	3477.7	3479.9
17.5°	3355.6	3543.6	3436.3	3433.3	3411.9
20°	3274.9	3481.4	3339.3	3333.4	3310.5
22.5°	3188.3	3399.3	3253.5	3241.6	3303.8
25°	3094.4	3292.0	3141.7	3235.7	3288.3
27.5°	2976.7	3151.3	3048.5	3181.7	3247.6
30°	2857.5	3006.3	2953.0	3138.8	3255.7
32.5°	2745.8	2854.6	2874.5	3122.5	3141.7
35°	2639.9	2713.2	2753.9	3004.1	3106.2
37.5°	2523.7	2543.7	2651.8	2954.5	3052.9
40°	2405.3	2392.7	2565.9	2873.1	3009.2
42.5°	2278.0	2273.6	2474.9	2832.4	2900.4
45°	2157.4	2167.0	2345.4	2716.9	2818.3
47.5°	2033.8	2046.4	2222.5	2590.3	2716.2
50°	1890.2	1906.5	2113.0	2477.9	2639.9
52.5°	1734.8	1765.9	2006.4	2371.3	2534.8
55°	1589.0	1614.9	1871.0	2280.2	2461.6
57.5°	1455.8	1471.3	1731.1	2165.5	2302.4
60°	1324.8	1328.5	1599.4	2038.2	2169.2
62.5°	1174.5	1181.2	1463.9	1888.0	2063.4
65°	1005.8	1037.6	1318.1	1744.4	1902.8
67.5°	848.2	903.7	1169.4	1612.7	1695.6
70°	679.4	773.4	1023.6	1458.0	1516.5
72.5°	524.7	635.0	874.1	1284.8	1367.0
75°	380.4	504.0	734.9	1129.4	1200.4
77.5°	256.1	381.9	604.7	957.7	1051.7
80°	153.2	279.0	488.5	798.6	904.4
82.5°	78.5	187.2	378.9	669.8	764.5
85°	34.0	118.4	286.4	555.8	638.0
87.5°	9.6	67.3	210.9	449.2	518.8
90°	0.7	35.5	150.2	352.3	415.2
92.5°	0.7	17.0	105.8	266.4	314.5
95°	0.7	8.9	65.9	193.2	236.1
97.5°	0.7	5.2	40.0	136.9	173.2
100°	0.7	4.4	23.7	91.0	123.6
102.5°	0.7	5.2	16.3	57.7	80.7
105°	0.7	5.2	13.3	37.7	53.3
107.5°	1.5	5.2	11.8	28.1	37.0
110°	0.7	4.4	12.6	21.5	28.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.5	3.7	11.8	17.8	21.5
115°	0.7	3.0	10.4	17.0	17.8
117.5°	1.5	2.2	8.1	17.0	17.8
120°	1.5	1.5	6.7	16.3	18.5
122.5°	1.5	1.5	5.2	14.8	17.8
125°	0.7	1.5	4.4	11.1	15.5
127.5°	1.5	1.5	3.7	8.9	11.8
130°	1.5	1.5	3.0	6.7	8.9
132.5°	1.5	1.5	2.2	5.2	6.7
135°	1.5	1.5	1.5	3.7	5.2
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)