

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: P518223

Luminaire Tested: HVL8-8-LD4-2LO-35-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: P518223
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-8-LD4-2LO-35-UNV-C-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: 10837.0 lumens
Efficiency: N/A
Efficacy: 117.5 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

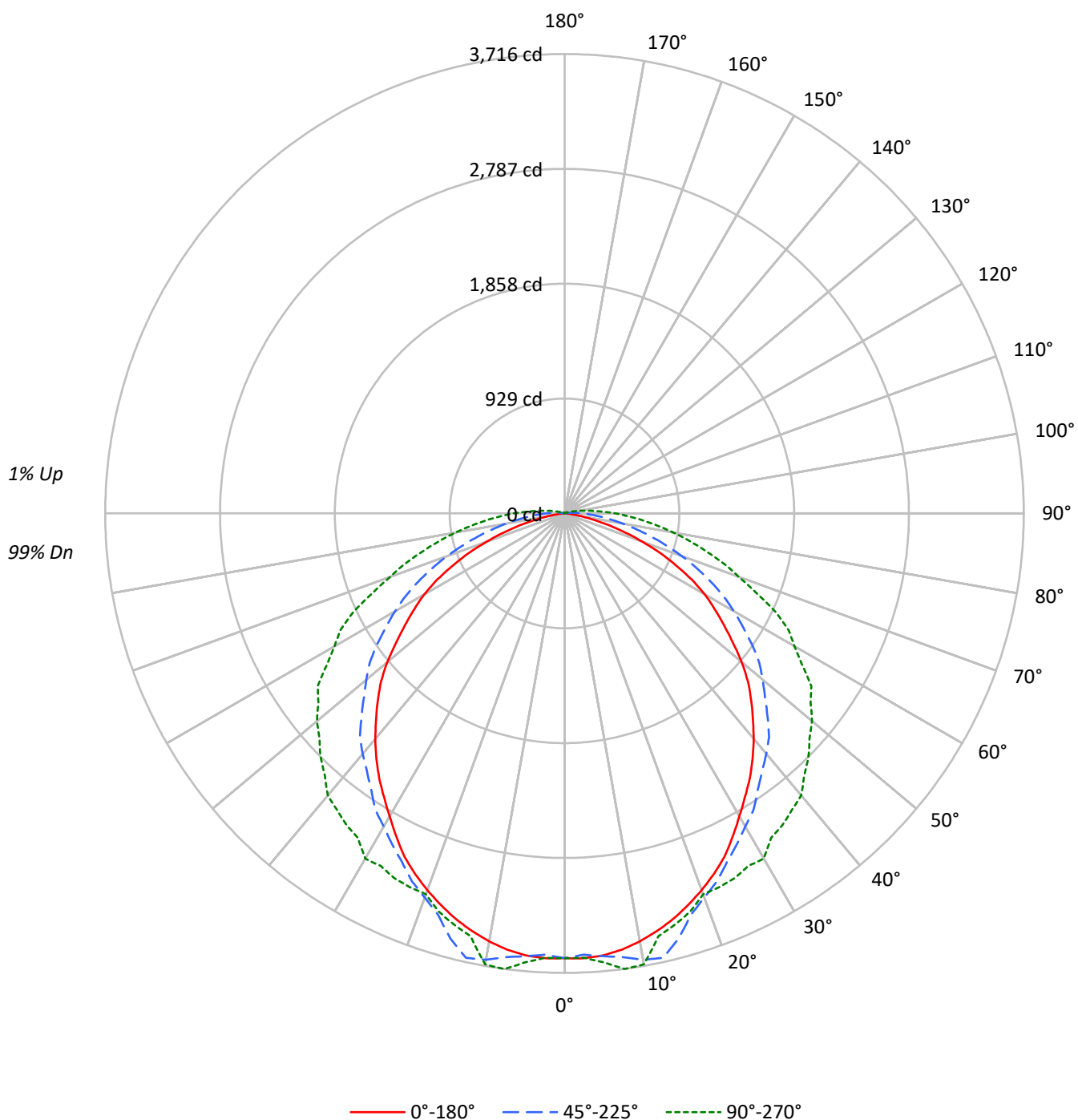
Input Watts (W): 92.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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				0
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		0
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		99
1	108	103	98	94	105	100	96	92	96	92	89		91	89	86		81
2	98	89	82	76	95	87	80	75	83	78	73		80	75	71		67
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		56
4	81	69	60	53	79	67	59	52	65	57	51		62	56	51		47
5	75	61	52	45	72	60	51	45	58	50	44		56	49	44		41
6	69	55	46	39	67	54	46	39	52	45	39		50	44	38		36
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		32
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		28
9	55	42	34	28	54	41	33	28	40	33	28		39	32	27		25
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7260	7260	7260
5°	7257	7160	7225
10°	7175	7266	7269
15°	7057	7078	6747
20°	6912	6639	6453
25°	6757	6359	6493
30°	6515	6135	6565
35°	6348	5924	6448
40°	6167	5767	6488
45°	5972	5563	6371
50°	5734	5348	6323
55°	5376	5118	6319
60°	5110	4800	6049
65°	4553	4418	5857
70°	3755	3918	5252
75°	2726	3309	4794
80°	1577	2694	4304
85°	630	2059	3792

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 6371 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	345.7	3.2
10°-20°	984.6	9.1
20°-30°	1465.0	13.5
30°-40°	1760.9	16.2
40°-50°	1853.4	17.1
50°-60°	1719.8	15.9
60°-70°	1359.8	12.5
70°-80°	830.6	7.7
80°-90°	361.9	3.3
90°-100°	112.7	1.0
100°-110°	25.3	0.2
110°-120°	10.2	0.1
120°-130°	5.7	0.1
130°-140°	1.5	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°	2795.3	25.8
0°-40°	4556.1	42.0
0°-60°	8129.3	75.0
0°-90°	10681.6	98.6
90°-120°	148.2	1.4
90°-150°	155.4	1.4
90°-180°	155.0	1.4
0°-180°	10837.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3597	3597	3597	3597	3597	
5°	3588	3581	3594	3634	3644	340
15°	3396	3527	3561	3443	3446	957
25°	3064	3260	3111	3204	3256	1407
35°	2614	2686	2727	2974	3076	1634
45°	2136	2146	2322	2690	2790	1647
55°	1573	1599	1852	2258	2437	1414
65°	996	1027	1305	1727	1884	986
75°	377	499	728	1118	1189	411
85°	34	117	284	550	632	52
90°	1	35	149	349	411	2
95°	1	9	65	191	234	1
105°	1	5	13	37	53	1
115°	1	3	10	17	18	1
125°	1	2	4	11	15	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°	3597.3	3597.3	3597.3	3597.3	3597.3
2.5°	3601.7	3592.2	3572.4	3591.4	3596.6
5°	3588.5	3581.2	3593.6	3633.9	3644.2
7.5°	3558.5	3586.3	3619.3	3692.6	3716.0
10°	3513.8	3566.5	3665.4	3727.7	3703.5
12.5°	3459.5	3548.9	3681.6	3559.9	3503.5
15°	3396.5	3526.9	3561.4	3443.4	3445.6
17.5°	3322.5	3508.6	3402.4	3399.4	3378.2
20°	3242.6	3447.1	3306.4	3300.5	3277.8
22.5°	3156.9	3365.7	3221.4	3209.6	3271.2
25°	3063.8	3259.5	3110.7	3203.8	3255.8
27.5°	2947.3	3120.2	3018.4	3150.3	3215.5
30°	2829.3	2976.6	2923.9	3107.8	3223.6
32.5°	2718.7	2826.4	2846.2	3091.7	3110.7
35°	2613.9	2686.4	2726.7	2974.4	3075.5
37.5°	2498.8	2518.6	2625.6	2925.3	3022.8
40°	2381.6	2369.1	2540.6	2844.7	2979.5
42.5°	2255.5	2251.1	2450.5	2804.4	2871.8
45°	2136.1	2145.6	2322.2	2690.1	2790.5
47.5°	2013.7	2026.2	2200.6	2564.8	2689.4
50°	1871.6	1887.7	2092.1	2453.4	2613.9
52.5°	1717.7	1748.5	1986.6	2347.9	2509.8
55°	1573.3	1599.0	1852.5	2257.7	2437.3
57.5°	1441.4	1456.8	1714.0	2144.2	2279.7
60°	1311.7	1315.4	1583.6	2018.1	2147.8
62.5°	1162.9	1169.5	1449.5	1869.4	2043.0
65°	995.9	1027.4	1305.1	1727.2	1884.0
67.5°	839.8	894.7	1157.8	1596.8	1678.8
70°	672.7	765.8	1013.5	1443.6	1501.5
72.5°	519.6	628.7	865.4	1272.1	1353.5
75°	376.7	499.0	727.7	1118.2	1188.6
77.5°	253.5	378.1	598.7	948.2	1041.3
80°	151.7	276.3	483.6	790.7	895.5
82.5°	77.7	185.4	375.2	663.2	757.0
85°	33.7	117.2	283.6	550.3	631.7
87.5°	9.5	66.7	208.8	444.8	513.7
90°	0.7	35.2	148.8	348.8	411.1
92.5°	0.7	16.9	104.8	263.8	311.4
95°	0.7	8.8	65.2	191.3	233.8
97.5°	0.7	5.1	39.6	135.6	171.5
100°	0.7	4.4	23.4	90.1	122.4
102.5°	0.7	5.1	16.1	57.2	79.9
105°	0.7	5.1	13.2	37.4	52.8
107.5°	1.5	5.1	11.7	27.8	36.6
110°	0.7	4.4	12.5	21.3	28.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.5	3.7	11.7	17.6	21.3
115°	0.7	2.9	10.3	16.9	17.6
117.5°	1.5	2.2	8.1	16.9	17.6
120°	1.5	1.5	6.6	16.1	18.3
122.5°	1.5	1.5	5.1	14.7	17.6
125°	0.7	1.5	4.4	11.0	15.4
127.5°	1.5	1.5	3.7	8.8	11.7
130°	1.5	1.5	2.9	6.6	8.8
132.5°	1.5	1.5	2.2	5.1	6.6
135°	1.5	1.5	1.5	3.7	5.1
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)