

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: P517591

Luminaire Tested: HVL12-8-LD4-1HI-50-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: P517591
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-1HI-50-UNV-C-EDD-90
Description: 8 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10144.0 lumens
Efficiency: N/A
Efficacy: 114.9 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 8' x H: 0.17')
CIE Type: Direct

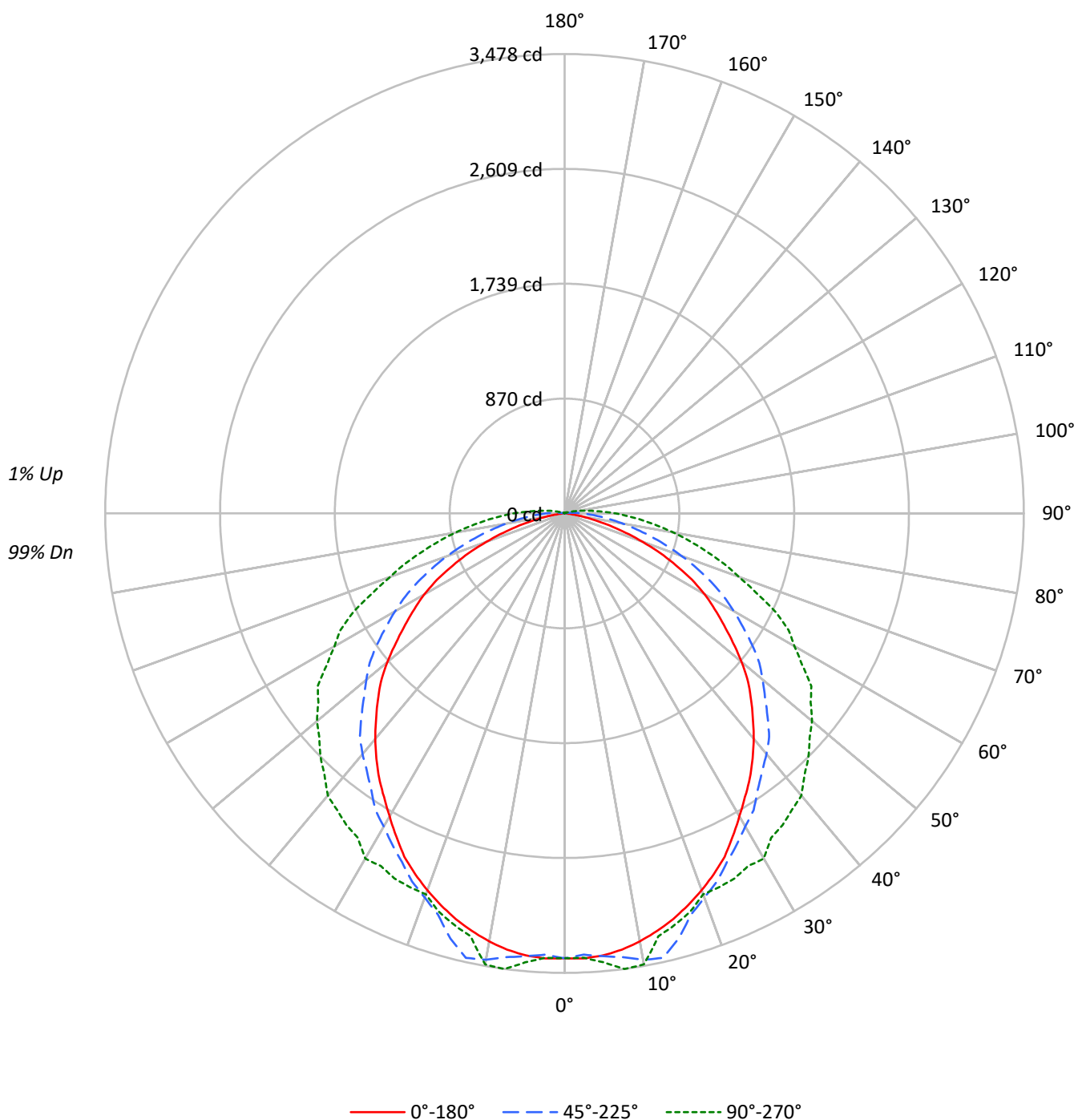
Input Watts (W): 88.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	4531	4531	4531
5°	4529	4491	4541
10°	4477	4580	4601
15°	4404	4484	4301
20°	4313	4227	4142
25°	4217	4071	4198
30°	4066	3950	4276
35°	3961	3836	4234
40°	3848	3759	4298
45°	3727	3652	4260
50°	3578	3540	4273
55°	3355	3420	4323
60°	3189	3244	4198
65°	2841	3028	4136
70°	2343	2735	3792
75°	1701	2369	3566
80°	984	2002	3338
85°	394	1629	3142

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 4323 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	323.6	3.2
10°-20°	921.6	9.1
20°-30°	1371.3	13.5
30°-40°	1648.3	16.2
40°-50°	1734.9	17.1
50°-60°	1609.8	15.9
60°-70°	1272.8	12.5
70°-80°	777.5	7.7
80°-90°	338.7	3.3
90°-100°	105.4	1.0
100°-110°	23.7	0.2
110°-120°	9.5	0.1
120°-130°	5.4	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°	2616.5	25.8
0°-40°	4264.8	42.0
0°-60°	7609.5	75.0
0°-90°	9998.5	98.6
90°-120°	138.7	1.4
90°-150°	145.5	1.4
90°-180°	145.0	1.4
0°-180°	10144.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3367	3367	3367	3367	3367	
5°	3359	3352	3364	3402	3411	318
15°	3179	3301	3334	3223	3225	896
25°	2868	3051	2912	2999	3048	1317
35°	2447	2515	2552	2784	2879	1529
45°	2000	2008	2174	2518	2612	1541
55°	1473	1497	1734	2113	2281	1323
65°	932	962	1222	1617	1764	923
75°	353	467	681	1047	1113	385
85°	32	110	266	515	591	49
90°	1	33	139	326	385	2
95°	1	8	61	179	219	1
105°	1	5	12	35	49	1
115°	1	3	10	16	16	1
125°	1	1	4	10	14	1
135°	1	1	1	3	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°	3367.3	3367.3	3367.3	3367.3	3367.3
2.5°	3371.4	3362.5	3343.9	3361.8	3366.6
5°	3359.0	3352.2	3363.8	3401.6	3411.2
7.5°	3330.9	3357.0	3387.8	3456.4	3478.4
10°	3289.1	3338.4	3431.0	3489.4	3466.7
12.5°	3238.3	3322.0	3446.1	3332.3	3279.5
15°	3179.3	3301.4	3333.6	3223.2	3225.3
17.5°	3110.0	3284.3	3184.8	3182.1	3162.2
20°	3035.3	3226.6	3094.9	3089.5	3068.2
22.5°	2955.0	3150.5	3015.4	3004.4	3062.0
25°	2867.9	3051.0	2911.8	2998.9	3047.6
27.5°	2758.8	2920.7	2825.4	2948.8	3009.9
30°	2648.4	2786.3	2736.9	2909.1	3017.4
32.5°	2544.8	2645.7	2664.2	2894.0	2911.8
35°	2446.7	2514.6	2552.4	2784.2	2878.9
37.5°	2339.0	2357.6	2457.7	2738.3	2829.5
40°	2229.3	2217.6	2378.1	2662.8	2789.0
42.5°	2111.3	2107.2	2293.8	2625.1	2688.2
45°	1999.5	2008.4	2173.7	2518.1	2612.0
47.5°	1885.0	1896.6	2059.9	2400.8	2517.4
50°	1751.9	1767.0	1958.3	2296.5	2446.7
52.5°	1607.8	1636.6	1859.6	2197.7	2349.3
55°	1472.7	1496.7	1734.0	2113.4	2281.4
57.5°	1349.2	1363.6	1604.4	2007.0	2133.9
60°	1227.8	1231.3	1482.3	1889.1	2010.5
62.5°	1088.6	1094.8	1356.8	1749.8	1912.4
65°	932.2	961.7	1221.7	1616.7	1763.5
67.5°	786.1	837.5	1083.8	1494.7	1571.5
70°	629.7	716.8	948.6	1351.3	1405.5
72.5°	486.3	588.5	810.1	1190.8	1266.9
75°	352.6	467.1	681.1	1046.7	1112.6
77.5°	237.3	353.9	560.4	887.6	974.7
80°	142.0	258.6	452.7	740.1	838.2
82.5°	72.7	173.5	351.2	620.8	708.6
85°	31.6	109.7	265.5	515.1	591.3
87.5°	8.9	62.4	195.5	416.4	480.8
90°	0.7	32.9	139.2	326.5	384.8
92.5°	0.7	15.8	98.1	246.9	291.5
95°	0.7	8.2	61.0	179.0	218.8
97.5°	0.7	4.8	37.0	126.9	160.5
100°	0.7	4.1	21.9	84.4	114.6
102.5°	0.7	4.8	15.1	53.5	74.8
105°	0.7	4.8	12.3	35.0	49.4
107.5°	1.4	4.8	11.0	26.1	34.3
110°	0.7	4.1	11.7	19.9	26.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.4	3.4	11.0	16.5	19.9
115°	0.7	2.7	9.6	15.8	16.5
117.5°	1.4	2.1	7.5	15.8	16.5
120°	1.4	1.4	6.2	15.1	17.1
122.5°	1.4	1.4	4.8	13.7	16.5
125°	0.7	1.4	4.1	10.3	14.4
127.5°	1.4	1.4	3.4	8.2	11.0
130°	1.4	1.4	2.7	6.2	8.2
132.5°	1.4	1.4	2.1	4.8	6.2
135°	1.4	1.4	1.4	3.4	4.8
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)