

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: P517687

Luminaire Tested: HVL12-8-LD4-3HI-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: P517687
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-3HI-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: 30381.1 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: 1' x L: 8' x H: 0.17')
CIE Type: Direct

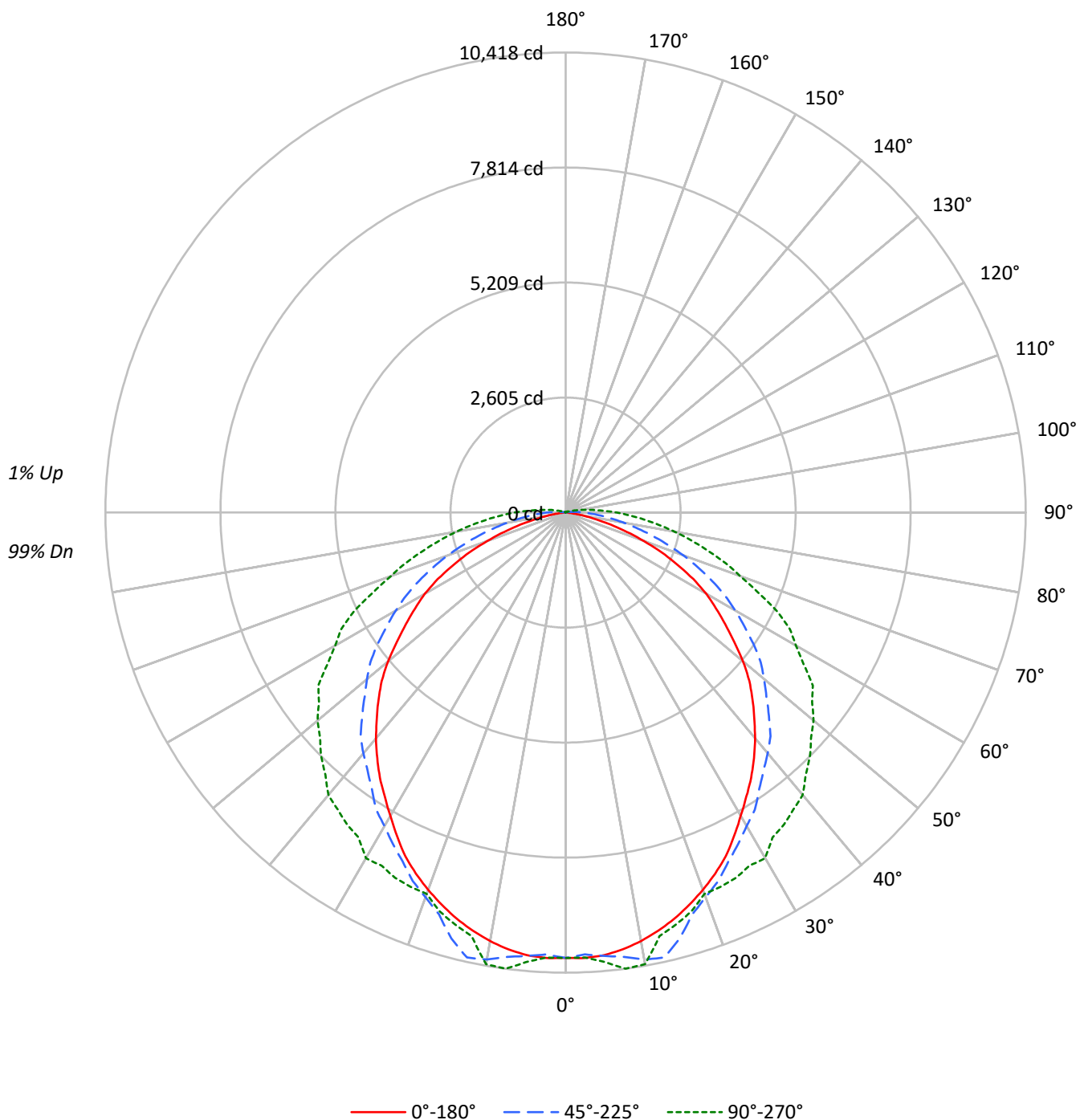
Input Watts (W): 258.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	13569	13569	13569
5°	13563	13451	13600
10°	13409	13719	13780
15°	13190	13430	12880
20°	12918	12661	12405
25°	12629	12193	12573
30°	12177	11829	12808
35°	11863	11489	12682
40°	11526	11257	12871
45°	11162	10937	12759
50°	10717	10602	12797
55°	10048	10243	12946
60°	9551	9715	12573
65°	8508	9069	12387
70°	7017	8192	11358
75°	5093	7094	10679
80°	2947	5996	9999
85°	1178	4879	9410

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 12946 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	969.3	3.2
10°-20°	2760.2	9.1
20°-30°	4106.9	13.5
30°-40°	4936.5	16.2
40°-50°	5196.0	17.1
50°-60°	4821.3	15.9
60°-70°	3812.1	12.5
70°-80°	2328.5	7.7
80°-90°	1014.5	3.3
90°-100°	315.8	1.0
100°-110°	71.0	0.2
110°-120°	28.5	0.1
120°-130°	16.0	0.1
130°-140°	4.3	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°	7836.4	25.8
0°-40°	12772.9	42.0
0°-60°	22790.2	75.0
0°-90°	29945.3	98.6
90°-120°	415.4	1.4
90°-150°	435.7	1.4
90°-180°	436.0	1.4
0°-180°	30381.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	10085	10085	10085	10085	10085	
5°	10060	10040	10075	10188	10216	953
15°	9522	9888	9984	9653	9660	2682
25°	8589	9138	8721	8982	9128	3943
35°	7328	7531	7644	8339	8622	4580
45°	5988	6015	6510	7542	7823	4616
55°	4411	4483	5193	6330	6833	3963
65°	2792	2880	3659	4842	5282	2765
75°	1056	1399	2040	3135	3332	1152
85°	94	329	795	1543	1771	146
90°	2	99	417	978	1152	5
95°	2	25	183	536	655	2
105°	2	14	37	105	148	3
115°	2	8	29	47	49	3
125°	2	4	12	31	43	3
135°	4	4	4	10	14	2
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°	10084.8	10084.8	10084.8	10084.8	10084.8
2.5°	10097.2	10070.5	10015.0	10068.4	10082.8
5°	10060.2	10039.6	10074.6	10187.6	10216.3
7.5°	9976.0	10054.0	10146.5	10351.9	10417.6
10°	9850.6	9998.6	10275.9	10450.5	10382.7
12.5°	9698.6	9949.3	10321.1	9980.1	9821.9
15°	9521.9	9887.6	9984.2	9653.4	9659.6
17.5°	9314.5	9836.3	9538.4	9530.2	9470.6
20°	9090.5	9663.7	9269.3	9252.8	9189.1
22.5°	8850.2	9435.7	9031.0	8998.1	9170.7
25°	8589.3	9137.8	8720.7	8981.6	9127.5
27.5°	8262.6	8747.5	8461.9	8831.7	9014.5
30°	7931.9	8344.8	8196.9	8712.5	9037.1
32.5°	7621.7	7923.7	7979.1	8667.3	8720.7
35°	7327.9	7531.3	7644.3	8338.6	8622.1
37.5°	7005.4	7060.8	7360.8	8201.0	8474.2
40°	6676.7	6641.7	7122.5	7975.0	8353.0
42.5°	6323.3	6311.0	6869.8	7862.0	8051.0
45°	5988.5	6015.2	6510.3	7541.5	7823.0
47.5°	5645.4	5680.3	6169.2	7190.3	7539.5
50°	5246.8	5292.0	5865.2	6878.0	7327.9
52.5°	4815.4	4901.7	5569.4	6582.2	7036.2
55°	4410.7	4482.6	5193.4	6329.5	6832.8
57.5°	4040.9	4084.1	4805.1	6011.0	6391.1
60°	3677.3	3687.6	4439.5	5657.7	6021.3
62.5°	3260.3	3278.8	4063.5	5240.7	5727.5
65°	2791.9	2880.2	3658.8	4842.1	5281.8
67.5°	2354.3	2508.4	3245.9	4476.4	4706.5
70°	1885.9	2146.8	2841.2	4047.1	4209.4
72.5°	1456.5	1762.6	2426.2	3566.4	3794.4
75°	1055.9	1399.0	2040.0	3134.9	3332.2
77.5°	710.8	1060.0	1678.4	2658.3	2919.2
80°	425.3	774.5	1355.9	2216.7	2510.4
82.5°	217.8	519.8	1051.8	1859.2	2122.2
85°	94.5	328.7	795.0	1542.8	1770.9
87.5°	26.7	186.9	585.5	1247.0	1440.1
90°	2.1	98.6	417.0	977.9	1152.5
92.5°	2.1	47.3	293.8	739.6	873.1
95°	2.1	24.7	182.8	536.2	655.3
97.5°	2.1	14.4	110.9	380.1	480.7
100°	2.1	12.3	65.7	252.7	343.1
102.5°	2.1	14.4	45.2	160.2	223.9
105°	2.1	14.4	37.0	104.8	147.9
107.5°	4.1	14.4	32.9	78.1	102.7
110°	2.1	12.3	34.9	59.6	80.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	4.1	10.3	32.9	49.3	59.6
115°	2.1	8.2	28.8	47.3	49.3
117.5°	4.1	6.2	22.6	47.3	49.3
120°	4.1	4.1	18.5	45.2	51.4
122.5°	4.1	4.1	14.4	41.1	49.3
125°	2.1	4.1	12.3	30.8	43.1
127.5°	4.1	4.1	10.3	24.7	32.9
130°	4.1	4.1	8.2	18.5	24.7
132.5°	4.1	4.1	6.2	14.4	18.5
135°	4.1	4.1	4.1	10.3	14.4
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)