

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: P517816

Luminaire Tested: HVL8-1-LD4-2STD-50-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: P517816
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-2STD-50-UNV-C-EDD
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1791.9 lumens
Efficiency: N/A
Efficacy: 109.9 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

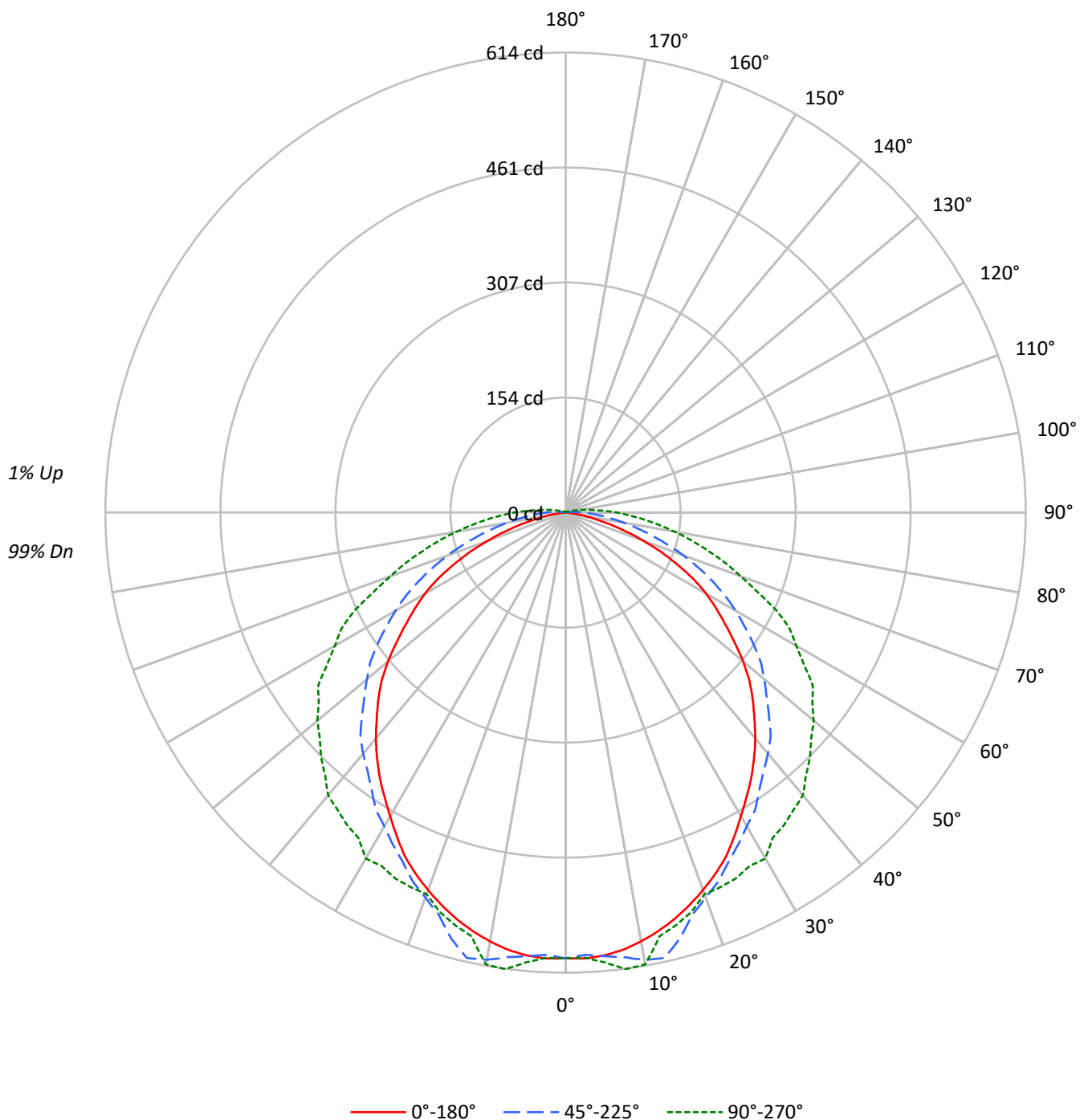
Input Watts (W): 16.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	9604	9604	9604
5°	9479	9388	9558
10°	9253	9446	9616
15°	8986	9123	8926
20°	8686	8484	8536
25°	8374	8057	8590
30°	7957	7704	8683
35°	7628	7367	8531
40°	7282	7099	8584
45°	6913	6772	8428
50°	6486	6432	8364
55°	5916	6068	8359
60°	5435	5599	8004
65°	4635	5052	7747
70°	3600	4372	6948
75°	2396	3574	6341
80°	1200	2785	5695
85°	357	1989	5018

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 8428 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	57.2	3.2
10°-20°	162.8	9.1
20°-30°	242.2	13.5
30°-40°	291.2	16.2
40°-50°	306.5	17.1
50°-60°	284.4	15.9
60°-70°	224.9	12.5
70°-80°	137.3	7.7
80°-90°	59.8	3.3
90°-100°	18.6	1.0
100°-110°	4.2	0.2
110°-120°	1.7	0.1
120°-130°	0.9	0.1
130°-140°	0.2	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°	462.2	25.8
0°-40°	753.4	42.0
0°-60°	1344.2	75.0
0°-90°	1766.3	98.6
90°-120°	24.5	1.4
90°-150°	25.6	1.4
90°-180°	26.0	1.5
0°-180°	1791.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	595	595	595	595	595	
5°	593	592	594	601	603	56
15°	562	583	589	569	570	158
25°	507	539	514	530	538	233
35°	432	444	451	492	509	270
45°	353	355	384	445	461	272
55°	260	264	306	373	403	234
65°	165	170	216	286	312	163
75°	62	82	120	185	196	68
85°	6	19	47	91	104	9
90°	0	6	25	58	68	0
95°	0	2	11	32	39	0
105°	0	1	2	6	9	0
115°	0	0	2	3	3	0
125°	0	0	1	2	2	0
135°	0	0	0	1	1	0
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°	594.8	594.8	594.8	594.8	594.8
2.5°	595.6	594.0	590.7	593.9	594.7
5°	593.4	592.2	594.2	600.9	602.6
7.5°	588.4	593.0	598.5	610.6	614.5
10°	581.0	589.8	606.1	616.4	612.4
12.5°	572.1	586.8	608.8	588.7	579.3
15°	561.6	583.2	588.9	569.4	569.8
17.5°	549.4	580.2	562.6	562.1	558.6
20°	536.2	570.0	546.7	545.8	542.0
22.5°	522.0	556.6	532.7	530.7	540.9
25°	506.6	539.0	514.4	529.8	538.4
27.5°	487.4	516.0	499.1	520.9	531.7
30°	467.9	492.2	483.5	513.9	533.0
32.5°	449.6	467.4	470.6	511.2	514.4
35°	432.2	444.2	450.9	491.8	508.6
37.5°	413.2	416.5	434.2	483.7	499.8
40°	393.8	391.8	420.1	470.4	492.7
42.5°	373.0	372.2	405.2	463.7	474.9
45°	353.2	354.8	384.0	444.8	461.4
47.5°	333.0	335.0	363.9	424.1	444.7
50°	309.5	312.1	346.0	405.7	432.2
52.5°	284.0	289.1	328.5	388.2	415.0
55°	260.2	264.4	306.3	373.3	403.0
57.5°	238.4	240.9	283.4	354.6	377.0
60°	216.9	217.5	261.9	333.7	355.2
62.5°	192.3	193.4	239.7	309.1	337.8
65°	164.7	169.9	215.8	285.6	311.5
67.5°	138.9	148.0	191.5	264.0	277.6
70°	111.2	126.6	167.6	238.7	248.3
72.5°	85.9	104.0	143.1	210.4	223.8
75°	62.3	82.5	120.3	184.9	196.5
77.5°	41.9	62.5	99.0	156.8	172.2
80°	25.1	45.7	80.0	130.7	148.1
82.5°	12.8	30.7	62.0	109.7	125.2
85°	5.6	19.4	46.9	91.0	104.5
87.5°	1.6	11.0	34.5	73.6	84.9
90°	0.1	5.8	24.6	57.7	68.0
92.5°	0.1	2.8	17.3	43.6	51.5
95°	0.1	1.5	10.8	31.6	38.7
97.5°	0.1	0.8	6.5	22.4	28.4
100°	0.1	0.7	3.9	14.9	20.2
102.5°	0.1	0.8	2.7	9.5	13.2
105°	0.1	0.8	2.2	6.2	8.7
107.5°	0.2	0.8	1.9	4.6	6.1
110°	0.1	0.7	2.1	3.5	4.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.6	1.9	2.9	3.5
115°	0.1	0.5	1.7	2.8	2.9
117.5°	0.2	0.4	1.3	2.8	2.9
120°	0.2	0.2	1.1	2.7	3.0
122.5°	0.2	0.2	0.8	2.4	2.9
125°	0.1	0.2	0.7	1.8	2.5
127.5°	0.2	0.2	0.6	1.5	1.9
130°	0.2	0.2	0.5	1.1	1.5
132.5°	0.2	0.2	0.4	0.8	1.1
135°	0.2	0.2	0.2	0.6	0.8
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)