

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: P517835

Luminaire Tested: HVL8-1-LD4-3LO-30-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: P517835
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-3LO-30-UNV-C-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1764.0 lumens
Efficiency: N/A
Efficacy: 105.0 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

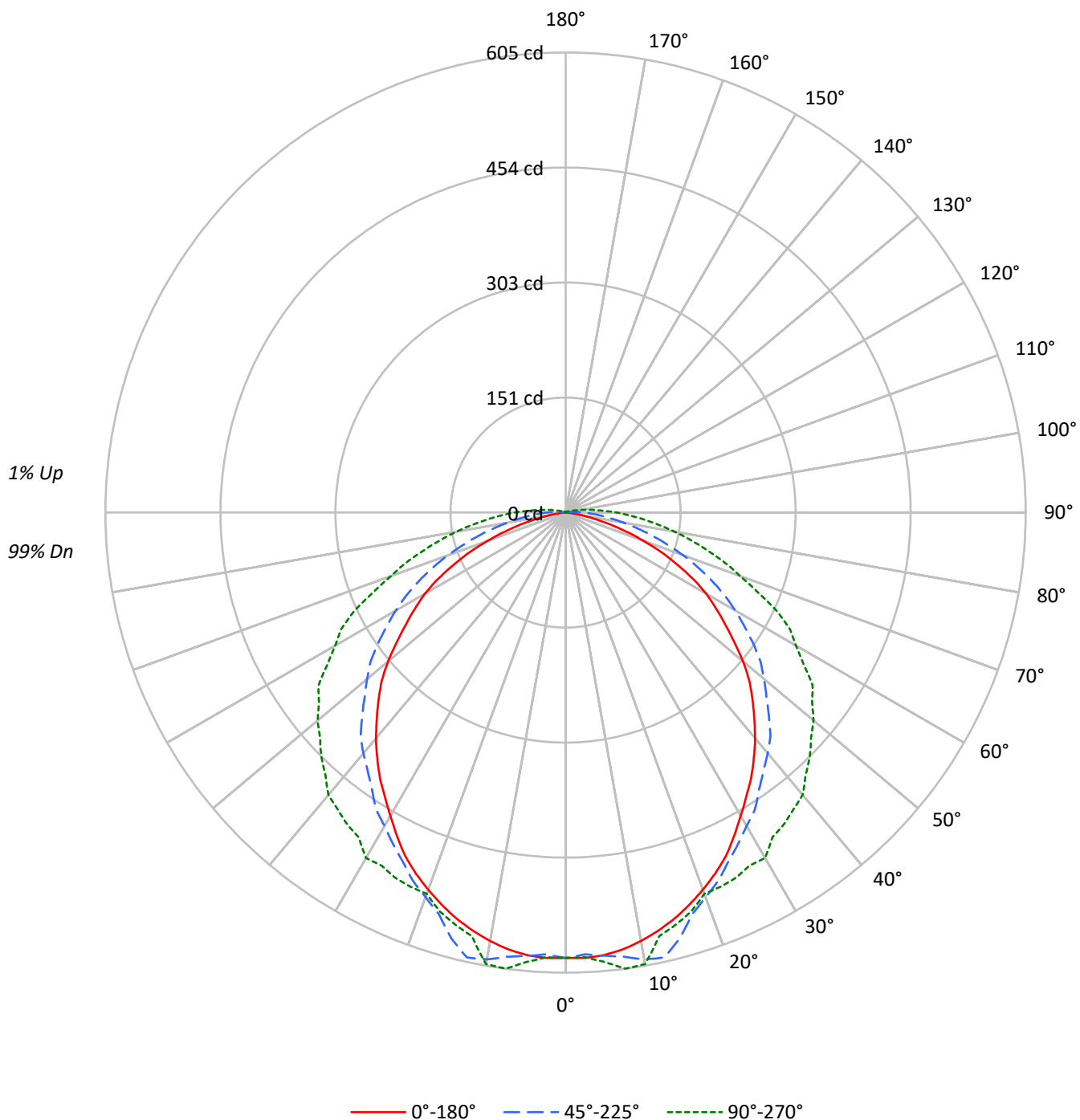
Input Watts (W): 16.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	9455	9455	9455
5°	9331	9243	9408
10°	9110	9298	9466
15°	8847	8981	8787
20°	8550	8352	8402
25°	8244	7930	8456
30°	7832	7582	8548
35°	7510	7251	8397
40°	7169	6988	8449
45°	6805	6667	8297
50°	6383	6330	8234
55°	5823	5973	8228
60°	5350	5512	7877
65°	4562	4972	7627
70°	3545	4304	6839
75°	2357	3518	6244
80°	1181	2739	5606
85°	351	1959	4936

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 8297 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	56.3	3.2
10°-20°	160.3	9.1
20°-30°	238.5	13.5
30°-40°	286.6	16.2
40°-50°	301.7	17.1
50°-60°	279.9	15.9
60°-70°	221.3	12.5
70°-80°	135.2	7.7
80°-90°	58.9	3.3
90°-100°	18.3	1.0
100°-110°	4.1	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°	455.0	25.8
0°-40°	741.6	42.0
0°-60°	1323.3	75.0
0°-90°	1738.7	98.6
90°-120°	24.1	1.4
90°-150°	25.2	1.4
90°-180°	25.0	1.4
0°-180°	1764.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	586	586	586	586	586	
5°	584	583	585	592	593	55
15°	553	574	580	560	561	156
25°	499	531	506	522	530	229
35°	426	437	444	484	501	266
45°	348	349	378	438	454	268
55°	256	260	302	368	397	230
65°	162	167	212	281	307	161
75°	61	81	118	182	194	67
85°	6	19	46	90	103	8
90°	0	6	24	57	67	0
95°	0	1	11	31	38	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°	585.6	585.6	585.6	585.6	585.6
2.5°	586.3	584.7	581.5	584.6	585.4
5°	584.1	582.9	585.0	591.5	593.2
7.5°	579.2	583.8	589.1	601.1	604.9
10°	572.0	580.5	596.6	606.8	602.8
12.5°	563.1	577.7	599.3	579.5	570.3
15°	552.9	574.1	579.7	560.5	560.9
17.5°	540.8	571.1	553.8	553.3	549.9
20°	527.8	561.1	538.2	537.2	533.5
22.5°	513.9	547.9	524.4	522.5	532.5
25°	498.7	530.6	506.3	521.5	530.0
27.5°	479.7	507.9	491.3	512.8	523.4
30°	460.5	484.5	475.9	505.9	524.7
32.5°	442.5	460.1	463.3	503.2	506.3
35°	425.5	437.3	443.8	484.2	500.6
37.5°	406.7	410.0	427.4	476.2	492.0
40°	387.7	385.6	413.5	463.1	485.0
42.5°	367.1	366.4	398.9	456.5	467.5
45°	347.7	349.3	378.0	437.9	454.2
47.5°	327.8	329.8	358.2	417.5	437.8
50°	304.6	307.3	340.5	399.4	425.5
52.5°	279.6	284.6	323.4	382.2	408.5
55°	256.1	260.3	301.5	367.5	396.7
57.5°	234.6	237.1	279.0	349.0	371.1
60°	213.5	214.1	257.8	328.5	349.6
62.5°	189.3	190.4	235.9	304.3	332.6
65°	162.1	167.2	212.4	281.1	306.7
67.5°	136.7	145.6	188.5	259.9	273.3
70°	109.5	124.6	165.0	235.0	244.4
72.5°	84.6	102.3	140.9	207.1	220.3
75°	61.3	81.2	118.4	182.0	193.5
77.5°	41.3	61.5	97.5	154.4	169.5
80°	24.7	45.0	78.7	128.7	145.8
82.5°	12.6	30.2	61.1	107.9	123.2
85°	5.5	19.1	46.2	89.6	102.8
87.5°	1.6	10.9	34.0	72.4	83.6
90°	0.1	5.7	24.2	56.8	66.9
92.5°	0.1	2.7	17.1	42.9	50.7
95°	0.1	1.4	10.6	31.1	38.1
97.5°	0.1	0.8	6.4	22.1	27.9
100°	0.1	0.7	3.8	14.7	19.9
102.5°	0.1	0.8	2.6	9.3	13.0
105°	0.1	0.8	2.1	6.1	8.6
107.5°	0.2	0.8	1.9	4.5	6.0
110°	0.1	0.7	2.0	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	2.7	2.9
117.5°	0.2	0.4	1.3	2.7	2.9
120°	0.2	0.2	1.1	2.6	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	1.4	1.9
130°	0.2	0.2	0.5	1.1	1.4
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)