

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: P517815

Luminaire Tested: HVL8-1-LD4-2STD-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: P517815
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-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1559.0 lumens
Efficiency: N/A
Efficacy: 95.6 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

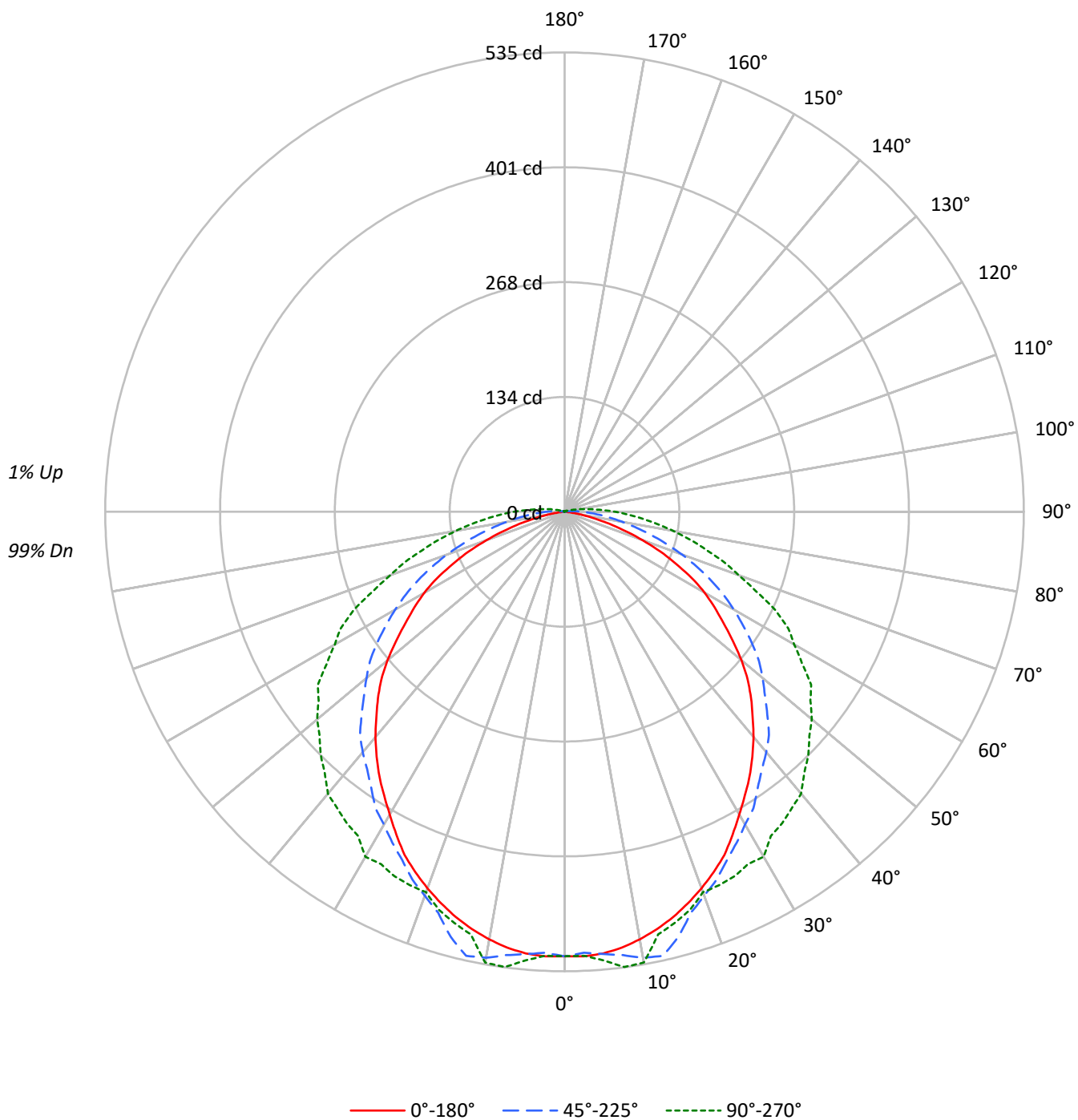
Input Watts (W): 16.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		101
1	108	103	98	94	105	100	96	92	96	92	89		91	89	86		87
2	98	89	82	76	95	87	80	75	83	78	73		80	75	71		76
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		67
4	81	69	60	53	79	67	59	52	65	57	51		62	56	51		60
5	75	61	52	45	72	60	51	45	58	50	44		56	49	44		54
6	69	55	46	39	67	54	46	39	52	45	39		50	44	38		49
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		44
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		41
9	55	42	34	28	54	41	33	28	40	33	28		39	32	27		38
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		35

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8355	8355	8355
5°	8246	8169	8316
10°	8051	8218	8366
15°	7818	7937	7766
20°	7557	7382	7426
25°	7286	7009	7473
30°	6922	6701	7554
35°	6636	6410	7421
40°	6335	6176	7467
45°	6014	5892	7332
50°	5641	5596	7276
55°	5145	5280	7272
60°	4728	4870	6963
65°	4033	4396	6739
70°	3134	3803	6044
75°	2084	3111	5518
80°	1042	2423	4953
85°	306	1730	4365

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 7332 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	49.7	3.2
10°-20°	141.6	9.1
20°-30°	210.7	13.5
30°-40°	253.3	16.2
40°-50°	266.6	17.1
50°-60°	247.4	15.9
60°-70°	195.6	12.5
70°-80°	119.5	7.7
80°-90°	52.1	3.3
90°-100°	16.2	1.0
100°-110°	3.6	0.2
110°-120°	1.5	0.1
120°-130°	0.8	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°	402.1	25.8
0°-40°	655.4	42.0
0°-60°	1169.5	75.0
0°-90°	1536.6	98.6
90°-120°	21.3	1.4
90°-150°	22.3	1.4
90°-180°	22.0	1.4
0°-180°	1559.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	518	518	518	518	518	
5°	516	515	517	523	524	49
15°	489	507	512	495	496	138
25°	441	469	448	461	468	202
35°	376	386	392	428	442	235
45°	307	309	334	387	401	237
55°	226	230	266	325	351	203
65°	143	148	188	248	271	142
75°	54	72	105	161	171	59
85°	5	17	41	79	91	7
90°	0	5	21	50	59	0
95°	0	1	9	28	34	0
105°	0	1	2	5	8	0
115°	0	0	2	2	2	0
125°	0	0	1	2	2	0
135°	0	0	0	0	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°	517.5	517.5	517.5	517.5	517.5
2.5°	518.1	516.8	513.9	516.7	517.4
5°	516.2	515.2	517.0	522.8	524.3
7.5°	511.9	515.9	520.7	531.2	534.6
10°	505.5	513.1	527.3	536.3	532.8
12.5°	497.7	510.5	529.6	512.1	504.0
15°	488.6	507.4	512.3	495.4	495.7
17.5°	478.0	504.7	489.5	489.0	486.0
20°	466.5	495.9	475.7	474.8	471.5
22.5°	454.1	484.2	463.4	461.7	470.6
25°	440.8	468.9	447.5	460.9	468.4
27.5°	424.0	448.9	434.2	453.2	462.6
30°	407.0	428.2	420.6	447.1	463.7
32.5°	391.1	406.6	409.4	444.8	447.5
35°	376.0	386.5	392.3	427.9	442.4
37.5°	359.5	362.3	377.7	420.8	434.9
40°	342.6	340.8	365.5	409.2	428.6
42.5°	324.5	323.8	352.5	403.4	413.1
45°	307.3	308.7	334.1	387.0	401.4
47.5°	289.7	291.5	316.6	369.0	386.9
50°	269.2	271.6	301.0	352.9	376.0
52.5°	247.1	251.5	285.8	337.8	361.1
55°	226.3	230.0	266.5	324.8	350.6
57.5°	207.4	209.6	246.6	308.5	328.0
60°	188.7	189.2	227.8	290.3	309.0
62.5°	167.3	168.2	208.5	268.9	293.9
65°	143.3	147.8	187.8	248.5	271.0
67.5°	120.8	128.7	166.6	229.7	241.5
70°	96.8	110.2	145.8	207.7	216.0
72.5°	74.7	90.4	124.5	183.0	194.7
75°	54.2	71.8	104.7	160.9	171.0
77.5°	36.5	54.4	86.1	136.4	149.8
80°	21.8	39.7	69.6	113.7	128.8
82.5°	11.2	26.7	54.0	95.4	108.9
85°	4.8	16.9	40.8	79.2	90.9
87.5°	1.4	9.6	30.0	64.0	73.9
90°	0.1	5.1	21.4	50.2	59.1
92.5°	0.1	2.4	15.1	38.0	44.8
95°	0.1	1.3	9.4	27.5	33.6
97.5°	0.1	0.7	5.7	19.5	24.7
100°	0.1	0.6	3.4	13.0	17.6
102.5°	0.1	0.7	2.3	8.2	11.5
105°	0.1	0.7	1.9	5.4	7.6
107.5°	0.2	0.7	1.7	4.0	5.3
110°	0.1	0.6	1.8	3.1	4.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.5	1.7	2.5	3.1
115°	0.1	0.4	1.5	2.4	2.5
117.5°	0.2	0.3	1.2	2.4	2.5
120°	0.2	0.2	0.9	2.3	2.6
122.5°	0.2	0.2	0.7	2.1	2.5
125°	0.1	0.2	0.6	1.6	2.2
127.5°	0.2	0.2	0.5	1.3	1.7
130°	0.2	0.2	0.4	0.9	1.3
132.5°	0.2	0.2	0.3	0.7	0.9
135°	0.2	0.2	0.2	0.5	0.7
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)