

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: P517863

Luminaire Tested: HVL8-1-LD4-3STD-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: P517863
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-3STD-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: 2459.0 lumens
Efficiency: N/A
Efficacy: 102.9 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.36
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

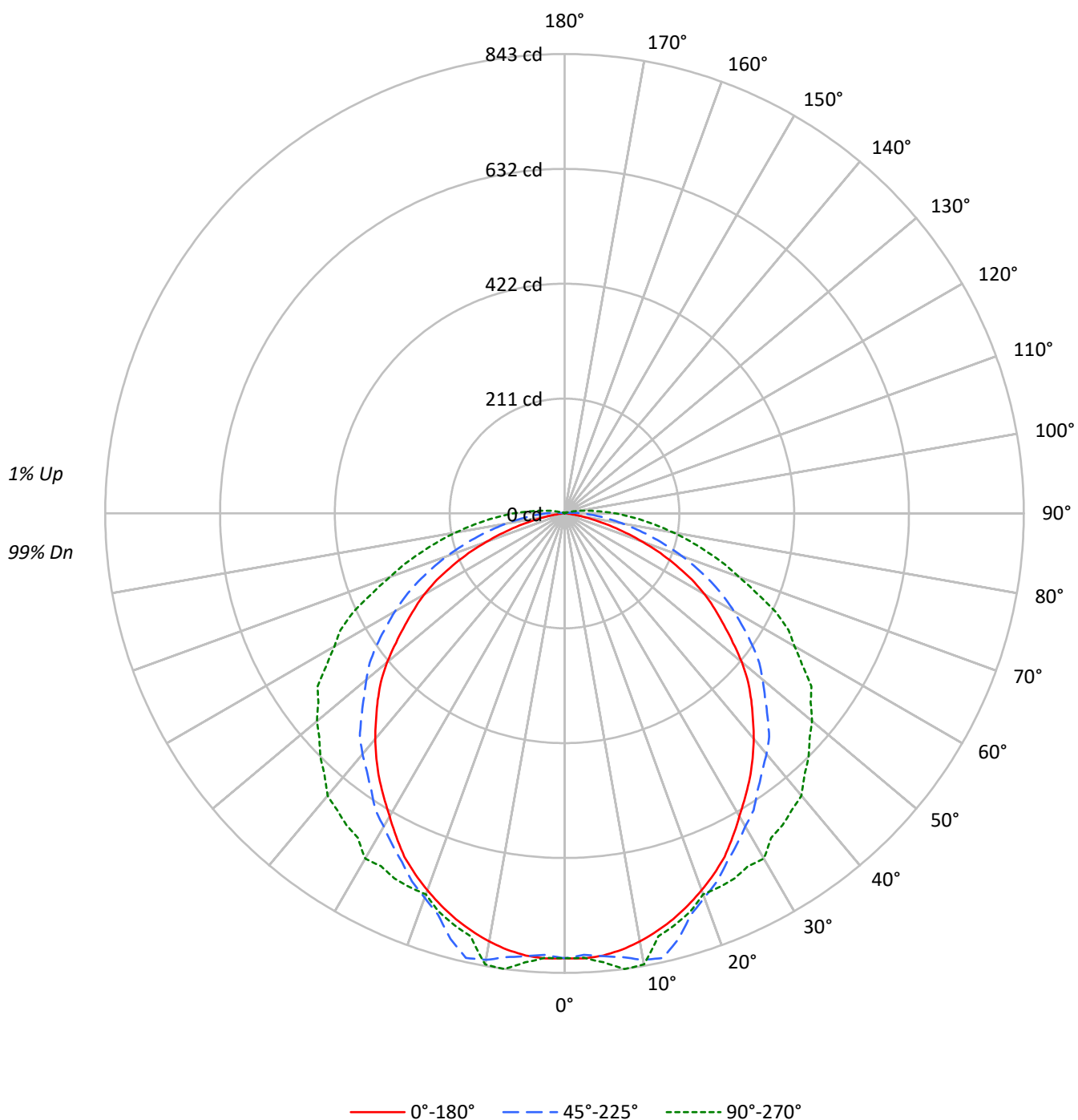
Input Watts (W): 23.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	13180	13180	13180
5°	13008	12883	13115
10°	12698	12962	13196
15°	12332	12519	12248
20°	11919	11641	11714
25°	11492	11055	11787
30°	10918	10570	11917
35°	10468	10109	11706
40°	9992	9742	11779
45°	9486	9293	11566
50°	8900	8825	11478
55°	8117	8327	11470
60°	7457	7682	10982
65°	6360	6932	10631
70°	4941	6000	9534
75°	3288	4905	8703
80°	1644	3818	7813
85°	485	2727	6881

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 11566 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	78.5	3.2
10°-20°	223.4	9.1
20°-30°	332.4	13.5
30°-40°	399.6	16.2
40°-50°	420.6	17.1
50°-60°	390.2	15.9
60°-70°	308.5	12.5
70°-80°	188.5	7.7
80°-90°	82.1	3.3
90°-100°	25.6	1.0
100°-110°	5.8	0.2
110°-120°	2.3	0.1
120°-130°	1.3	0.1
130°-140°	0.3	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°	634.3	25.8
0°-40°	1033.8	42.0
0°-60°	1844.6	75.0
0°-90°	2423.7	98.6
90°-120°	33.6	1.4
90°-150°	35.3	1.4
90°-180°	35.0	1.4
0°-180°	2459.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	816	816	816	816	816	
5°	814	813	815	825	827	77
15°	771	800	808	781	782	217
25°	695	740	706	727	739	319
35°	593	610	619	675	698	371
45°	485	487	527	610	633	374
55°	357	363	420	512	553	321
65°	226	233	296	392	428	224
75°	86	113	165	254	270	93
85°	8	27	64	125	143	12
90°	0	8	34	79	93	0
95°	0	2	15	43	53	0
105°	0	1	3	8	12	0
115°	0	1	2	4	4	0
125°	0	0	1	2	4	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°	816.3	816.3	816.3	816.3	816.3
2.5°	817.3	815.1	810.6	814.9	816.1
5°	814.3	812.6	815.4	824.6	826.9
7.5°	807.4	813.8	821.2	837.9	843.2
10°	797.3	809.3	831.7	845.9	840.4
12.5°	785.0	805.3	835.4	807.8	795.0
15°	770.7	800.3	808.1	781.3	781.8
17.5°	753.9	796.1	772.0	771.4	766.5
20°	735.8	782.2	750.2	748.9	743.8
22.5°	716.3	763.7	731.0	728.3	742.3
25°	695.2	739.6	705.8	727.0	738.8
27.5°	668.8	708.0	684.9	714.8	729.6
30°	642.0	675.4	663.4	705.2	731.5
32.5°	616.9	641.3	645.8	701.5	705.8
35°	593.1	609.6	618.7	674.9	697.9
37.5°	567.0	571.5	595.8	663.8	685.9
40°	540.4	537.6	576.5	645.5	676.1
42.5°	511.8	510.8	556.0	636.3	651.6
45°	484.7	486.9	526.9	610.4	633.2
47.5°	456.9	459.8	499.3	582.0	610.2
50°	424.7	428.3	474.7	556.7	593.1
52.5°	389.8	396.7	450.8	532.8	569.5
55°	357.0	362.8	420.3	512.3	553.0
57.5°	327.1	330.6	388.9	486.5	517.3
60°	297.6	298.5	359.3	457.9	487.4
62.5°	263.9	265.4	328.9	424.2	463.6
65°	226.0	233.1	296.1	391.9	427.5
67.5°	190.6	203.0	262.7	362.3	380.9
70°	152.6	173.8	230.0	327.6	340.7
72.5°	117.9	142.7	196.4	288.7	307.1
75°	85.5	113.2	165.1	253.7	269.7
77.5°	57.5	85.8	135.8	215.2	236.3
80°	34.4	62.7	109.7	179.4	203.2
82.5°	17.6	42.1	85.1	150.5	171.8
85°	7.6	26.6	64.3	124.9	143.3
87.5°	2.2	15.1	47.4	100.9	116.6
90°	0.2	8.0	33.8	79.1	93.3
92.5°	0.2	3.8	23.8	59.9	70.7
95°	0.2	2.0	14.8	43.4	53.0
97.5°	0.2	1.2	9.0	30.8	38.9
100°	0.2	1.0	5.3	20.5	27.8
102.5°	0.2	1.2	3.7	13.0	18.1
105°	0.2	1.2	3.0	8.5	12.0
107.5°	0.3	1.2	2.7	6.3	8.3
110°	0.2	1.0	2.8	4.8	6.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.8	2.7	4.0	4.8
115°	0.2	0.7	2.3	3.8	4.0
117.5°	0.3	0.5	1.8	3.8	4.0
120°	0.3	0.3	1.5	3.7	4.2
122.5°	0.3	0.3	1.2	3.3	4.0
125°	0.2	0.3	1.0	2.5	3.5
127.5°	0.3	0.3	0.8	2.0	2.7
130°	0.3	0.3	0.7	1.5	2.0
132.5°	0.3	0.3	0.5	1.2	1.5
135°	0.3	0.3	0.3	0.8	1.2
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)