

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: P517881

Luminaire Tested: HVL8-2-LD4-1HI-50-UNV-O-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: P517881
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-1HI-50-UNV-O-EDD-90
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2199.0 lumens
Efficiency: N/A
Efficacy: 102.3 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 2' x H: 0.17')
CIE Type: Direct

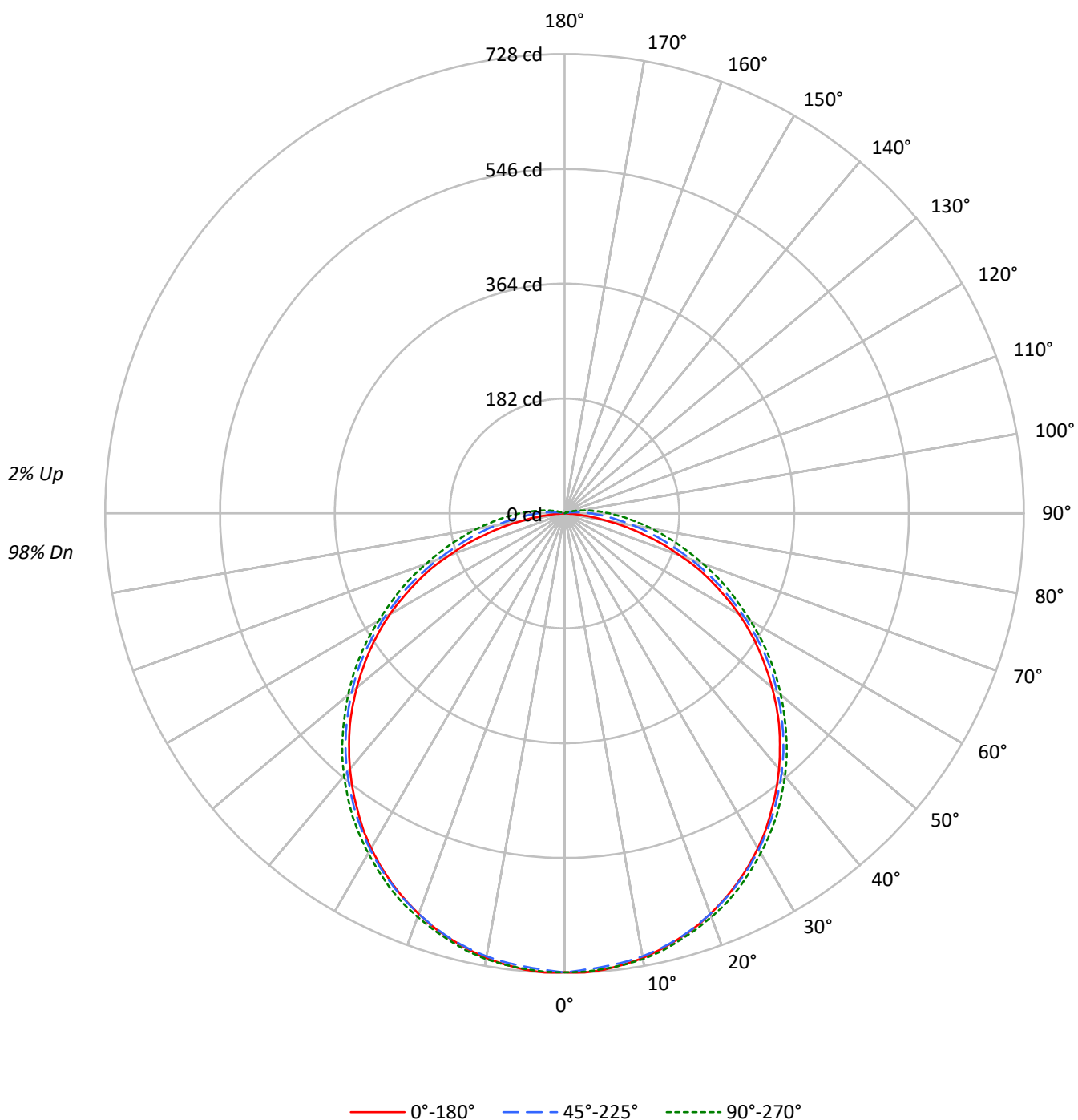
Input Watts (W): 21.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			98
1	108	102	98	94	105	100	96	92	95	92	89	91	88	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	77	73	79	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	52	62	56	51	60	54	50			47
5	75	61	52	45	72	60	52	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	40	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°	5871	5871	5871
5°	5839	5726	5746
10°	5779	5609	5631
15°	5707	5483	5492
20°	5632	5343	5359
25°	5547	5201	5222
30°	5450	5050	5067
35°	5332	4886	4913
40°	5209	4714	4734
45°	5077	4527	4541
50°	4910	4313	4333
55°	4729	4080	4104
60°	4513	3782	3836
65°	4188	3450	3571
70°	3734	3063	3263
75°	3112	2640	2982
80°	2229	2224	2726
85°	1072	1800	2482

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 5077 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	68.8	3.1
10°-20°	197.4	9.0
20°-30°	299.6	13.6
30°-40°	362.2	16.5
40°-50°	377.9	17.2
50°-60°	345.5	15.7
60°-70°	269.4	12.3
70°-80°	168.5	7.7
80°-90°	76.5	3.5
90°-100°	25.6	1.2
100°-110°	6.4	0.3
110°-120°	1.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	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°	565.8	25.7
0°-40°	928.0	42.2
0°-60°	1651.5	75.1
0°-90°	2165.9	98.5
90°-120°	33.1	1.5
90°-150°	33.1	1.5
90°-180°	33.0	1.5
0°-180°	2199.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	727	727	727	727	727	
5°	726	724	721	725	725	69
15°	698	699	698	701	701	197
25°	647	647	648	654	655	298
35°	573	575	578	583	586	358
45°	482	486	490	495	497	371
55°	376	380	388	393	396	336
65°	258	263	272	283	287	256
75°	131	139	159	178	185	139
85°	23	42	72	95	103	29
90°	0	16	42	64	71	1
95°	0	4	22	40	46	0
105°	0	0	4	11	14	0
115°	0	0	1	2	3	0
125°	0	0	0	0	0	0
135°	0	0	0	0	0	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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CATALOG NUMBER: HVL8-2-LD4-1HI-50-UNV-O-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	727.3	727.3	727.3	727.3	727.3
2.5°	728.2	727.1	723.9	727.1	727.0
5°	725.8	724.4	721.1	724.6	724.6
7.5°	721.0	720.4	717.5	721.5	721.5
10°	715.3	715.1	712.7	717.0	717.2
12.5°	707.4	708.1	705.9	710.0	710.5
15°	698.1	699.3	697.5	701.4	701.2
17.5°	688.0	688.7	687.3	691.8	691.6
20°	675.5	676.4	675.3	680.0	680.5
22.5°	661.6	662.8	662.7	667.5	668.8
25°	646.9	647.4	648.1	653.6	654.6
27.5°	630.6	631.5	632.7	637.6	638.7
30°	612.8	614.1	615.5	620.7	622.0
32.5°	593.9	595.3	597.0	603.7	604.4
35°	572.6	575.2	577.6	583.4	585.8
37.5°	551.4	554.6	556.9	563.0	564.9
40°	528.9	532.2	535.8	542.3	543.5
42.5°	505.4	509.2	513.5	519.3	521.4
45°	481.8	486.1	490.0	494.8	497.2
47.5°	456.2	460.5	465.3	470.8	472.3
50°	429.8	434.8	439.9	445.1	447.8
52.5°	402.7	408.7	414.6	420.1	422.6
55°	376.0	380.5	387.5	393.1	395.7
57.5°	348.2	352.0	358.3	367.6	369.0
60°	319.9	323.4	329.9	337.4	340.5
62.5°	288.7	293.4	300.2	309.8	312.6
65°	258.4	262.8	271.9	282.7	287.2
67.5°	229.1	230.6	242.3	253.6	260.8
70°	194.4	200.3	213.8	227.7	233.2
72.5°	164.6	170.4	185.3	201.6	208.5
75°	130.8	138.9	159.1	178.1	184.8
77.5°	101.2	110.1	135.1	154.3	162.0
80°	70.6	84.5	111.8	133.4	141.8
82.5°	44.4	61.6	90.7	113.3	120.7
85°	22.6	41.8	71.8	95.0	103.4
87.5°	6.0	27.1	55.9	78.0	86.6
90°	0.2	15.6	42.3	63.6	71.3
92.5°	0.2	8.7	31.5	50.6	58.5
95°	0.2	4.1	21.9	39.8	45.9
97.5°	0.2	1.7	15.1	30.0	36.2
100°	0.2	0.9	9.6	21.8	27.1
102.5°	0.3	0.5	6.0	15.6	19.9
105°	0.3	0.5	3.6	10.6	14.2
107.5°	0.3	0.5	2.1	7.2	9.8
110°	0.5	0.5	1.2	4.5	6.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.5	0.5	0.7	2.9	4.3
115°	0.5	0.5	0.7	1.9	2.7
117.5°	0.0	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0	0.0
122.5°	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0
127.5°	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0
132.5°	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0
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)