

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: P517861

Luminaire Tested: HVL8-1-LD4-3STD-40-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: P517861
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-3STD-40-UNV-O-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2517.0 lumens
Efficiency: N/A
Efficacy: 105.3 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

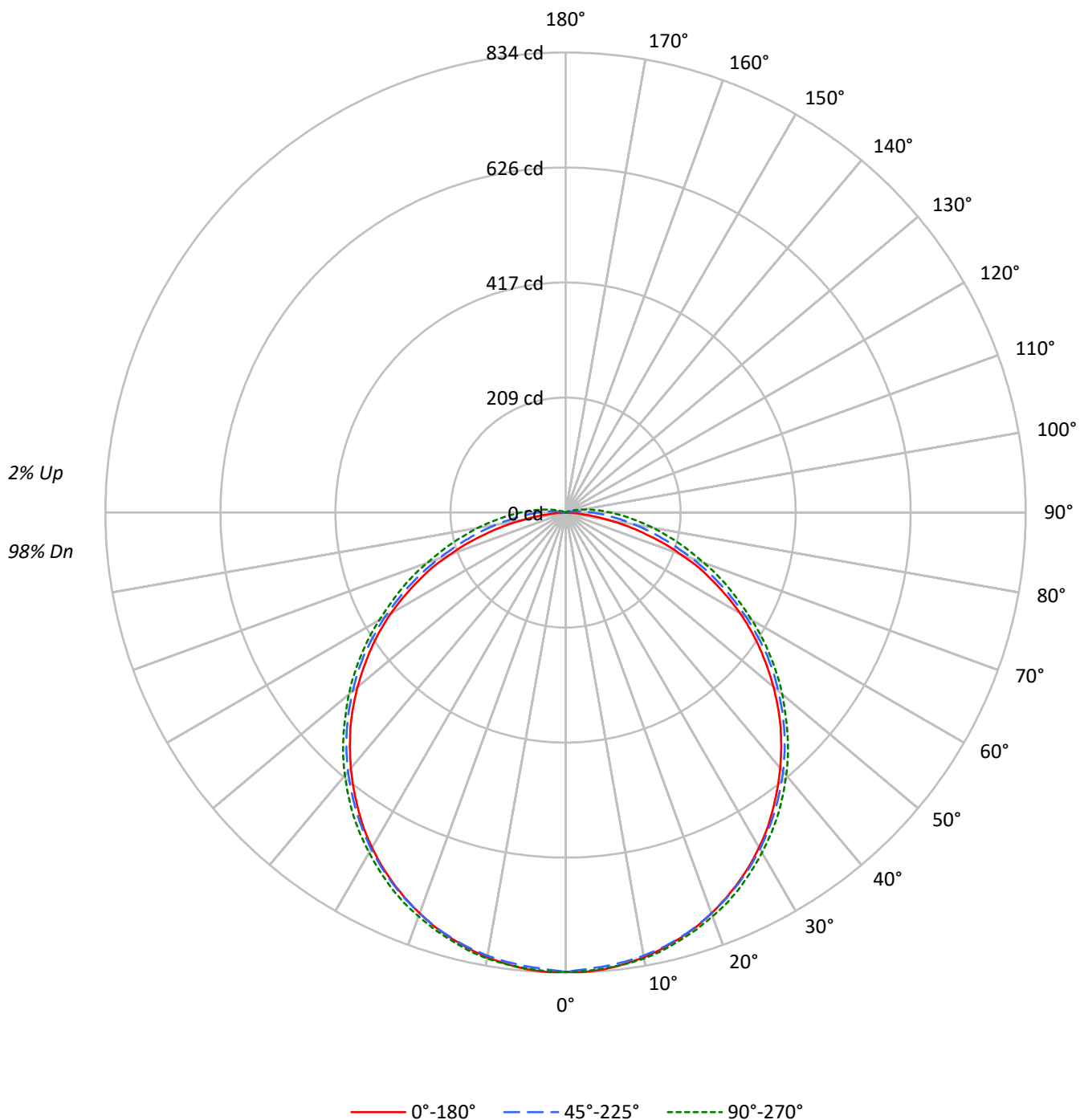
Input Watts (W): 23.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			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°	13441	13441	13441
5°	13270	13041	13153
10°	13039	12714	12890
15°	12786	12367	12573
20°	12525	11995	12267
25°	12239	11619	11955
30°	11929	11225	11600
35°	11570	10802	11248
40°	11194	10364	10838
45°	10792	9892	10395
50°	10310	9362	9920
55°	9786	8786	9394
60°	9176	8073	8781
65°	8322	7285	8174
70°	7204	6383	7469
75°	5757	5410	6828
80°	3867	4455	6241
85°	1651	3486	5680

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 10792 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	78.8	3.1
10°-20°	226.0	9.0
20°-30°	342.9	13.6
30°-40°	414.6	16.5
40°-50°	432.6	17.2
50°-60°	395.5	15.7
60°-70°	308.3	12.2
70°-80°	192.9	7.7
80°-90°	87.6	3.5
90°-100°	29.4	1.2
100°-110°	7.4	0.3
110°-120°	1.2	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°	647.6	25.7
0°-40°	1062.2	42.2
0°-60°	1890.3	75.1
0°-90°	2479.1	98.5
90°-120°	37.9	1.5
90°-150°	37.9	1.5
90°-180°	38.0	1.5
0°-180°	2517.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	832	832	832	832	832	
5°	831	829	825	829	829	79
15°	799	800	798	803	803	226
25°	740	741	742	748	749	341
35°	656	658	661	668	671	410
45°	551	556	561	566	569	425
55°	430	436	444	450	453	385
65°	296	301	311	324	329	293
75°	150	159	182	204	212	160
85°	26	48	82	109	118	33
90°	0	18	48	73	82	1
95°	0	5	25	46	53	0
105°	0	1	4	12	16	0
115°	1	1	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

TEST NUMBER: P517861

CATALOG NUMBER: HVL8-1-LD4-3STD-40-UNV-O-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	832.5	832.5	832.5	832.5	832.5
2.5°	833.5	832.3	828.5	832.3	832.1
5°	830.7	829.1	825.4	829.3	829.3
7.5°	825.2	824.6	821.3	825.8	825.8
10°	818.7	818.5	815.8	820.7	820.9
12.5°	809.7	810.5	807.9	812.7	813.2
15°	799.1	800.5	798.3	802.8	802.6
17.5°	787.5	788.3	786.7	791.8	791.7
20°	773.2	774.2	773.0	778.3	778.9
22.5°	757.3	758.7	758.5	764.0	765.6
25°	740.4	741.0	741.8	748.1	749.3
27.5°	721.8	722.8	724.1	729.8	731.0
30°	701.4	702.9	704.5	710.4	712.0
32.5°	679.8	681.4	683.3	691.0	691.8
35°	655.5	658.4	661.1	667.8	670.6
37.5°	631.1	634.9	637.4	644.5	646.6
40°	605.4	609.1	613.3	620.7	622.1
42.5°	578.5	582.8	587.8	594.4	596.8
45°	551.4	556.4	560.9	566.4	569.1
47.5°	522.2	527.1	532.6	538.9	540.7
50°	492.0	497.7	503.6	509.5	512.6
52.5°	461.0	467.8	474.5	480.8	483.7
55°	430.4	435.5	443.5	450.0	452.9
57.5°	398.6	402.9	410.2	420.7	422.3
60°	366.2	370.1	377.6	386.2	389.7
62.5°	330.5	335.8	343.6	354.6	357.8
65°	295.7	300.8	311.2	323.6	328.7
67.5°	262.2	263.9	277.3	290.2	298.5
70°	222.5	229.2	244.7	260.6	266.9
72.5°	188.4	195.1	212.1	230.8	238.6
75°	149.7	159.0	182.1	203.9	211.6
77.5°	115.8	126.0	154.6	176.6	185.5
80°	80.9	96.7	128.0	152.7	162.3
82.5°	50.8	70.5	103.8	129.7	138.2
85°	25.9	47.9	82.2	108.7	118.3
87.5°	6.9	31.0	64.0	89.3	99.1
90°	0.2	17.9	48.5	72.8	81.6
92.5°	0.2	10.0	36.1	57.9	66.9
95°	0.2	4.7	25.1	45.5	52.6
97.5°	0.2	2.0	17.3	34.3	41.4
100°	0.2	1.0	11.0	24.9	31.0
102.5°	0.4	0.6	6.9	17.9	22.8
105°	0.4	0.6	4.1	12.2	16.3
107.5°	0.4	0.6	2.4	8.2	11.2
110°	0.6	0.6	1.4	5.1	7.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.6	0.6	0.8	3.3	4.9
115°	0.6	0.6	0.8	2.2	3.1
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)