

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: P517927

Luminaire Tested: HVL8-2-LD4-2HI-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: P517927
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-2HI-50-UNV-C-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: 4013.0 lumens
Efficiency: N/A
Efficacy: 93.1 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 2' x H: 0.17')
CIE Type: Direct

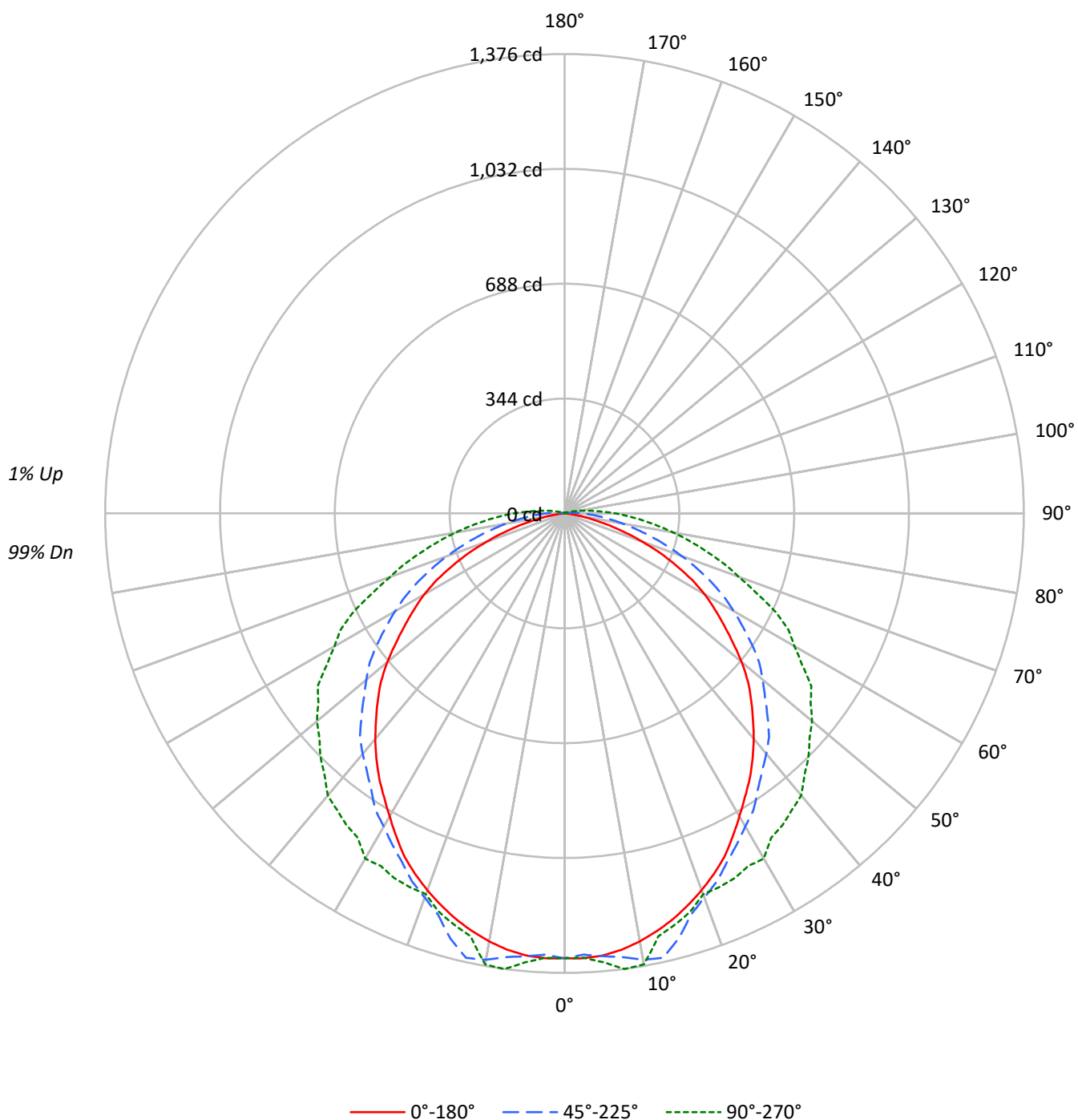
Input Watts (W): 43.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	10754	10754	10754
5°	10690	10566	10702
10°	10512	10682	10767
15°	10282	10367	9994
20°	10012	9688	9558
25°	9727	9244	9617
30°	9318	8884	9724
35°	9013	8541	9552
40°	8686	8277	9611
45°	8336	7944	9437
50°	7917	7596	9365
55°	7328	7223	9360
60°	6853	6723	8961
65°	5977	6132	8676
70°	4784	5376	7779
75°	3319	4472	7101
80°	1774	3563	6375
85°	593	2632	5616

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 9437 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	128.0	3.2
10°-20°	364.6	9.1
20°-30°	542.5	13.5
30°-40°	652.1	16.2
40°-50°	686.3	17.1
50°-60°	636.8	15.9
60°-70°	503.5	12.5
70°-80°	307.6	7.7
80°-90°	134.0	3.3
90°-100°	41.7	1.0
100°-110°	9.4	0.2
110°-120°	3.8	0.1
120°-130°	2.1	0.1
130°-140°	0.6	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°	1035.1	25.8
0°-40°	1687.2	42.0
0°-60°	3010.3	75.0
0°-90°	3955.4	98.6
90°-120°	54.9	1.4
90°-150°	57.5	1.4
90°-180°	58.0	1.4
0°-180°	4013.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1332	1332	1332	1332	1332	
5°	1329	1326	1331	1346	1350	126
15°	1258	1306	1319	1275	1276	354
25°	1134	1207	1152	1186	1206	521
35°	968	995	1010	1101	1139	605
45°	791	794	860	996	1033	610
55°	583	592	686	836	902	523
65°	369	380	483	640	698	365
75°	140	185	270	414	440	152
85°	12	43	105	204	234	19
90°	0	13	55	129	152	1
95°	0	3	24	71	87	0
105°	0	2	5	14	20	0
115°	0	1	4	6	6	0
125°	0	0	2	4	6	0
135°	0	0	0	1	2	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°	1332.1	1332.1	1332.1	1332.1	1332.1
2.5°	1333.7	1330.2	1322.9	1329.9	1331.8
5°	1328.8	1326.1	1330.7	1345.7	1349.5
7.5°	1317.7	1328.0	1340.2	1367.4	1376.1
10°	1301.2	1320.7	1357.3	1380.4	1371.4
12.5°	1281.1	1314.2	1363.3	1318.3	1297.4
15°	1257.7	1306.0	1318.8	1275.1	1275.9
17.5°	1230.3	1299.3	1259.9	1258.8	1251.0
20°	1200.8	1276.5	1224.4	1222.2	1213.8
22.5°	1169.0	1246.3	1192.9	1188.5	1211.3
25°	1134.5	1207.0	1151.9	1186.4	1205.6
27.5°	1091.4	1155.4	1117.7	1166.6	1190.7
30°	1047.7	1102.3	1082.7	1150.8	1193.7
32.5°	1006.7	1046.6	1054.0	1144.9	1151.9
35°	967.9	994.8	1009.7	1101.4	1138.9
37.5°	925.3	932.7	972.3	1083.3	1119.4
40°	881.9	877.3	940.8	1053.4	1103.3
42.5°	835.2	833.6	907.4	1038.5	1063.5
45°	791.0	794.5	859.9	996.2	1033.3
47.5°	745.7	750.3	814.9	949.8	995.9
50°	693.0	699.0	774.7	908.5	967.9
52.5°	636.1	647.5	735.7	869.4	929.4
55°	582.6	592.1	686.0	836.1	902.5
57.5°	533.8	539.5	634.7	794.0	844.2
60°	485.7	487.1	586.4	747.3	795.4
62.5°	430.6	433.1	536.7	692.2	756.5
65°	368.8	380.4	483.3	639.6	697.7
67.5°	311.0	331.3	428.7	591.3	621.7
70°	249.1	283.6	375.3	534.6	556.0
72.5°	192.4	232.8	320.5	471.1	501.2
75°	139.5	184.8	269.5	414.1	440.1
77.5°	93.9	140.0	221.7	351.1	385.6
80°	56.2	102.3	179.1	292.8	331.6
82.5°	28.8	68.7	138.9	245.6	280.3
85°	12.5	43.4	105.0	203.8	233.9
87.5°	3.5	24.7	77.3	164.7	190.2
90°	0.3	13.0	55.1	129.2	152.2
92.5°	0.3	6.2	38.8	97.7	115.3
95°	0.3	3.3	24.2	70.8	86.6
97.5°	0.3	1.9	14.7	50.2	63.5
100°	0.3	1.6	8.7	33.4	45.3
102.5°	0.3	1.9	6.0	21.2	29.6
105°	0.3	1.9	4.9	13.8	19.5
107.5°	0.5	1.9	4.3	10.3	13.6
110°	0.3	1.6	4.6	7.9	10.6

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CATALOG NUMBER: HVL8-2-LD4-2HI-50-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.5	1.4	4.3	6.5	7.9
115°	0.3	1.1	3.8	6.2	6.5
117.5°	0.5	0.8	3.0	6.2	6.5
120°	0.5	0.5	2.4	6.0	6.8
122.5°	0.5	0.5	1.9	5.4	6.5
125°	0.3	0.5	1.6	4.1	5.7
127.5°	0.5	0.5	1.4	3.3	4.3
130°	0.5	0.5	1.1	2.4	3.3
132.5°	0.5	0.5	0.8	1.9	2.4
135°	0.5	0.5	0.5	1.4	1.9
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)