

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: P518038

Luminaire Tested: HVL8-4-LD4-1LO-40-UNV-O-EDD

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: P518038
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-1LO-40-UNV-O-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2192.0 lumens
Efficiency: N/A
Efficacy: 95.3 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

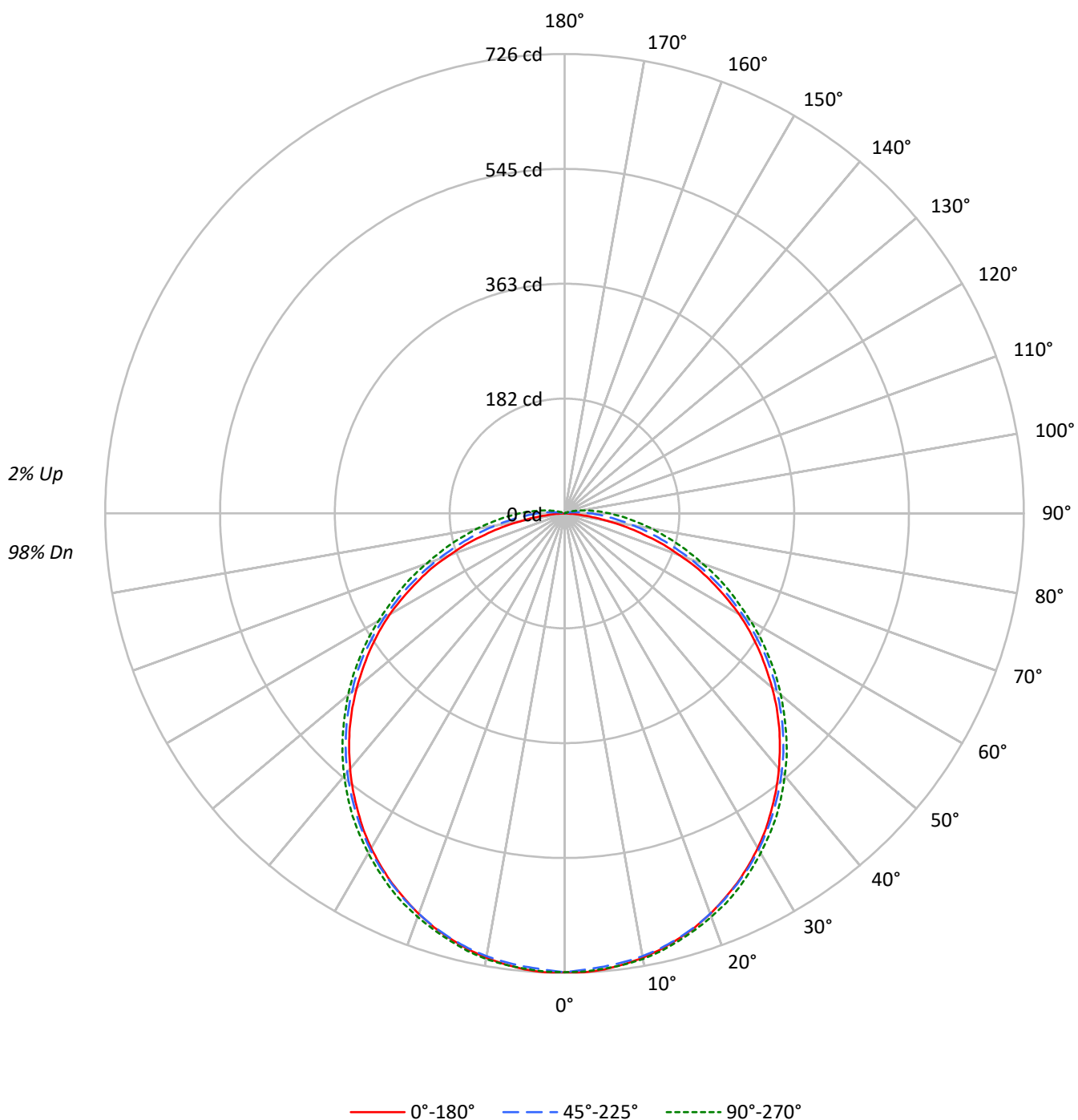
Input Watts (W): 23
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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				0
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		0
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		98
1	108	102	98	94	105	100	96	92	95	92	89		91	88	86		81
2	98	89	82	76	95	87	80	75	83	77	73		79	75	71		67
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		56
4	81	69	60	53	79	67	59	52	65	57	52		62	56	51		47
5	75	61	52	45	72	60	52	45	58	50	44		56	49	44		41
6	69	55	46	40	67	54	46	39	52	45	39		50	44	38		36
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		32
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		28
9	55	42	34	28	54	41	33	28	40	33	28		39	32	27		25
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2926	2926	2926
5°	2920	2861	2864
10°	2901	2810	2806
15°	2876	2753	2738
20°	2849	2690	2671
25°	2817	2625	2603
30°	2780	2556	2525
35°	2733	2479	2449
40°	2684	2399	2360
45°	2632	2311	2263
50°	2564	2210	2160
55°	2489	2099	2045
60°	2401	1956	1912
65°	2259	1795	1780
70°	2052	1605	1626
75°	1760	1398	1486
80°	1324	1193	1358
85°	709	988	1238

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2632 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	68.6	3.1
10°-20°	196.8	9.0
20°-30°	298.6	13.6
30°-40°	361.1	16.5
40°-50°	376.7	17.2
50°-60°	344.4	15.7
60°-70°	268.5	12.2
70°-80°	168.0	7.7
80°-90°	76.3	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°	564.0	25.7
0°-40°	925.0	42.2
0°-60°	1646.2	75.1
0°-90°	2159.0	98.5
90°-120°	33.0	1.5
90°-150°	33.0	1.5
90°-180°	33.0	1.5
0°-180°	2192.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	725	725	725	725	725	
5°	723	722	719	722	722	69
15°	696	697	695	699	699	196
25°	645	645	646	652	652	297
35°	571	573	576	582	584	357
45°	480	484	488	493	496	370
55°	375	379	386	392	394	335
65°	258	262	271	282	286	255
75°	130	138	159	178	184	139
85°	23	42	72	95	103	29
90°	0	16	42	63	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: HVL8-4-LD4-1LO-40-UNV-O-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	725.0	725.0	725.0	725.0	725.0
2.5°	725.8	724.8	721.6	724.8	724.6
5°	723.4	722.1	718.8	722.2	722.2
7.5°	718.7	718.1	715.2	719.2	719.2
10°	713.0	712.8	710.5	714.7	714.9
12.5°	705.2	705.8	703.6	707.7	708.2
15°	695.9	697.1	695.2	699.2	699.0
17.5°	685.8	686.5	685.2	689.6	689.4
20°	673.4	674.2	673.2	677.8	678.3
22.5°	659.5	660.7	660.5	665.3	666.7
25°	644.8	645.3	646.0	651.5	652.5
27.5°	628.6	629.4	630.6	635.6	636.6
30°	610.8	612.2	613.6	618.7	620.0
32.5°	592.0	593.4	595.1	601.8	602.4
35°	570.8	573.4	575.8	581.6	584.0
37.5°	549.6	552.9	555.1	561.3	563.1
40°	527.2	530.5	534.1	540.6	541.8
42.5°	503.8	507.6	511.9	517.7	519.7
45°	480.2	484.5	488.4	493.2	495.6
47.5°	454.8	459.1	463.8	469.3	470.8
50°	428.5	433.4	438.5	443.7	446.4
52.5°	401.5	407.4	413.2	418.7	421.3
55°	374.8	379.2	386.2	391.9	394.4
57.5°	347.1	350.9	357.2	366.4	367.8
60°	318.9	322.3	328.8	336.3	339.4
62.5°	287.8	292.4	299.3	308.8	311.6
65°	257.6	262.0	271.1	281.8	286.3
67.5°	228.3	229.9	241.5	252.8	259.9
70°	193.8	199.6	213.1	227.0	232.4
72.5°	164.1	169.9	184.7	201.0	207.8
75°	130.4	138.4	158.6	177.6	184.2
77.5°	100.8	109.7	134.7	153.8	161.5
80°	70.4	84.3	111.4	133.0	141.3
82.5°	44.3	61.4	90.4	113.0	120.3
85°	22.6	41.7	71.6	94.7	103.1
87.5°	6.0	27.0	55.7	77.8	86.3
90°	0.2	15.6	42.2	63.4	71.1
92.5°	0.2	8.7	31.4	50.4	58.3
95°	0.2	4.1	21.9	39.7	45.8
97.5°	0.2	1.7	15.0	29.9	36.1
100°	0.2	0.9	9.6	21.7	27.0
102.5°	0.3	0.5	6.0	15.6	19.8
105°	0.3	0.5	3.6	10.6	14.2
107.5°	0.3	0.5	2.1	7.2	9.7
110°	0.5	0.5	1.2	4.4	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)