

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: P517884

Luminaire Tested: HVL8-2-LD4-1LO-30-UNV-C-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: P517884
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-1LO-30-UNV-C-EDD
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1359.0 lumens
Efficiency: N/A
Efficacy: 118.2 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

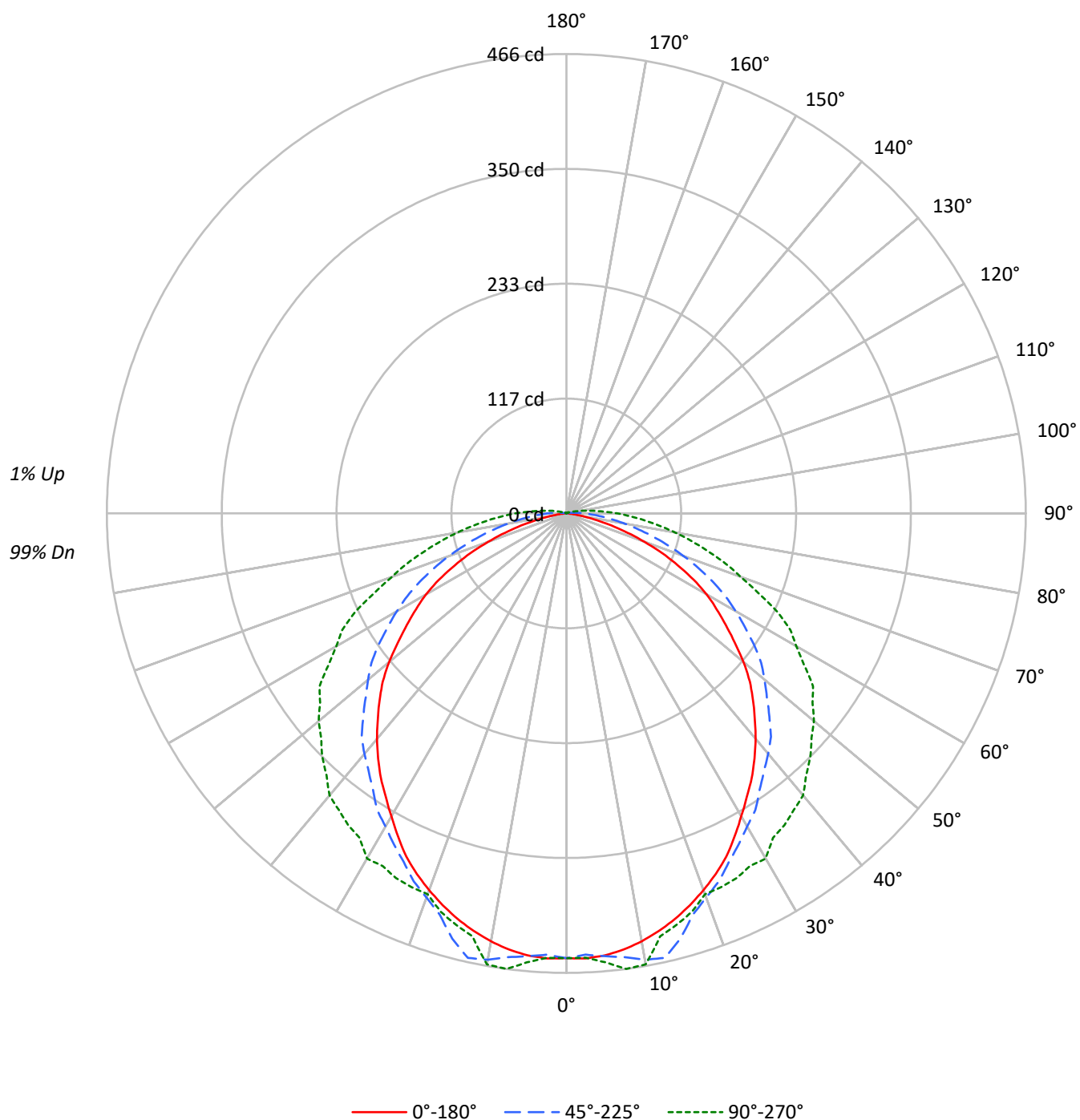
Input Watts (W): 11.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			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°	3642	3642	3642
5°	3620	3579	3624
10°	3559	3618	3646
15°	3482	3511	3385
20°	3390	3280	3236
25°	3294	3131	3257
30°	3156	3009	3293
35°	3052	2892	3235
40°	2942	2803	3254
45°	2823	2690	3196
50°	2681	2573	3172
55°	2482	2446	3169
60°	2321	2277	3034
65°	2024	2077	2938
70°	1621	1821	2635
75°	1123	1515	2406
80°	600	1208	2159
85°	199	893	1901

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 3196 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	43.4	3.2
10°-20°	123.5	9.1
20°-30°	183.7	13.5
30°-40°	220.8	16.2
40°-50°	232.4	17.1
50°-60°	215.7	15.9
60°-70°	170.5	12.5
70°-80°	104.2	7.7
80°-90°	45.4	3.3
90°-100°	14.1	1.0
100°-110°	3.2	0.2
110°-120°	1.3	0.1
120°-130°	0.7	0.1
130°-140°	0.2	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°	350.5	25.8
0°-40°	571.4	42.0
0°-60°	1019.4	75.0
0°-90°	1339.5	98.6
90°-120°	18.6	1.4
90°-150°	19.5	1.4
90°-180°	20.0	1.5
0°-180°	1359.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	451	451	451	451	451	
5°	450	449	451	456	457	43
15°	426	442	447	432	432	120
25°	384	409	390	402	408	176
35°	328	337	342	373	386	205
45°	268	269	291	337	350	207
55°	197	200	232	283	306	177
65°	125	129	164	217	236	124
75°	47	63	91	140	149	52
85°	4	15	36	69	79	7
90°	0	4	19	44	52	0
95°	0	1	8	24	29	0
105°	0	1	2	5	7	0
115°	0	0	1	2	2	0
125°	0	0	1	1	2	0
135°	0	0	0	0	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°	451.1	451.1	451.1	451.1	451.1
2.5°	451.7	450.5	448.0	450.4	451.0
5°	450.0	449.1	450.7	455.7	457.0
7.5°	446.2	449.7	453.9	463.1	466.0
10°	440.6	447.3	459.7	467.5	464.4
12.5°	433.8	445.0	461.7	446.4	439.4
15°	425.9	442.3	446.6	431.8	432.1
17.5°	416.7	440.0	426.7	426.3	423.6
20°	406.6	432.3	414.6	413.9	411.0
22.5°	395.9	422.1	404.0	402.5	410.2
25°	384.2	408.8	390.1	401.8	408.3
27.5°	369.6	391.3	378.5	395.1	403.2
30°	354.8	373.3	366.7	389.7	404.2
32.5°	340.9	354.4	356.9	387.7	390.1
35°	327.8	336.9	341.9	373.0	385.7
37.5°	313.4	315.8	329.3	366.8	379.1
40°	298.7	297.1	318.6	356.7	373.6
42.5°	282.9	282.3	307.3	351.7	360.1
45°	267.9	269.1	291.2	337.3	349.9
47.5°	252.5	254.1	276.0	321.6	337.3
50°	234.7	236.7	262.4	307.7	327.8
52.5°	215.4	219.3	249.1	294.4	314.7
55°	197.3	200.5	232.3	283.1	305.6
57.5°	180.8	182.7	214.9	268.9	285.9
60°	164.5	165.0	198.6	253.1	269.3
62.5°	145.8	146.7	181.8	234.4	256.2
65°	124.9	128.8	163.7	216.6	236.3
67.5°	105.3	112.2	145.2	200.2	210.5
70°	84.4	96.0	127.1	181.0	188.3
72.5°	65.2	78.8	108.5	159.5	169.7
75°	47.2	62.6	91.3	140.2	149.1
77.5°	31.8	47.4	75.1	118.9	130.6
80°	19.0	34.6	60.7	99.2	112.3
82.5°	9.7	23.2	47.1	83.2	94.9
85°	4.2	14.7	35.6	69.0	79.2
87.5°	1.2	8.4	26.2	55.8	64.4
90°	0.1	4.4	18.7	43.7	51.6
92.5°	0.1	2.1	13.1	33.1	39.1
95°	0.1	1.1	8.2	24.0	29.3
97.5°	0.1	0.6	5.0	17.0	21.5
100°	0.1	0.6	2.9	11.3	15.3
102.5°	0.1	0.6	2.0	7.2	10.0
105°	0.1	0.6	1.7	4.7	6.6
107.5°	0.2	0.6	1.5	3.5	4.6
110°	0.1	0.6	1.6	2.7	3.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.5	1.5	2.2	2.7
115°	0.1	0.4	1.3	2.1	2.2
117.5°	0.2	0.3	1.0	2.1	2.2
120°	0.2	0.2	0.8	2.0	2.3
122.5°	0.2	0.2	0.6	1.8	2.2
125°	0.1	0.2	0.6	1.4	1.9
127.5°	0.2	0.2	0.5	1.1	1.5
130°	0.2	0.2	0.4	0.8	1.1
132.5°	0.2	0.2	0.3	0.6	0.8
135°	0.2	0.2	0.2	0.5	0.6
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)