

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: P517888

Luminaire Tested: HVL8-2-LD4-1LO-35-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: P517888
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-1LO-35-UNV-C-EDD
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1427.0 lumens
Efficiency: N/A
Efficacy: 124.1 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

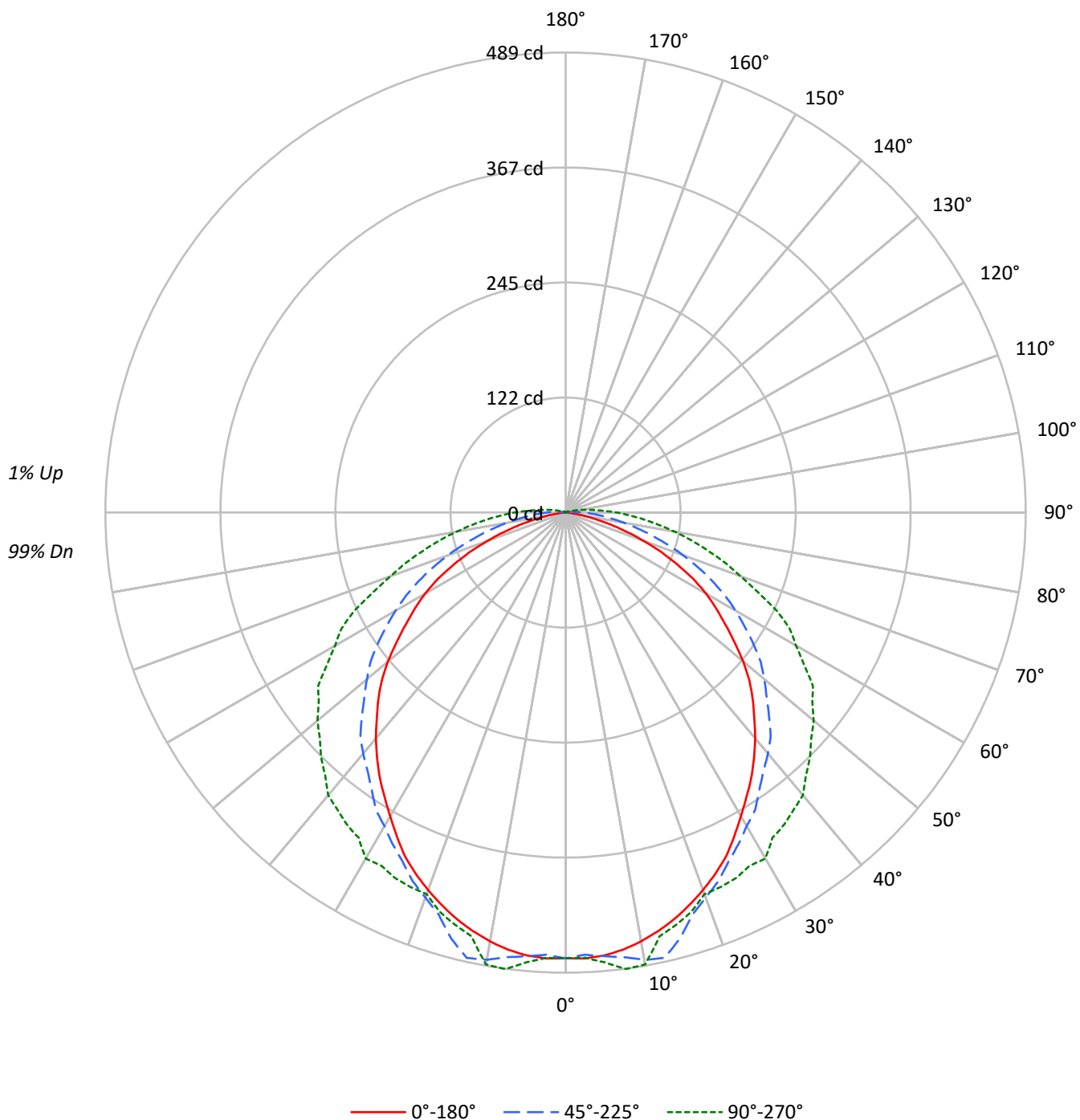
Input Watts (W): 11.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	3824	3824	3824
5°	3801	3757	3806
10°	3738	3799	3829
15°	3656	3687	3554
20°	3560	3445	3399
25°	3459	3287	3420
30°	3314	3159	3458
35°	3205	3038	3397
40°	3089	2943	3417
45°	2964	2825	3356
50°	2815	2701	3330
55°	2606	2568	3328
60°	2437	2390	3186
65°	2125	2181	3085
70°	1702	1912	2766
75°	1180	1590	2525
80°	631	1267	2267
85°	209	935	1998

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 3356 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	45.5	3.2
10°-20°	129.6	9.1
20°-30°	192.9	13.5
30°-40°	231.9	16.2
40°-50°	244.1	17.1
50°-60°	226.4	15.9
60°-70°	179.1	12.5
70°-80°	109.4	7.7
80°-90°	47.6	3.3
90°-100°	14.8	1.0
100°-110°	3.3	0.2
110°-120°	1.3	0.1
120°-130°	0.8	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°	368.1	25.8
0°-40°	599.9	42.0
0°-60°	1070.4	75.0
0°-90°	1406.5	98.6
90°-120°	19.5	1.4
90°-150°	20.5	1.4
90°-180°	20.0	1.4
0°-180°	1427.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	474	474	474	474	474	
5°	472	472	473	478	480	45
15°	447	464	469	453	454	126
25°	403	429	410	422	429	185
35°	344	354	359	392	405	215
45°	281	282	306	354	367	217
55°	207	210	244	297	321	186
65°	131	135	172	227	248	130
75°	50	66	96	147	156	54
85°	4	15	37	72	83	7
90°	0	5	20	46	54	0
95°	0	1	9	25	31	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°	473.7	473.7	473.7	473.7	473.7
2.5°	474.3	473.0	470.4	472.9	473.6
5°	472.5	471.6	473.2	478.5	479.9
7.5°	468.6	472.2	476.6	486.2	489.3
10°	462.7	469.6	482.7	490.9	487.7
12.5°	455.5	467.3	484.8	468.8	461.3
15°	447.2	464.4	469.0	453.4	453.7
17.5°	437.5	462.0	448.0	447.6	444.8
20°	427.0	453.9	435.4	434.6	431.6
22.5°	415.7	443.2	424.2	422.6	430.7
25°	403.4	429.2	409.6	421.9	428.7
27.5°	388.1	410.9	397.5	414.8	423.4
30°	372.6	392.0	385.0	409.2	424.5
32.5°	358.0	372.2	374.8	407.1	409.6
35°	344.2	353.7	359.1	391.7	405.0
37.5°	329.0	331.6	345.7	385.2	398.0
40°	313.6	312.0	334.5	374.6	392.3
42.5°	297.0	296.4	322.7	369.3	378.2
45°	281.3	282.5	305.8	354.2	367.4
47.5°	265.2	266.8	289.8	337.7	354.1
50°	246.4	248.6	275.5	323.1	344.2
52.5°	226.2	230.2	261.6	309.2	330.5
55°	207.2	210.5	243.9	297.3	320.9
57.5°	189.8	191.8	225.7	282.3	300.2
60°	172.7	173.2	208.5	265.7	282.8
62.5°	153.1	154.0	190.9	246.2	269.0
65°	131.1	135.3	171.9	227.4	248.1
67.5°	110.6	117.8	152.5	210.3	221.1
70°	88.6	100.8	133.5	190.1	197.7
72.5°	68.4	82.8	114.0	167.5	178.2
75°	49.6	65.7	95.8	147.2	156.5
77.5°	33.4	49.8	78.8	124.9	137.1
80°	20.0	36.4	63.7	104.1	117.9
82.5°	10.2	24.4	49.4	87.3	99.7
85°	4.4	15.4	37.3	72.5	83.2
87.5°	1.3	8.8	27.5	58.6	67.6
90°	0.1	4.6	19.6	45.9	54.1
92.5°	0.1	2.2	13.8	34.7	41.0
95°	0.1	1.2	8.6	25.2	30.8
97.5°	0.1	0.7	5.2	17.9	22.6
100°	0.1	0.6	3.1	11.9	16.1
102.5°	0.1	0.7	2.1	7.5	10.5
105°	0.1	0.7	1.7	4.9	6.9
107.5°	0.2	0.7	1.5	3.7	4.8
110°	0.1	0.6	1.6	2.8	3.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.5	1.5	2.3	2.8
115°	0.1	0.4	1.4	2.2	2.3
117.5°	0.2	0.3	1.1	2.2	2.3
120°	0.2	0.2	0.9	2.1	2.4
122.5°	0.2	0.2	0.7	1.9	2.3
125°	0.1	0.2	0.6	1.4	2.0
127.5°	0.2	0.2	0.5	1.2	1.5
130°	0.2	0.2	0.4	0.9	1.2
132.5°	0.2	0.2	0.3	0.7	0.9
135°	0.2	0.2	0.2	0.5	0.7
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)