

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: P517184

Luminaire Tested: HVL12-1-LD4-1STD-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: P517184
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-1STD-35-UNV-C-EDD
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 959.0 lumens
Efficiency: N/A
Efficacy: 114.2 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 1' x H: 0.17')
CIE Type: Direct

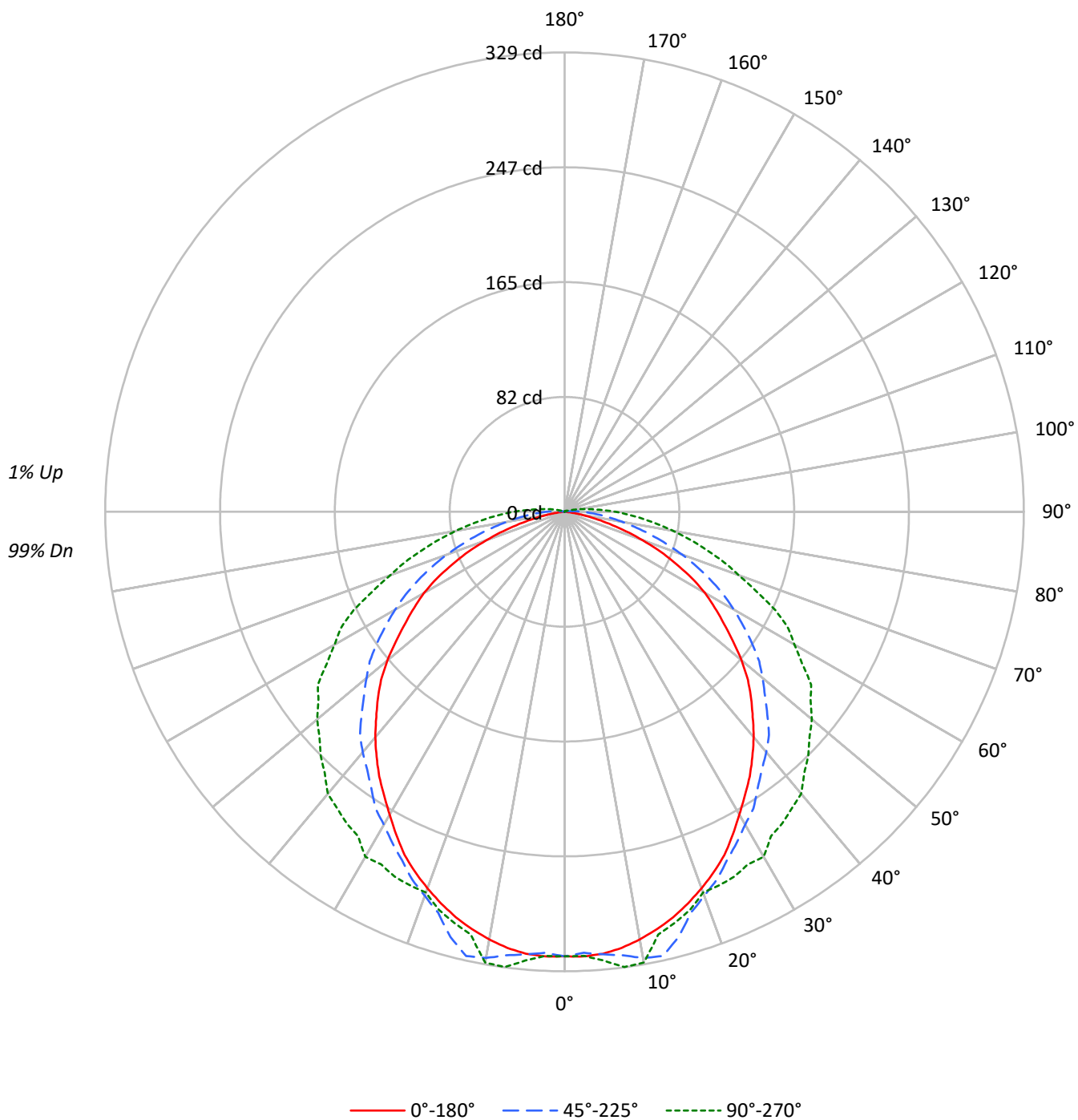
Input Watts (W): 8.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	44	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°	3426	3426	3426
5°	3382	3367	3435
10°	3301	3404	3479
15°	3207	3304	3252
20°	3098	3087	3133
25°	2988	2946	3175
30°	2839	2830	3235
35°	2722	2722	3203
40°	2599	2637	3251
45°	2466	2531	3221
50°	2313	2420	3231
55°	2110	2301	3270
60°	1939	2142	3176
65°	1653	1954	3128
70°	1284	1713	2869
75°	854	1425	2697
80°	427	1135	2524
85°	128	839	2376

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 3270 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	30.6	3.2
10°-20°	87.1	9.1
20°-30°	129.6	13.5
30°-40°	155.8	16.2
40°-50°	164.0	17.1
50°-60°	152.2	15.9
60°-70°	120.3	12.5
70°-80°	73.5	7.7
80°-90°	32.0	3.3
90°-100°	10.0	1.0
100°-110°	2.3	0.2
110°-120°	0.9	0.1
120°-130°	0.5	0.1
130°-140°	0.1	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°	247.4	25.8
0°-40°	403.2	42.0
0°-60°	719.4	75.0
0°-90°	945.2	98.6
90°-120°	13.1	1.4
90°-150°	13.8	1.4
90°-180°	14.0	1.5
0°-180°	959.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	318	318	318	318	318	
5°	318	317	318	322	322	30
15°	301	312	315	305	305	85
25°	271	288	275	284	288	124
35°	231	238	241	263	272	145
45°	189	190	206	238	247	146
55°	139	142	164	200	216	125
65°	88	91	116	153	167	87
75°	33	44	64	99	105	36
85°	3	10	25	49	56	5
90°	0	3	13	31	36	0
95°	0	1	6	17	21	0
105°	0	0	1	3	5	0
115°	0	0	1	2	2	0
125°	0	0	0	1	1	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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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	318.3	318.3	318.3	318.3	318.3
2.5°	318.7	317.9	316.1	317.8	318.3
5°	317.6	316.9	318.0	321.6	322.5
7.5°	314.9	317.4	320.3	326.8	328.8
10°	310.9	315.6	324.4	329.9	327.7
12.5°	306.1	314.1	325.8	315.0	310.0
15°	300.6	312.1	315.2	304.7	304.9
17.5°	294.0	310.5	301.1	300.8	298.9
20°	286.9	305.0	292.6	292.1	290.1
22.5°	279.4	297.8	285.1	284.0	289.5
25°	271.1	288.4	275.3	283.5	288.1
27.5°	260.8	276.1	267.1	278.8	284.6
30°	250.4	263.4	258.7	275.0	285.3
32.5°	240.6	250.1	251.9	273.6	275.3
35°	231.3	237.7	241.3	263.2	272.2
37.5°	221.1	222.9	232.3	258.9	267.5
40°	210.8	209.7	224.8	251.7	263.7
42.5°	199.6	199.2	216.8	248.2	254.1
45°	189.0	189.9	205.5	238.1	246.9
47.5°	178.2	179.3	194.7	227.0	238.0
50°	165.6	167.0	185.1	217.1	231.3
52.5°	152.0	154.7	175.8	207.8	222.1
55°	139.2	141.5	163.9	199.8	215.7
57.5°	127.6	128.9	151.7	189.7	201.7
60°	116.1	116.4	140.1	178.6	190.1
62.5°	102.9	103.5	128.3	165.4	180.8
65°	88.1	90.9	115.5	152.8	166.7
67.5°	74.3	79.2	102.5	141.3	148.6
70°	59.5	67.8	89.7	127.7	132.9
72.5°	46.0	55.6	76.6	112.6	119.8
75°	33.3	44.2	64.4	99.0	105.2
77.5°	22.4	33.5	53.0	83.9	92.1
80°	13.4	24.4	42.8	70.0	79.2
82.5°	6.9	16.4	33.2	58.7	67.0
85°	3.0	10.4	25.1	48.7	55.9
87.5°	0.8	5.9	18.5	39.4	45.5
90°	0.1	3.1	13.2	30.9	36.4
92.5°	0.1	1.5	9.3	23.3	27.6
95°	0.1	0.8	5.8	16.9	20.7
97.5°	0.1	0.5	3.5	12.0	15.2
100°	0.1	0.4	2.1	8.0	10.8
102.5°	0.1	0.5	1.4	5.1	7.1
105°	0.1	0.5	1.2	3.3	4.7
107.5°	0.1	0.5	1.0	2.5	3.2
110°	0.1	0.4	1.1	1.9	2.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.1	0.3	1.0	1.6	1.9
115°	0.1	0.3	0.9	1.5	1.6
117.5°	0.1	0.2	0.7	1.5	1.6
120°	0.1	0.1	0.6	1.4	1.6
122.5°	0.1	0.1	0.5	1.3	1.6
125°	0.1	0.1	0.4	1.0	1.4
127.5°	0.1	0.1	0.3	0.8	1.0
130°	0.1	0.1	0.3	0.6	0.8
132.5°	0.1	0.1	0.2	0.5	0.6
135°	0.1	0.1	0.1	0.3	0.5
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)