

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: P517631

Luminaire Tested: HVL12-8-LD4-2HI-35-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: P517631
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-2HI-35-UNV-C-EDD-90
Description: 8 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 18756.0 lumens
Efficiency: N/A
Efficacy: 106.0 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 8' x H: 0.17')
CIE Type: Direct

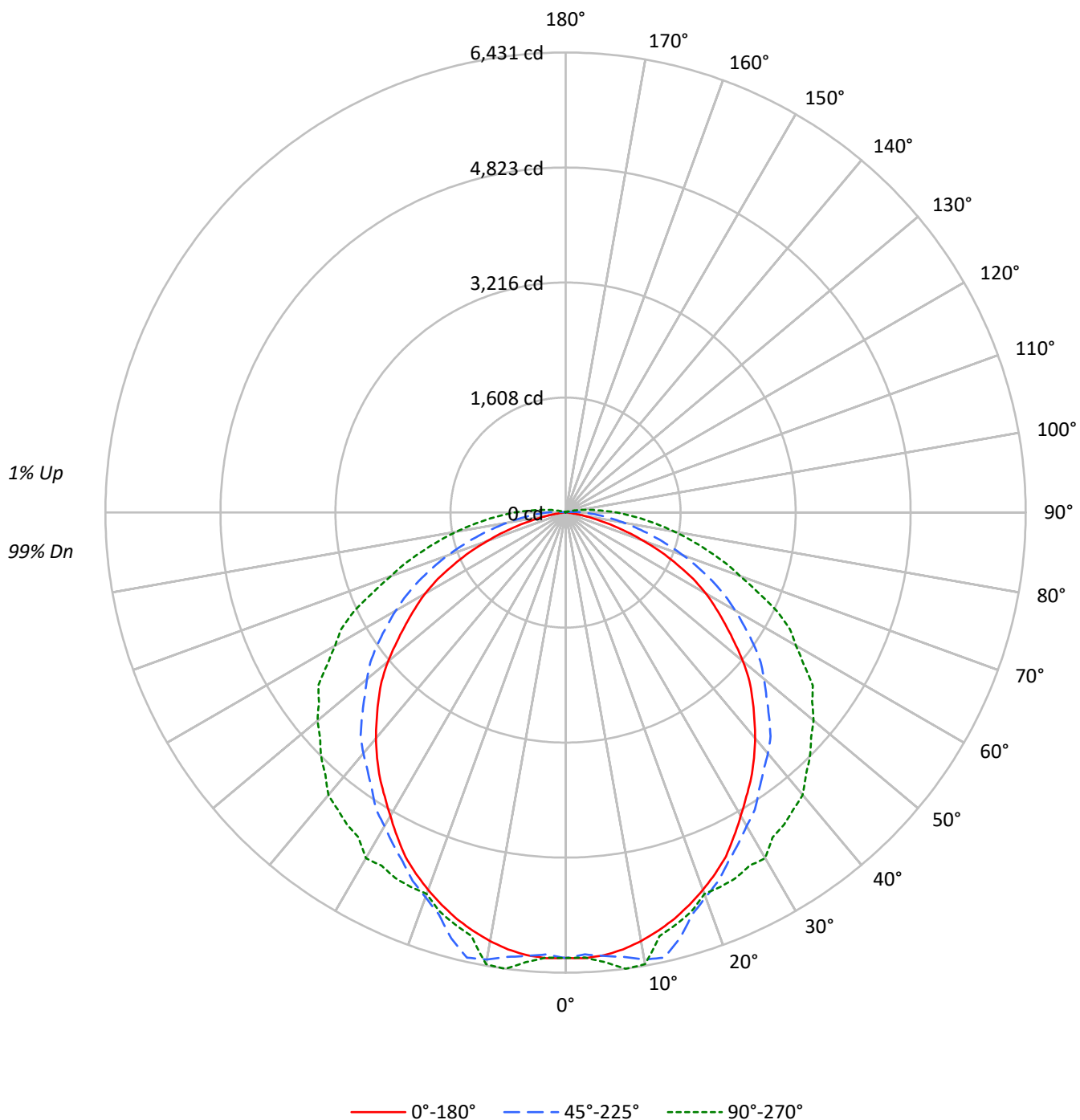
Input Watts (W): 176.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	8377	8377	8377
5°	8373	8304	8396
10°	8278	8469	8507
15°	8143	8291	7952
20°	7975	7816	7658
25°	7797	7527	7762
30°	7517	7303	7907
35°	7324	7093	7829
40°	7115	6950	7946
45°	6891	6752	7877
50°	6616	6545	7900
55°	6203	6323	7992
60°	5896	5998	7762
65°	5253	5599	7647
70°	4332	5057	7012
75°	3144	4380	6593
80°	1819	3702	6173
85°	727	3012	5809

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 7992 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	598.4	3.2
10°-20°	1704.1	9.1
20°-30°	2535.5	13.5
30°-40°	3047.6	16.2
40°-50°	3207.8	17.1
50°-60°	2976.5	15.9
60°-70°	2353.4	12.5
70°-80°	1437.5	7.7
80°-90°	626.3	3.3
90°-100°	195.0	1.0
100°-110°	43.8	0.2
110°-120°	17.6	0.1
120°-130°	9.9	0.1
130°-140°	2.7	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°	4837.9	25.8
0°-40°	7885.5	42.0
0°-60°	14069.7	75.0
0°-90°	18487.0	98.6
90°-120°	256.4	1.4
90°-150°	269.0	1.4
90°-180°	269.0	1.4
0°-180°	18756.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	6226	6226	6226	6226	6226	
5°	6211	6198	6220	6289	6307	589
15°	5878	6104	6164	5960	5963	1656
25°	5303	5641	5384	5545	5635	2434
35°	4524	4650	4719	5148	5323	2827
45°	3697	3714	4019	4656	4830	2850
55°	2723	2767	3206	3908	4218	2447
65°	1724	1778	2259	2989	3261	1707
75°	652	864	1259	1935	2057	711
85°	58	203	491	952	1093	90
90°	1	61	258	604	712	3
95°	1	15	113	331	405	1
105°	1	9	23	65	91	2
115°	1	5	18	29	30	2
125°	1	2	8	19	27	2
135°	2	2	2	6	9	1
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°	6226.0	6226.0	6226.0	6226.0	6226.0
2.5°	6233.6	6217.1	6182.9	6215.8	6224.7
5°	6210.8	6198.1	6219.6	6289.4	6307.1
7.5°	6158.8	6206.9	6264.0	6390.8	6431.4
10°	6081.4	6172.7	6343.9	6451.7	6409.9
12.5°	5987.5	6142.3	6371.8	6161.3	6063.6
15°	5878.5	6104.2	6163.8	5959.6	5963.4
17.5°	5750.4	6072.5	5888.6	5883.5	5846.8
20°	5612.1	5966.0	5722.5	5712.3	5673.0
22.5°	5463.7	5825.2	5575.3	5555.1	5661.6
25°	5302.7	5641.3	5383.8	5544.9	5635.0
27.5°	5101.0	5400.3	5224.0	5452.3	5565.2
30°	4896.8	5151.7	5060.4	5378.8	5579.2
32.5°	4705.3	4891.7	4926.0	5350.9	5383.8
35°	4523.9	4649.5	4719.3	5147.9	5323.0
37.5°	4324.8	4359.1	4544.2	5063.0	5231.6
40°	4121.9	4100.3	4397.1	4923.5	5156.8
42.5°	3903.8	3896.1	4241.1	4853.7	4970.4
45°	3697.0	3713.5	4019.2	4655.8	4829.6
47.5°	3485.2	3506.8	3808.6	4439.0	4654.6
50°	3239.2	3267.1	3620.9	4246.2	4523.9
52.5°	2972.8	3026.1	3438.3	4063.6	4343.8
55°	2723.0	2767.4	3206.2	3907.6	4218.3
57.5°	2494.7	2521.3	2966.5	3711.0	3945.6
60°	2270.2	2276.6	2740.7	3492.8	3717.3
62.5°	2012.8	2024.2	2508.7	3235.4	3536.0
65°	1723.6	1778.1	2258.8	2989.3	3260.7
67.5°	1453.4	1548.6	2003.9	2763.6	2905.6
70°	1164.3	1325.3	1754.0	2498.5	2598.7
72.5°	899.2	1088.2	1497.8	2201.7	2342.5
75°	651.9	863.7	1259.4	1935.4	2057.1
77.5°	438.8	654.4	1036.2	1641.2	1802.2
80°	262.5	478.1	837.1	1368.5	1549.8
82.5°	134.4	320.9	649.4	1147.8	1310.1
85°	58.3	202.9	490.8	952.5	1093.3
87.5°	16.5	115.4	361.5	769.8	889.1
90°	1.3	60.9	257.5	603.7	711.5
92.5°	1.3	29.2	181.4	456.6	539.0
95°	1.3	15.2	112.9	331.0	404.6
97.5°	1.3	8.9	68.5	234.6	296.8
100°	1.3	7.6	40.6	156.0	211.8
102.5°	1.3	8.9	27.9	98.9	138.2
105°	1.3	8.9	22.8	64.7	91.3
107.5°	2.5	8.9	20.3	48.2	63.4
110°	1.3	7.6	21.6	36.8	49.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.5	6.3	20.3	30.4	36.8
115°	1.3	5.1	17.8	29.2	30.4
117.5°	2.5	3.8	14.0	29.2	30.4
120°	2.5	2.5	11.4	27.9	31.7
122.5°	2.5	2.5	8.9	25.4	30.4
125°	1.3	2.5	7.6	19.0	26.6
127.5°	2.5	2.5	6.3	15.2	20.3
130°	2.5	2.5	5.1	11.4	15.2
132.5°	2.5	2.5	3.8	8.9	11.4
135°	2.5	2.5	2.5	6.3	8.9
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)