

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: P517665

Luminaire Tested: HVL12-8-LD4-2STD-35-UNV-O-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: P517665
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-2STD-35-UNV-O-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: 13197.0 lumens
Efficiency: N/A
Efficacy: 98.3 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 8' x H: 0.17')
CIE Type: Direct

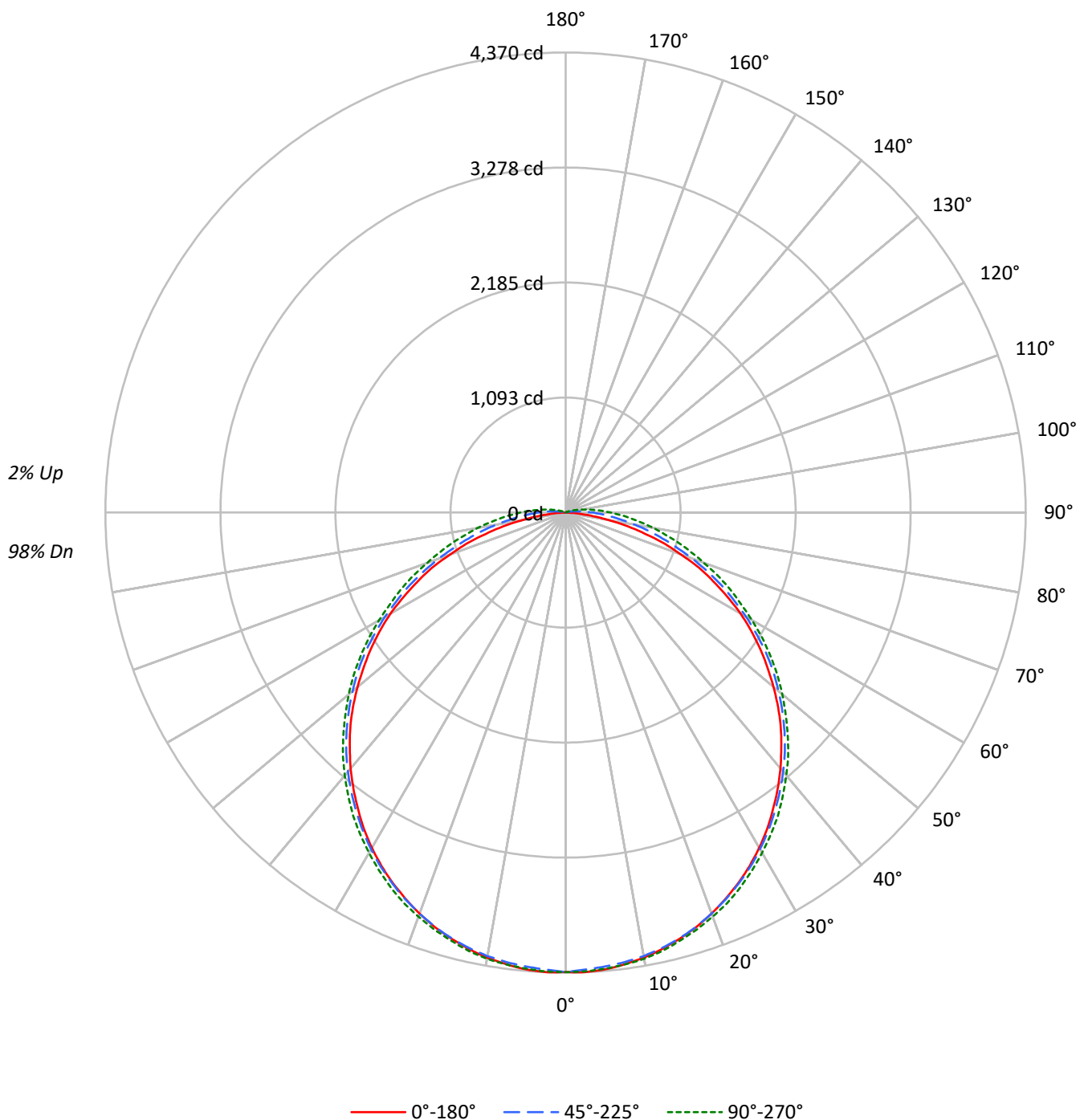
Input Watts (W): 134.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			98
1	108	102	98	94	105	100	96	92	95	92	89	91	88	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	77	73	79	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	52	62	56	51	60	54	50			47
5	75	61	52	45	72	60	52	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	40	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°	5873	5873	5873
5°	5872	5778	5789
10°	5843	5710	5713
15°	5804	5630	5611
20°	5761	5536	5513
25°	5708	5438	5412
30°	5645	5331	5291
35°	5564	5210	5171
40°	5480	5082	5026
45°	5389	4940	4867
50°	5269	4772	4693
55°	5140	4586	4500
60°	4987	4332	4267
65°	4725	4045	4042
70°	4342	3700	3776
75°	3787	3321	3555
80°	2937	2967	3389
85°	1693	2645	3297

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 5389 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	413.0	3.1
10°-20°	1184.8	9.0
20°-30°	1797.7	13.6
30°-40°	2173.7	16.5
40°-50°	2268.1	17.2
50°-60°	2073.8	15.7
60°-70°	1616.6	12.2
70°-80°	1011.3	7.7
80°-90°	459.3	3.5
90°-100°	153.9	1.2
100°-110°	38.6	0.3
110°-120°	6.1	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°	3395.5	25.7
0°-40°	5569.3	42.2
0°-60°	9911.2	75.1
0°-90°	12998.3	98.5
90°-120°	198.7	1.5
90°-150°	198.7	1.5
90°-180°	199.0	1.5
0°-180°	13197.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4365	4365	4365	4365	4365	
5°	4356	4347	4328	4348	4348	414
15°	4190	4197	4186	4209	4208	1183
25°	3882	3885	3889	3922	3928	1789
35°	3437	3452	3466	3502	3516	2151
45°	2891	2917	2941	2970	2984	2228
55°	2256	2283	2325	2359	2375	2016
65°	1551	1577	1632	1697	1724	1534
75°	785	833	955	1069	1109	837
85°	136	251	431	570	620	172
90°	1	94	254	382	428	5
95°	1	25	132	239	276	1
105°	2	3	22	64	85	2
115°	3	3	4	11	16	2
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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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4364.8	4364.8	4364.8	4364.8	4364.8
2.5°	4369.9	4363.7	4344.2	4363.7	4362.7
5°	4355.5	4347.3	4327.7	4348.3	4348.3
7.5°	4326.7	4323.6	4306.1	4329.8	4329.8
10°	4292.7	4291.7	4277.3	4303.0	4304.1
12.5°	4245.4	4249.5	4236.2	4260.8	4263.9
15°	4189.9	4197.1	4185.7	4209.4	4208.4
17.5°	4129.1	4133.3	4125.0	4151.8	4150.8
20°	4054.0	4059.2	4053.0	4080.8	4083.9
22.5°	3970.7	3977.9	3976.9	4005.7	4013.9
25°	3882.2	3885.3	3889.4	3922.3	3928.5
27.5°	3784.4	3789.6	3796.8	3826.6	3832.8
30°	3677.4	3685.7	3693.9	3724.8	3733.0
32.5°	3564.3	3572.5	3582.8	3622.9	3627.0
35°	3436.7	3452.1	3466.5	3501.5	3515.9
37.5°	3309.1	3328.6	3342.0	3379.0	3390.4
40°	3174.3	3193.8	3215.4	3254.5	3261.7
42.5°	3033.3	3056.0	3081.7	3116.7	3129.0
45°	2891.3	2917.0	2940.7	2969.5	2983.9
47.5°	2738.0	2763.7	2792.5	2825.5	2834.7
50°	2579.6	2609.4	2640.3	2671.1	2687.6
52.5°	2417.0	2453.0	2488.0	2520.9	2536.3
55°	2256.5	2283.2	2325.4	2359.4	2374.8
57.5°	2089.8	2112.4	2150.5	2206.1	2214.3
60°	1920.0	1940.6	1979.7	2025.0	2043.5
62.5°	1732.7	1760.5	1801.7	1859.3	1875.8
65°	1550.6	1577.4	1631.9	1696.7	1723.5
67.5°	1374.7	1383.9	1453.9	1521.8	1565.0
70°	1166.8	1201.8	1283.1	1366.4	1399.4
72.5°	987.8	1022.8	1112.3	1210.0	1251.2
75°	785.1	833.4	954.9	1069.1	1109.2
77.5°	607.1	660.6	810.8	926.0	972.3
80°	423.9	507.3	670.9	800.5	850.9
82.5°	266.5	369.4	544.3	680.1	724.4
85°	135.8	251.1	431.1	570.0	620.5
87.5°	36.0	162.6	335.4	468.2	519.6
90°	1.0	93.6	254.1	381.7	428.0
92.5°	1.0	52.5	189.3	303.5	350.9
95°	1.0	24.7	131.7	238.7	275.8
97.5°	1.0	10.3	90.5	180.1	217.1
100°	1.0	5.1	57.6	130.7	162.6
102.5°	2.1	3.1	36.0	93.6	119.4
105°	2.1	3.1	21.6	63.8	85.4
107.5°	2.1	3.1	12.3	43.2	58.6
110°	3.1	3.1	7.2	26.8	39.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	3.1	3.1	4.1	17.5	25.7
115°	3.1	3.1	4.1	11.3	16.5
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)