

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: P517697

Luminaire Tested: HVL12-8-LD4-3LO-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: P517697
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-3LO-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: 13519.0 lumens
Efficiency: N/A
Efficacy: 97.7 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

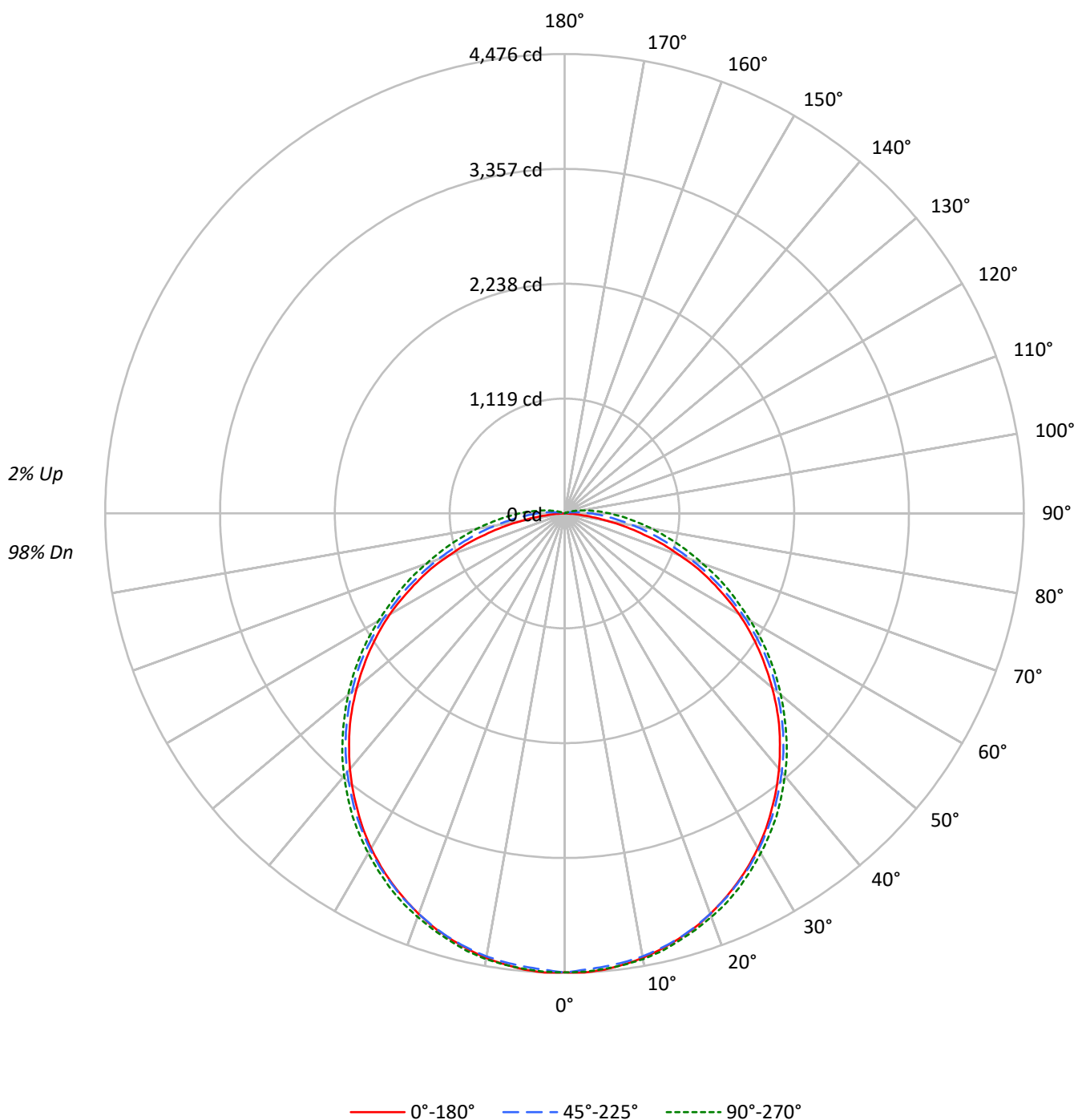
Input Watts (W): 138.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			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°	6016	6016	6016
5°	6015	5919	5930
10°	5986	5850	5852
15°	5945	5768	5748
20°	5902	5671	5647
25°	5847	5571	5544
30°	5783	5461	5420
35°	5699	5337	5298
40°	5613	5206	5149
45°	5521	5061	4985
50°	5397	4889	4808
55°	5266	4698	4609
60°	5109	4438	4371
65°	4841	4144	4141
70°	4448	3790	3868
75°	3879	3402	3642
80°	3009	3039	3472
85°	1734	2710	3377

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 5521 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	423.1	3.1
10°-20°	1213.7	9.0
20°-30°	1841.6	13.6
30°-40°	2226.8	16.5
40°-50°	2323.5	17.2
50°-60°	2124.3	15.7
60°-70°	1656.0	12.2
70°-80°	1035.9	7.7
80°-90°	470.5	3.5
90°-100°	157.7	1.2
100°-110°	39.6	0.3
110°-120°	6.2	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°	3478.4	25.7
0°-40°	5705.2	42.2
0°-60°	10153.0	75.1
0°-90°	13315.5	98.5
90°-120°	203.5	1.5
90°-150°	203.5	1.5
90°-180°	204.0	1.5
0°-180°	13519.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4471	4471	4471	4471	4471	
5°	4462	4453	4433	4454	4454	424
15°	4292	4300	4288	4312	4311	1212
25°	3977	3980	3984	4018	4024	1833
35°	3520	3536	3551	3587	3602	2203
45°	2962	2988	3012	3042	3057	2282
55°	2312	2339	2382	2417	2433	2065
65°	1588	1616	1672	1738	1766	1572
75°	804	854	978	1095	1136	857
85°	139	257	442	584	636	176
90°	1	96	260	391	438	6
95°	1	25	135	244	282	1
105°	2	3	22	65	88	2
115°	3	3	4	12	17	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°	4471.3	4471.3	4471.3	4471.3	4471.3
2.5°	4476.5	4470.2	4450.2	4470.2	4469.2
5°	4461.8	4453.3	4433.3	4454.4	4454.4
7.5°	4432.3	4429.1	4411.2	4435.4	4435.4
10°	4397.5	4396.4	4381.7	4408.0	4409.1
12.5°	4349.0	4353.2	4339.5	4364.8	4368.0
15°	4292.1	4299.5	4287.9	4312.1	4311.1
17.5°	4229.9	4234.1	4225.7	4253.1	4252.0
20°	4152.9	4158.2	4151.9	4180.4	4183.5
22.5°	4067.6	4074.9	4073.9	4103.4	4111.8
25°	3976.9	3980.1	3984.3	4018.0	4024.4
27.5°	3876.8	3882.1	3889.4	3920.0	3926.3
30°	3767.2	3775.6	3784.0	3815.7	3824.1
32.5°	3651.2	3659.7	3670.2	3711.3	3715.5
35°	3520.5	3536.3	3551.1	3586.9	3601.7
37.5°	3389.8	3409.8	3423.5	3461.5	3473.1
40°	3251.7	3271.8	3293.9	3334.0	3341.3
42.5°	3107.3	3130.5	3156.9	3192.7	3205.4
45°	2961.9	2988.2	3012.5	3042.0	3056.7
47.5°	2804.8	2831.2	2860.7	2894.4	2903.9
50°	2642.5	2673.1	2704.7	2736.3	2753.2
52.5°	2476.0	2512.8	2548.7	2582.4	2598.2
55°	2311.5	2338.9	2382.1	2416.9	2432.7
57.5°	2140.8	2164.0	2203.0	2259.9	2268.3
60°	1966.9	1987.9	2028.0	2074.4	2093.3
62.5°	1775.0	1803.5	1845.6	1904.7	1921.5
65°	1588.4	1615.9	1671.7	1738.1	1765.5
67.5°	1408.2	1417.7	1489.4	1558.9	1603.2
70°	1195.3	1231.1	1314.4	1399.8	1433.5
72.5°	1011.9	1047.7	1139.4	1239.6	1281.7
75°	804.2	853.8	978.2	1095.2	1136.3
77.5°	621.9	676.7	830.6	948.6	996.1
80°	434.3	519.6	687.2	820.0	871.7
82.5°	273.0	378.4	557.6	696.7	742.0
85°	139.1	257.2	441.6	583.9	635.6
87.5°	36.9	166.5	343.6	479.6	532.3
90°	1.1	95.9	260.3	391.1	438.5
92.5°	1.1	53.8	193.9	310.9	359.4
95°	1.1	25.3	134.9	244.5	282.5
97.5°	1.1	10.5	92.8	184.5	222.4
100°	1.1	5.3	59.0	133.9	166.5
102.5°	2.1	3.2	36.9	95.9	122.3
105°	2.1	3.2	22.1	65.4	87.5
107.5°	2.1	3.2	12.6	44.3	60.1
110°	3.2	3.2	7.4	27.4	40.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	3.2	3.2	4.2	17.9	26.4
115°	3.2	3.2	4.2	11.6	16.9
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)