

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: P517647

Luminaire Tested: HVL12-8-LD4-2LO-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: P517647
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-2LO-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: 11314.0 lumens
Efficiency: N/A
Efficacy: 119.5 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

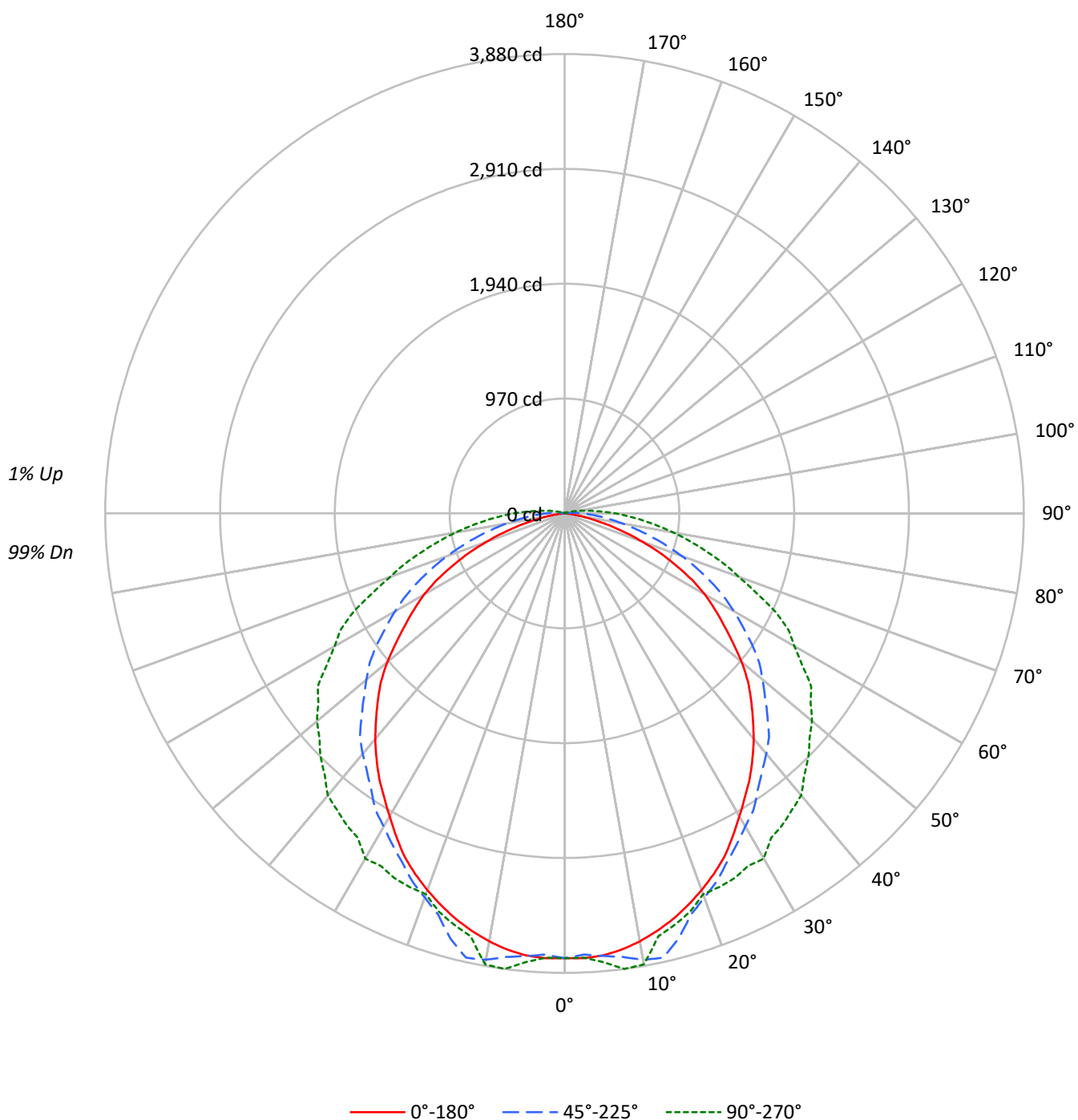
Input Watts (W): 94.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	5053	5053	5053
5°	5051	5009	5065
10°	4994	5109	5132
15°	4912	5001	4797
20°	4811	4715	4620
25°	4703	4541	4682
30°	4535	4405	4770
35°	4418	4279	4723
40°	4292	4192	4793
45°	4157	4073	4751
50°	3991	3948	4765
55°	3742	3814	4821
60°	3557	3618	4682
65°	3169	3378	4613
70°	2613	3051	4230
75°	1897	2642	3977
80°	1098	2233	3724
85°	439	1817	3504

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 4821 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	361.0	3.2
10°-20°	1027.9	9.1
20°-30°	1529.4	13.5
30°-40°	1838.4	16.2
40°-50°	1935.0	17.1
50°-60°	1795.5	15.9
60°-70°	1419.6	12.5
70°-80°	867.1	7.7
80°-90°	377.8	3.3
90°-100°	117.6	1.0
100°-110°	26.4	0.2
110°-120°	10.6	0.1
120°-130°	6.0	0.1
130°-140°	1.6	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°	2918.3	25.8
0°-40°	4756.7	42.0
0°-60°	8487.1	75.0
0°-90°	11151.7	98.6
90°-120°	154.7	1.4
90°-150°	162.3	1.4
90°-180°	162.0	1.4
0°-180°	11314.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3756	3756	3756	3756	3756	
5°	3746	3739	3752	3794	3805	355
15°	3546	3682	3718	3595	3597	999
25°	3199	3403	3248	3345	3399	1468
35°	2729	2805	2847	3105	3211	1706
45°	2230	2240	2424	2808	2913	1719
55°	1643	1669	1934	2357	2545	1476
65°	1040	1073	1363	1803	1967	1030
75°	393	521	760	1168	1241	429
85°	35	122	296	575	660	54
90°	1	37	155	364	429	2
95°	1	9	68	200	244	1
105°	1	5	14	39	55	1
115°	1	3	11	18	18	1
125°	1	2	5	12	16	1
135°	2	2	2	4	5	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°	3755.6	3755.6	3755.6	3755.6	3755.6
2.5°	3760.2	3750.3	3729.6	3749.5	3754.9
5°	3746.5	3738.8	3751.8	3793.9	3804.6
7.5°	3715.1	3744.2	3778.6	3855.1	3879.6
10°	3668.4	3723.5	3826.8	3891.8	3866.6
12.5°	3611.8	3705.1	3843.6	3716.6	3657.7
15°	3546.0	3682.2	3718.1	3595.0	3597.3
17.5°	3468.7	3663.1	3552.1	3549.1	3526.9
20°	3385.3	3598.8	3451.9	3445.8	3422.1
22.5°	3295.8	3513.9	3363.2	3350.9	3415.2
25°	3198.7	3402.9	3247.6	3344.8	3399.1
27.5°	3077.0	3257.6	3151.2	3289.0	3357.0
30°	2953.9	3107.6	3052.6	3244.6	3365.5
32.5°	2838.3	2950.8	2971.5	3227.7	3247.6
35°	2728.9	2804.7	2846.8	3105.3	3210.9
37.5°	2608.8	2629.5	2741.2	3054.1	3155.8
40°	2486.4	2473.4	2652.4	2969.9	3110.7
42.5°	2354.8	2350.2	2558.3	2927.8	2998.2
45°	2230.1	2240.1	2424.4	2808.5	2913.3
47.5°	2102.4	2115.4	2297.4	2677.7	2807.7
50°	1953.9	1970.8	2184.2	2561.4	2728.9
52.5°	1793.3	1825.4	2074.1	2451.2	2620.3
55°	1642.6	1669.3	1934.0	2357.1	2544.6
57.5°	1504.9	1520.9	1789.5	2238.5	2380.1
60°	1369.4	1373.3	1653.3	2106.9	2242.4
62.5°	1214.1	1221.0	1513.3	1951.6	2133.0
65°	1039.7	1072.6	1362.6	1803.2	1966.9
67.5°	876.7	934.1	1208.8	1667.0	1752.7
70°	702.3	799.5	1058.1	1507.1	1567.6
72.5°	542.4	656.4	903.5	1328.1	1413.0
75°	393.2	521.0	759.7	1167.5	1240.9
77.5°	264.7	394.8	625.0	990.0	1087.1
80°	158.4	288.4	504.9	825.5	934.9
82.5°	81.1	193.6	391.7	692.4	790.3
85°	35.2	122.4	296.1	574.6	659.5
87.5°	9.9	69.6	218.0	464.4	536.3
90°	0.8	36.7	155.3	364.2	429.2
92.5°	0.8	17.6	109.4	275.4	325.1
95°	0.8	9.2	68.1	199.7	244.1
97.5°	0.8	5.4	41.3	141.5	179.0
100°	0.8	4.6	24.5	94.1	127.8
102.5°	0.8	5.4	16.8	59.7	83.4
105°	0.8	5.4	13.8	39.0	55.1
107.5°	1.5	5.4	12.2	29.1	38.3
110°	0.8	4.6	13.0	22.2	29.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.5	3.8	12.2	18.4	22.2
115°	0.8	3.1	10.7	17.6	18.4
117.5°	1.5	2.3	8.4	17.6	18.4
120°	1.5	1.5	6.9	16.8	19.1
122.5°	1.5	1.5	5.4	15.3	18.4
125°	0.8	1.5	4.6	11.5	16.1
127.5°	1.5	1.5	3.8	9.2	12.2
130°	1.5	1.5	3.1	6.9	9.2
132.5°	1.5	1.5	2.3	5.4	6.9
135°	1.5	1.5	1.5	3.8	5.4
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)