

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: P517712

Luminaire Tested: HVL12-8-LD4-3STD-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: P517712
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-3STD-35-UNV-C-EDD
Description: 8 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 19232.0 lumens
Efficiency: N/A
Efficacy: 98.0 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

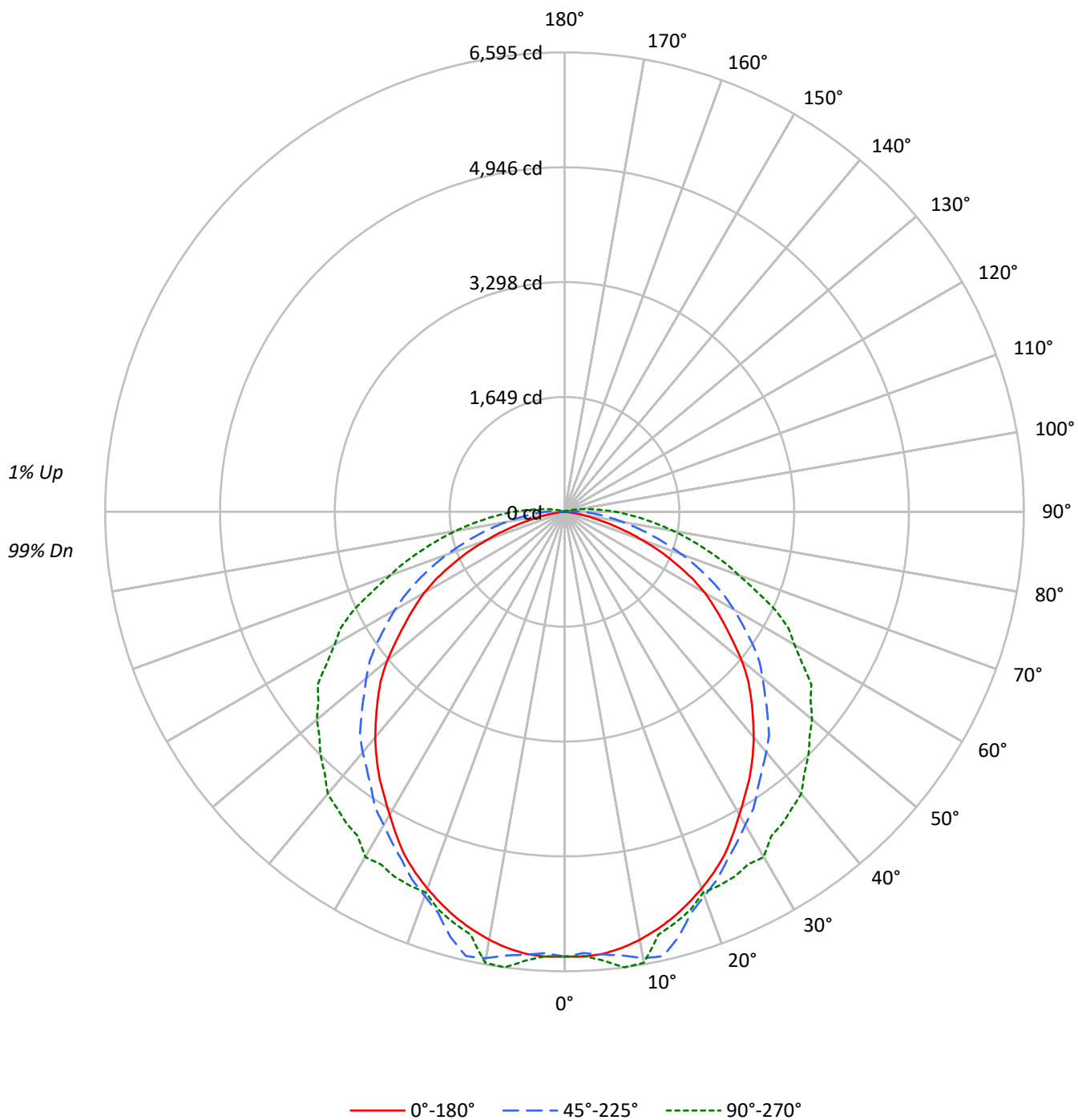
Input Watts (W): 196.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		101
1	108	103	98	94	105	100	96	92	96	92	89		91	89	86		87
2	98	89	82	76	95	87	80	75	83	78	73		80	75	71		76
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		67
4	81	69	60	53	79	67	59	52	65	57	51		62	56	51		60
5	75	61	52	45	72	60	51	45	58	50	44		56	49	44		54
6	69	55	46	39	67	54	46	39	52	45	39		50	44	38		49
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		44
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		41
9	55	42	34	28	54	41	33	28	40	33	28		39	32	27		38
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		35

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8590	8590	8590
5°	8586	8515	8609
10°	8488	8684	8723
15°	8350	8502	8153
20°	8178	8015	7853
25°	7994	7718	7959
30°	7708	7488	8108
35°	7510	7273	8028
40°	7296	7126	8148
45°	7066	6924	8077
50°	6784	6711	8101
55°	6360	6484	8195
60°	6046	6150	7959
65°	5386	5741	7841
70°	4442	5186	7190
75°	3224	4491	6760
80°	1865	3796	6330
85°	746	3088	5956

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 8195 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	613.6	3.2
10°-20°	1747.3	9.1
20°-30°	2599.8	13.5
30°-40°	3125.0	16.2
40°-50°	3289.2	17.1
50°-60°	3052.0	15.9
60°-70°	2413.1	12.5
70°-80°	1474.0	7.7
80°-90°	642.2	3.3
90°-100°	199.9	1.0
100°-110°	44.9	0.2
110°-120°	18.1	0.1
120°-130°	10.1	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°	4960.7	25.8
0°-40°	8085.6	42.0
0°-60°	14426.8	75.0
0°-90°	18956.2	98.6
90°-120°	262.9	1.4
90°-150°	275.8	1.4
90°-180°	276.0	1.4
0°-180°	19232.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	6384	6384	6384	6384	6384	
5°	6368	6355	6378	6449	6467	604
15°	6028	6259	6320	6111	6115	1698
25°	5437	5784	5520	5686	5778	2496
35°	4639	4768	4839	5279	5458	2899
45°	3791	3808	4121	4774	4952	2922
55°	2792	2838	3288	4007	4325	2509
65°	1767	1823	2316	3065	3344	1750
75°	668	886	1291	1984	2109	729
85°	60	208	503	977	1121	93
90°	1	62	264	619	730	3
95°	1	16	116	339	415	1
105°	1	9	23	66	94	2
115°	1	5	18	30	31	2
125°	1	3	8	20	27	2
135°	3	3	3	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°	6384.0	6384.0	6384.0	6384.0	6384.0
2.5°	6391.8	6374.9	6339.8	6373.6	6382.7
5°	6368.4	6355.4	6377.5	6449.0	6467.2
7.5°	6315.1	6364.5	6423.0	6553.0	6594.7
10°	6235.7	6329.4	6504.9	6615.5	6572.5
12.5°	6139.5	6298.1	6533.5	6317.7	6217.5
15°	6027.7	6259.1	6320.3	6110.9	6114.8
17.5°	5896.3	6226.6	6038.1	6032.9	5995.1
20°	5754.6	6117.4	5867.7	5857.3	5817.0
22.5°	5602.4	5973.0	5716.8	5696.0	5805.3
25°	5437.2	5784.5	5520.5	5685.6	5778.0
27.5°	5230.5	5537.4	5356.6	5590.7	5706.4
30°	5021.1	5282.5	5188.9	5515.3	5720.7
32.5°	4824.7	5015.9	5051.0	5486.7	5520.5
35°	4638.8	4767.5	4839.0	5278.6	5458.0
37.5°	4434.6	4469.7	4659.6	5191.5	5364.4
40°	4226.5	4204.4	4508.7	5048.4	5287.7
42.5°	4002.8	3995.0	4348.8	4976.9	5096.5
45°	3790.9	3807.8	4121.2	4774.0	4952.2
47.5°	3573.7	3595.8	3905.3	4551.6	4772.7
50°	3321.4	3350.0	3712.8	4354.0	4638.8
52.5°	3048.3	3102.9	3525.6	4166.7	4454.1
55°	2792.1	2837.6	3287.6	4006.7	4325.3
57.5°	2558.0	2585.3	3041.8	3805.2	4045.7
60°	2327.8	2334.3	2810.3	3581.5	3811.7
62.5°	2063.8	2075.5	2572.3	3317.5	3625.7
65°	1767.3	1823.3	2316.1	3065.2	3343.5
67.5°	1490.3	1587.9	2054.7	2833.7	2979.4
70°	1193.8	1359.0	1798.5	2561.9	2664.7
72.5°	922.0	1115.8	1535.8	2257.6	2402.0
75°	668.4	885.6	1291.4	1984.5	2109.4
77.5°	450.0	671.0	1062.5	1682.8	1848.0
80°	269.2	490.3	858.3	1403.2	1589.2
82.5°	137.8	329.0	665.8	1176.9	1343.4
85°	59.8	208.1	503.3	976.6	1121.0
87.5°	16.9	118.3	370.6	789.4	911.6
90°	1.3	62.4	264.0	619.0	729.6
92.5°	1.3	29.9	186.0	468.2	552.7
95°	1.3	15.6	115.7	339.4	414.8
97.5°	1.3	9.1	70.2	240.6	304.3
100°	1.3	7.8	41.6	160.0	217.2
102.5°	1.3	9.1	28.6	101.4	141.8
105°	1.3	9.1	23.4	66.3	93.6
107.5°	2.6	9.1	20.8	49.4	65.0
110°	1.3	7.8	22.1	37.7	50.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.6	6.5	20.8	31.2	37.7
115°	1.3	5.2	18.2	29.9	31.2
117.5°	2.6	3.9	14.3	29.9	31.2
120°	2.6	2.6	11.7	28.6	32.5
122.5°	2.6	2.6	9.1	26.0	31.2
125°	1.3	2.6	7.8	19.5	27.3
127.5°	2.6	2.6	6.5	15.6	20.8
130°	2.6	2.6	5.2	11.7	15.6
132.5°	2.6	2.6	3.9	9.1	11.7
135°	2.6	2.6	2.6	6.5	9.1
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)