

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: P517716

Luminaire Tested: HVL12-8-LD4-3STD-40-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: P517716
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-3STD-40-UNV-C-EDD
Description: 8 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 19504.9 lumens
Efficiency: N/A
Efficacy: 99.4 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

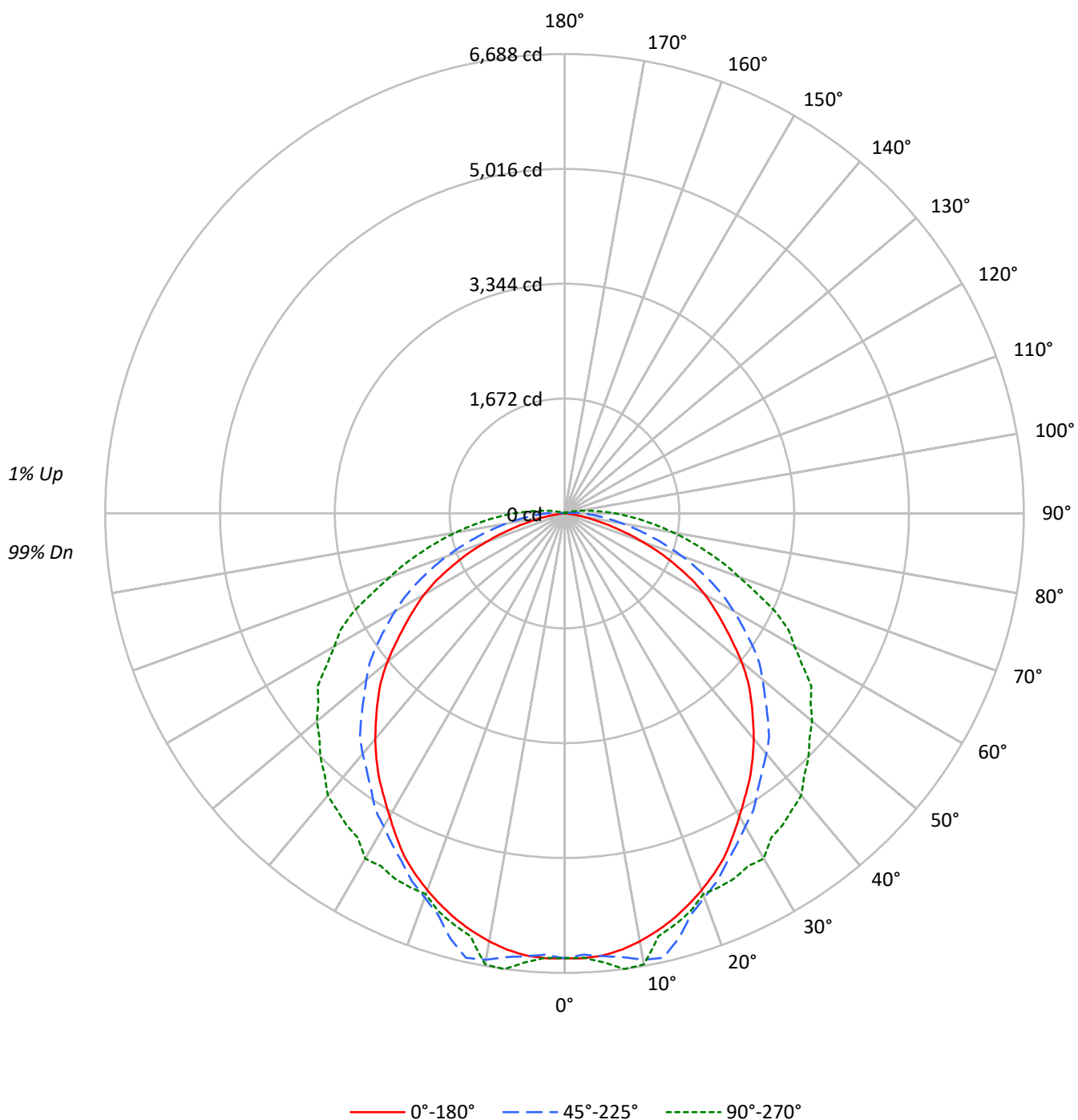
Input Watts (W): 196.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	8712	8712	8712
5°	8708	8636	8731
10°	8609	8808	8847
15°	8468	8622	8269
20°	8294	8129	7964
25°	8108	7828	8072
30°	7818	7595	8223
35°	7616	7376	8142
40°	7399	7227	8263
45°	7166	7022	8191
50°	6880	6806	8216
55°	6451	6576	8312
60°	6132	6237	8072
65°	5462	5823	7953
70°	4505	5260	7292
75°	3270	4555	6856
80°	1892	3850	6419
85°	757	3132	6041

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 8312 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	622.3	3.2
10°-20°	1772.1	9.1
20°-30°	2636.7	13.5
30°-40°	3169.3	16.2
40°-50°	3335.9	17.1
50°-60°	3095.3	15.9
60°-70°	2447.4	12.5
70°-80°	1495.0	7.7
80°-90°	651.3	3.3
90°-100°	202.7	1.0
100°-110°	45.5	0.2
110°-120°	18.3	0.1
120°-130°	10.3	0.1
130°-140°	2.8	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°	5031.1	25.8
0°-40°	8200.4	42.0
0°-60°	14631.6	75.0
0°-90°	19225.3	98.6
90°-120°	266.6	1.4
90°-150°	279.7	1.4
90°-180°	280.0	1.4
0°-180°	19504.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	6475	6475	6475	6475	6475	
5°	6459	6446	6468	6540	6559	612
15°	6113	6348	6410	6198	6202	1722
25°	5514	5867	5599	5766	5860	2532
35°	4705	4835	4908	5354	5536	2940
45°	3845	3862	4180	4842	5022	2964
55°	2832	2878	3334	4064	4387	2544
65°	1792	1849	2349	3109	3391	1775
75°	678	898	1310	2013	2139	740
85°	61	211	510	990	1137	94
90°	1	63	268	628	740	3
95°	1	16	117	344	421	1
105°	1	9	24	67	95	2
115°	1	5	18	30	32	2
125°	1	3	8	20	28	2
135°	3	3	3	7	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°	6474.6	6474.6	6474.6	6474.6	6474.6
2.5°	6482.5	6465.4	6429.8	6464.0	6473.3
5°	6458.8	6445.6	6468.0	6540.5	6559.0
7.5°	6404.7	6454.8	6514.2	6646.1	6688.3
10°	6324.2	6419.2	6597.3	6709.4	6665.8
12.5°	6226.6	6387.6	6626.3	6407.3	6305.8
15°	6113.2	6348.0	6410.0	6197.6	6201.6
17.5°	5980.0	6315.0	6123.8	6118.5	6080.2
20°	5836.2	6204.2	5951.0	5940.4	5899.5
22.5°	5681.9	6057.8	5798.0	5776.9	5887.7
25°	5514.4	5866.6	5598.8	5766.3	5860.0
27.5°	5304.7	5616.0	5432.6	5670.1	5787.4
30°	5092.4	5357.5	5262.5	5593.6	5801.9
32.5°	4893.2	5087.1	5122.7	5564.5	5598.8
35°	4704.6	4835.2	4907.7	5353.5	5535.5
37.5°	4497.5	4533.1	4725.7	5265.1	5440.6
40°	4286.5	4264.1	4572.7	5120.1	5362.7
42.5°	4059.6	4051.7	4410.5	5047.5	5168.9
45°	3844.7	3861.8	4179.7	4841.8	5022.5
47.5°	3624.4	3646.8	3960.7	4616.2	4840.5
50°	3368.5	3397.5	3765.5	4415.8	4704.6
52.5°	3091.6	3147.0	3575.6	4225.8	4517.3
55°	2831.7	2877.9	3334.2	4063.6	4386.7
57.5°	2594.3	2622.0	3085.0	3859.2	4103.2
60°	2360.9	2367.5	2850.2	3632.3	3865.8
62.5°	2093.1	2105.0	2608.8	3364.6	3677.2
65°	1792.4	1849.1	2349.0	3108.7	3391.0
67.5°	1511.5	1610.4	2083.9	2873.9	3021.7
70°	1210.8	1378.3	1824.1	2598.3	2702.5
72.5°	935.1	1131.6	1557.6	2289.7	2436.1
75°	677.9	898.2	1309.7	2012.7	2139.3
77.5°	456.3	680.6	1077.6	1706.7	1874.2
80°	273.0	497.2	870.5	1423.1	1611.7
82.5°	139.8	333.7	675.3	1193.6	1362.4
85°	60.7	211.0	510.4	990.5	1136.9
87.5°	17.1	120.0	375.9	800.6	924.6
90°	1.3	63.3	267.7	627.8	739.9
92.5°	1.3	30.3	188.6	474.8	560.5
95°	1.3	15.8	117.4	344.2	420.7
97.5°	1.3	9.2	71.2	244.0	308.6
100°	1.3	7.9	42.2	162.2	220.3
102.5°	1.3	9.2	29.0	102.9	143.8
105°	1.3	9.2	23.7	67.3	95.0
107.5°	2.6	9.2	21.1	50.1	65.9
110°	1.3	7.9	22.4	38.2	51.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.6	6.6	21.1	31.7	38.2
115°	1.3	5.3	18.5	30.3	31.7
117.5°	2.6	4.0	14.5	30.3	31.7
120°	2.6	2.6	11.9	29.0	33.0
122.5°	2.6	2.6	9.2	26.4	31.7
125°	1.3	2.6	7.9	19.8	27.7
127.5°	2.6	2.6	6.6	15.8	21.1
130°	2.6	2.6	5.3	11.9	15.8
132.5°	2.6	2.6	4.0	9.2	11.9
135°	2.6	2.6	2.6	6.6	9.2
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)