

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: P517717

Luminaire Tested: HVL12-8-LD4-3STD-40-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: P517717
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-O-EDD-90
Description: 8 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 17661.0 lumens
Efficiency: N/A
Efficacy: 90.0 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

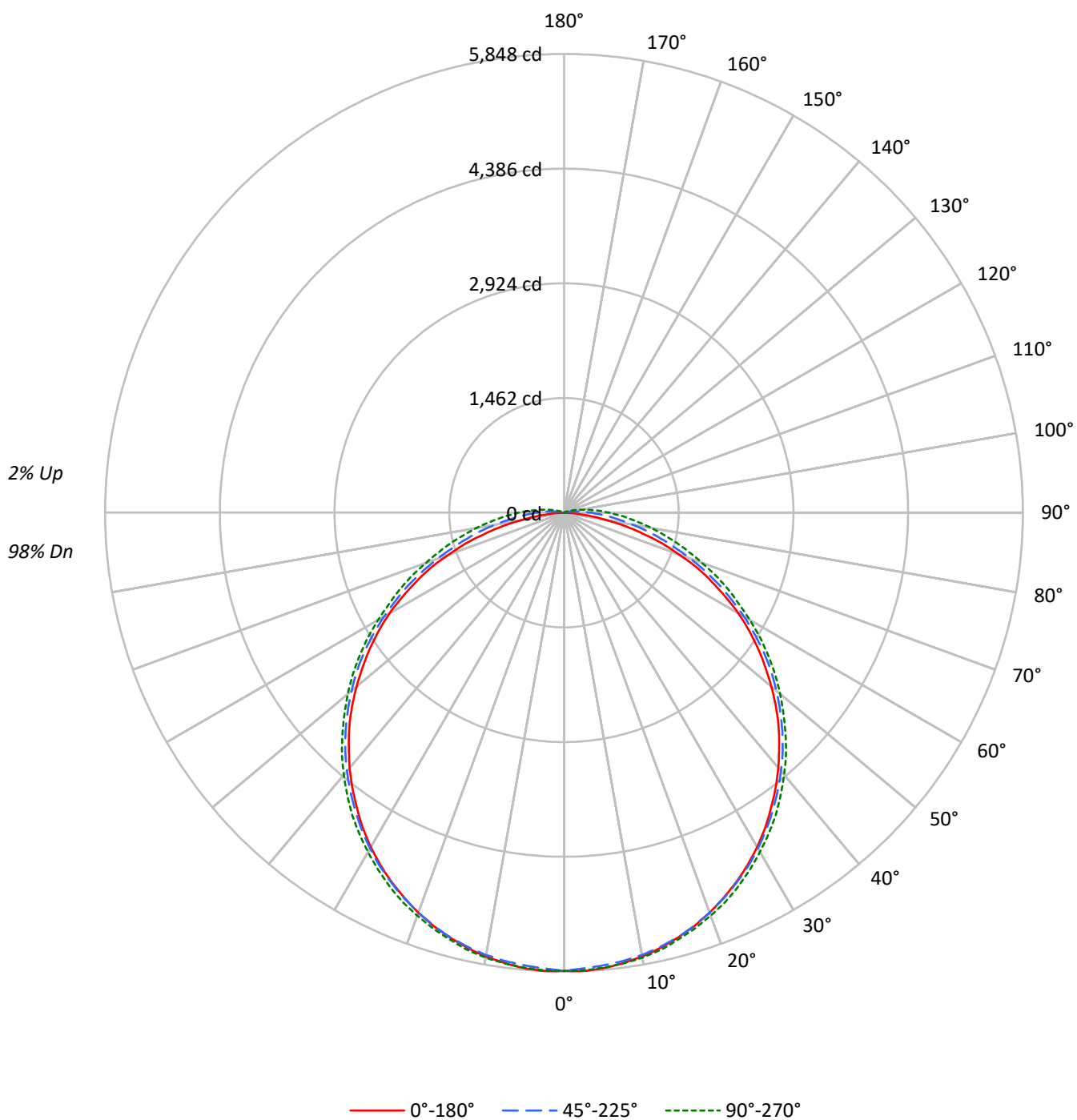
Input Watts (W): 196.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	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°	7859	7859	7859
5°	7858	7733	7747
10°	7820	7642	7645
15°	7767	7535	7510
20°	7710	7409	7378
25°	7639	7277	7242
30°	7555	7134	7080
35°	7446	6972	6921
40°	7333	6801	6726
45°	7212	6612	6513
50°	7051	6387	6281
55°	6879	6138	6022
60°	6674	5798	5710
65°	6324	5413	5409
70°	5810	4951	5053
75°	5068	4444	4757
80°	3931	3970	4536
85°	2267	3541	4412

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 7212 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	552.8	3.1
10°-20°	1585.6	9.0
20°-30°	2405.8	13.6
30°-40°	2909.0	16.5
40°-50°	3035.4	17.2
50°-60°	2775.2	15.7
60°-70°	2163.4	12.2
70°-80°	1353.3	7.7
80°-90°	614.7	3.5
90°-100°	206.0	1.2
100°-110°	51.7	0.3
110°-120°	8.1	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°	4544.1	25.7
0°-40°	7453.1	42.2
0°-60°	13263.7	75.1
0°-90°	17395.1	98.5
90°-120°	265.9	1.5
90°-150°	265.9	1.5
90°-180°	266.0	1.5
0°-180°	17661.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5841	5841	5841	5841	5841	
5°	5829	5818	5792	5819	5819	554
15°	5607	5617	5602	5633	5632	1583
25°	5195	5200	5205	5249	5257	2394
35°	4599	4620	4639	4686	4705	2879
45°	3869	3904	3935	3974	3993	2982
55°	3020	3056	3112	3157	3178	2698
65°	2075	2111	2184	2271	2306	2053
75°	1051	1115	1278	1431	1484	1120
85°	182	336	577	763	830	230
90°	1	125	340	511	573	7
95°	1	33	176	320	369	1
105°	3	4	29	85	114	3
115°	4	4	6	15	22	3
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°	5841.2	5841.2	5841.2	5841.2	5841.2
2.5°	5848.1	5839.8	5813.7	5839.8	5838.4
5°	5828.8	5817.8	5791.6	5819.2	5819.2
7.5°	5790.2	5786.1	5762.7	5794.4	5794.4
10°	5744.8	5743.4	5724.1	5758.6	5759.9
12.5°	5681.5	5687.0	5669.1	5702.1	5706.2
15°	5607.1	5616.7	5601.6	5633.3	5631.9
17.5°	5525.9	5531.4	5520.4	5556.2	5554.8
20°	5425.3	5432.2	5424.0	5461.1	5465.3
22.5°	5313.8	5323.4	5322.1	5360.6	5371.6
25°	5195.4	5199.5	5205.0	5249.1	5257.3
27.5°	5064.6	5071.5	5081.1	5121.0	5129.3
30°	4921.4	4932.4	4943.4	4984.7	4995.7
32.5°	4769.9	4780.9	4794.7	4848.4	4853.9
35°	4599.1	4619.8	4639.1	4685.9	4705.2
37.5°	4428.4	4454.6	4472.5	4522.0	4537.2
40°	4248.0	4274.2	4303.1	4355.4	4365.1
42.5°	4059.4	4089.7	4124.1	4170.9	4187.4
45°	3869.3	3903.8	3935.4	3974.0	3993.3
47.5°	3664.2	3698.6	3737.2	3781.2	3793.6
50°	3452.1	3492.0	3533.4	3574.7	3596.7
52.5°	3234.5	3282.7	3329.6	3373.6	3394.3
55°	3019.7	3055.5	3112.0	3157.4	3178.1
57.5°	2796.7	2827.0	2877.9	2952.3	2963.3
60°	2569.5	2597.0	2649.3	2709.9	2734.7
62.5°	2318.9	2356.0	2411.1	2488.2	2510.3
65°	2075.1	2110.9	2183.9	2270.7	2306.5
67.5°	1839.7	1852.1	1945.7	2036.6	2094.4
70°	1561.5	1608.3	1717.1	1828.6	1872.7
72.5°	1321.9	1368.7	1488.5	1619.3	1674.4
75°	1050.6	1115.4	1277.8	1430.7	1484.4
77.5°	812.4	884.0	1085.1	1239.3	1301.3
80°	567.3	678.9	897.8	1071.3	1138.8
82.5°	356.6	494.3	728.4	910.2	969.4
85°	181.8	336.0	577.0	762.9	830.3
87.5°	48.2	217.6	448.9	626.5	695.4
90°	1.4	125.3	340.1	510.9	572.8
92.5°	1.4	70.2	253.4	406.2	469.6
95°	1.4	33.0	176.3	319.5	369.0
97.5°	1.4	13.8	121.2	241.0	290.5
100°	1.4	6.9	77.1	174.9	217.6
102.5°	2.8	4.1	48.2	125.3	159.7
105°	2.8	4.1	28.9	85.4	114.3
107.5°	2.8	4.1	16.5	57.8	78.5
110°	4.1	4.1	9.6	35.8	52.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	4.1	4.1	5.5	23.4	34.4
115°	4.1	4.1	5.5	15.1	22.0
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)