

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: P517685

Luminaire Tested: HVL12-8-LD4-3HI-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: P517685
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-3HI-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: 22728.0 lumens
Efficiency: N/A
Efficacy: 87.9 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

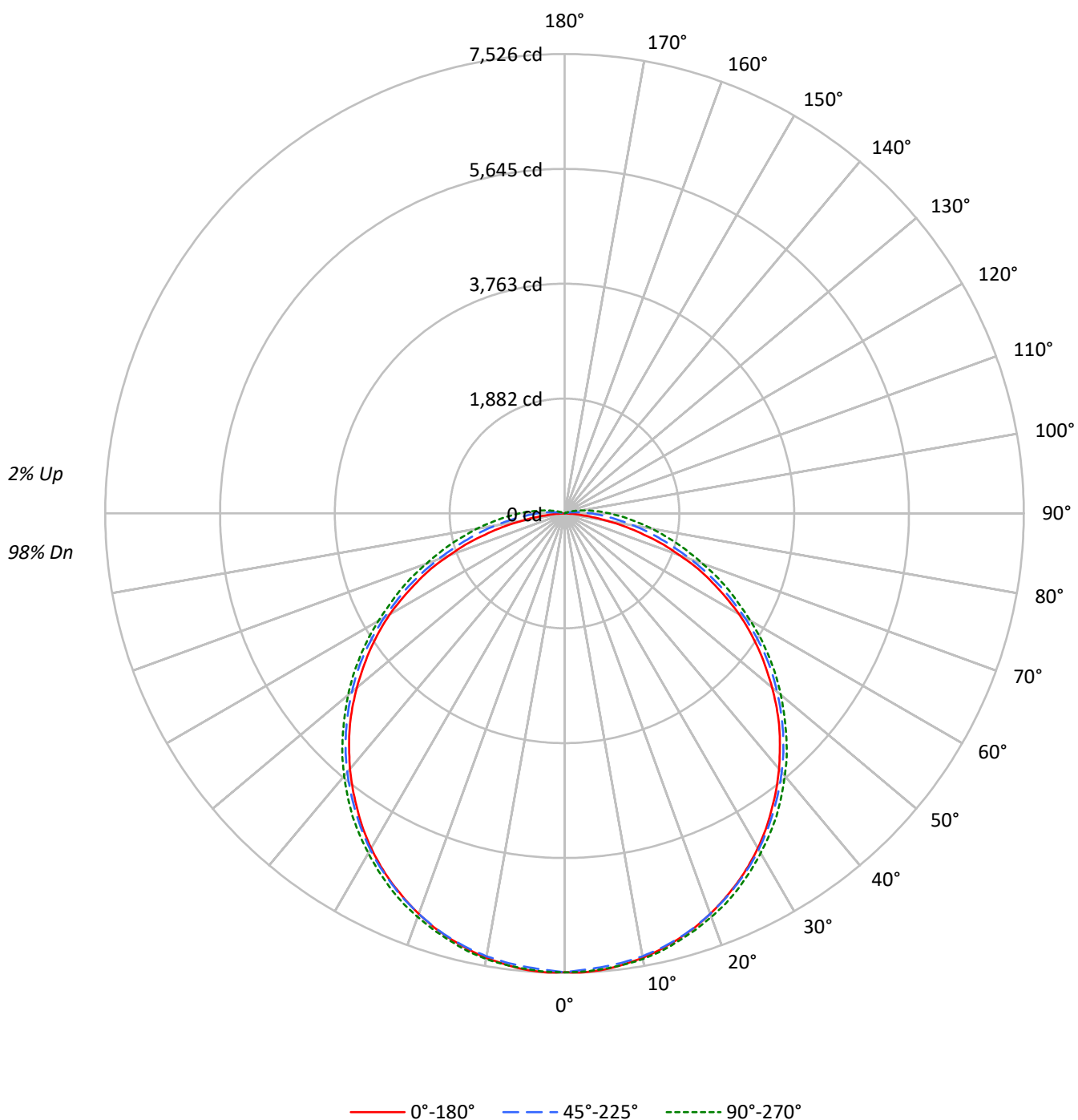
Input Watts (W): 258.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	10114	10114	10114
5°	10113	9951	9969
10°	10064	9834	9838
15°	9995	9697	9664
20°	9922	9534	9494
25°	9830	9365	9320
30°	9723	9181	9111
35°	9582	8973	8906
40°	9437	8753	8656
45°	9282	8508	8381
50°	9074	8219	8083
55°	8853	7899	7749
60°	8588	7461	7349
65°	8138	6967	6961
70°	7477	6372	6503
75°	6522	5719	6122
80°	5059	5110	5837
85°	2916	4556	5677

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 9282 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	711.3	3.1
10°-20°	2040.5	9.0
20°-30°	3096.0	13.6
30°-40°	3743.6	16.5
40°-50°	3906.2	17.2
50°-60°	3571.4	15.7
60°-70°	2784.1	12.2
70°-80°	1741.6	7.7
80°-90°	791.0	3.5
90°-100°	265.1	1.2
100°-110°	66.6	0.3
110°-120°	10.5	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°	5847.8	25.7
0°-40°	9591.5	42.2
0°-60°	17069.1	75.1
0°-90°	22385.9	98.5
90°-120°	342.2	1.5
90°-150°	342.2	1.5
90°-180°	342.0	1.5
0°-180°	22728.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	7517	7517	7517	7517	7517	
5°	7501	7487	7453	7489	7489	712
15°	7216	7228	7209	7250	7248	2037
25°	6686	6691	6698	6755	6766	3081
35°	5919	5945	5970	6030	6055	3705
45°	4980	5024	5064	5114	5139	3837
55°	3886	3932	4005	4063	4090	3472
65°	2670	2717	2810	2922	2968	2642
75°	1352	1435	1644	1841	1910	1441
85°	234	432	742	982	1068	296
90°	2	161	438	657	737	9
95°	2	42	227	411	475	1
105°	4	5	37	110	147	4
115°	5	5	7	20	28	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°	7517.0	7517.0	7517.0	7517.0	7517.0
2.5°	7525.9	7515.3	7481.6	7515.3	7513.5
5°	7501.1	7486.9	7453.3	7488.7	7488.7
7.5°	7451.5	7446.2	7416.0	7456.8	7456.8
10°	7393.0	7391.2	7366.4	7410.7	7412.5
12.5°	7311.5	7318.6	7295.5	7338.1	7343.4
15°	7215.8	7228.2	7208.7	7249.5	7247.7
17.5°	7111.2	7118.3	7104.2	7150.2	7148.5
20°	6981.9	6990.7	6980.1	7028.0	7033.3
22.5°	6838.4	6850.8	6849.0	6898.6	6912.8
25°	6686.0	6691.3	6698.4	6755.1	6765.7
27.5°	6517.6	6526.5	6538.9	6590.3	6600.9
30°	6333.3	6347.5	6361.7	6414.8	6429.0
32.5°	6138.4	6152.6	6170.3	6239.4	6246.5
35°	5918.7	5945.2	5970.0	6030.3	6055.1
37.5°	5698.9	5732.6	5755.6	5819.4	5838.9
40°	5466.8	5500.5	5537.7	5605.0	5617.4
42.5°	5224.0	5263.0	5307.3	5367.5	5388.8
45°	4979.5	5023.8	5064.5	5114.1	5139.0
47.5°	4715.4	4759.7	4809.4	4866.1	4882.0
50°	4442.5	4493.9	4547.1	4600.3	4628.6
52.5°	4162.6	4224.6	4284.8	4341.5	4368.1
55°	3886.1	3932.2	4004.8	4063.3	4089.9
57.5°	3599.0	3638.0	3703.6	3799.3	3813.5
60°	3306.7	3342.1	3409.4	3487.4	3519.3
62.5°	2984.1	3032.0	3102.9	3202.1	3230.5
65°	2670.5	2716.6	2810.5	2922.1	2968.2
67.5°	2367.5	2383.4	2503.9	2620.9	2695.3
70°	2009.5	2069.8	2209.8	2353.3	2410.0
72.5°	1701.2	1761.4	1915.6	2083.9	2154.8
75°	1352.1	1435.4	1644.5	1841.2	1910.3
77.5°	1045.5	1137.7	1396.4	1594.8	1674.6
80°	730.1	873.6	1155.4	1378.7	1465.5
82.5°	459.0	636.2	937.4	1171.3	1247.5
85°	233.9	432.4	742.5	981.7	1068.5
87.5°	62.0	280.0	577.7	806.3	894.9
90°	1.8	161.3	437.7	657.4	737.2
92.5°	1.8	90.4	326.1	522.8	604.3
95°	1.8	42.5	226.8	411.1	474.9
97.5°	1.8	17.7	155.9	310.1	373.9
100°	1.8	8.9	99.2	225.1	280.0
102.5°	3.5	5.3	62.0	161.3	205.6
105°	3.5	5.3	37.2	109.9	147.1
107.5°	3.5	5.3	21.3	74.4	101.0
110°	5.3	5.3	12.4	46.1	67.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	5.3	5.3	7.1	30.1	44.3
115°	5.3	5.3	7.1	19.5	28.4
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)