

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: P517681

Luminaire Tested: HVL12-8-LD4-3HI-35-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: P517681
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-3HI-35-UNV-O-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: 22410.0 lumens
Efficiency: N/A
Efficacy: 86.7 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

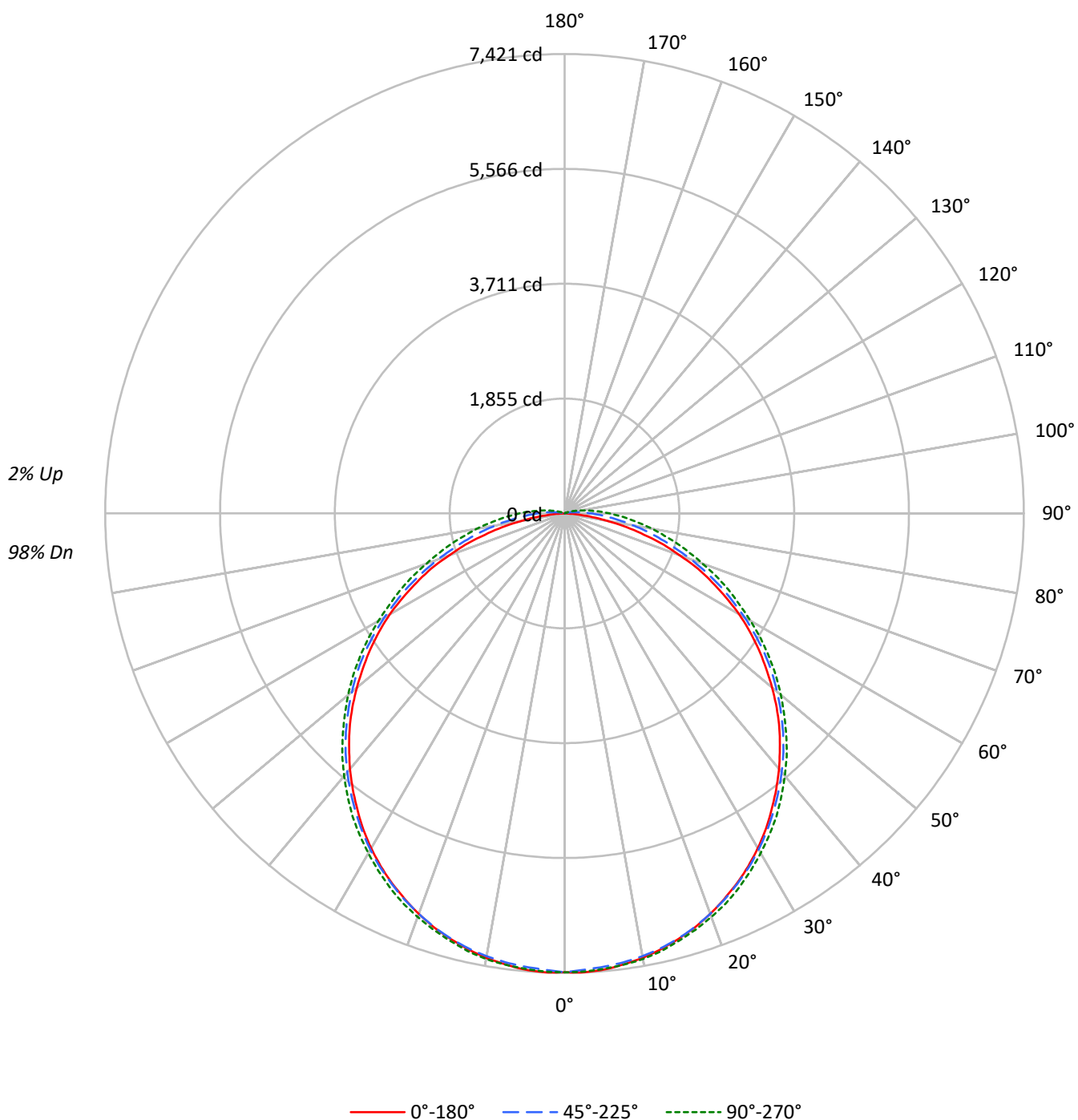
Input Watts (W): 258.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	9973	9973	9973
5°	9971	9812	9830
10°	9923	9697	9700
15°	9856	9561	9529
20°	9783	9401	9362
25°	9693	9234	9189
30°	9587	9052	8984
35°	9448	8847	8782
40°	9305	8630	8535
45°	9152	8390	8264
50°	8947	8104	7970
55°	8729	7788	7641
60°	8468	7357	7246
65°	8024	6869	6864
70°	7373	6282	6412
75°	6431	5639	6036
80°	4989	5038	5755
85°	2875	4493	5598

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 9152 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	701.4	3.1
10°-20°	2011.9	9.0
20°-30°	3052.7	13.6
30°-40°	3691.3	16.5
40°-50°	3851.6	17.2
50°-60°	3521.5	15.7
60°-70°	2745.2	12.2
70°-80°	1717.2	7.7
80°-90°	780.0	3.5
90°-100°	261.4	1.2
100°-110°	65.6	0.3
110°-120°	10.3	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°	5766.0	25.7
0°-40°	9457.3	42.2
0°-60°	16830.3	75.1
0°-90°	22072.7	98.5
90°-120°	337.3	1.5
90°-150°	337.3	1.5
90°-180°	337.0	1.5
0°-180°	22410.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	7412	7412	7412	7412	7412	
5°	7396	7382	7349	7384	7384	702
15°	7115	7127	7108	7148	7146	2008
25°	6592	6598	6605	6661	6671	3038
35°	5836	5862	5886	5946	5970	3653
45°	4910	4954	4994	5043	5067	3783
55°	3832	3877	3949	4006	4033	3423
65°	2633	2678	2771	2881	2927	2605
75°	1333	1415	1622	1815	1884	1421
85°	231	426	732	968	1054	292
90°	2	159	432	648	727	9
95°	2	42	224	405	468	1
105°	4	5	37	108	145	4
115°	5	5	7	19	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°	7411.9	7411.9	7411.9	7411.9	7411.9
2.5°	7420.6	7410.1	7376.9	7410.1	7408.4
5°	7396.1	7382.2	7349.0	7383.9	7383.9
7.5°	7347.2	7342.0	7312.3	7352.5	7352.5
10°	7289.6	7287.8	7263.4	7307.0	7308.8
12.5°	7209.2	7216.2	7193.5	7235.4	7240.6
15°	7114.8	7127.1	7107.9	7148.0	7146.3
17.5°	7011.8	7018.7	7004.8	7050.2	7048.4
20°	6884.2	6892.9	6882.5	6929.6	6934.9
22.5°	6742.7	6754.9	6753.2	6802.1	6816.1
25°	6592.4	6597.7	6604.6	6660.6	6671.0
27.5°	6426.4	6435.2	6447.4	6498.1	6508.5
30°	6244.7	6258.7	6272.7	6325.1	6339.1
32.5°	6052.5	6066.5	6084.0	6152.1	6159.1
35°	5835.8	5862.1	5886.5	5945.9	5970.4
37.5°	5619.2	5652.4	5675.1	5738.0	5757.2
40°	5390.3	5423.5	5460.2	5526.6	5538.8
42.5°	5150.9	5189.4	5233.0	5292.4	5313.4
45°	4909.8	4953.5	4993.7	5042.6	5067.1
47.5°	4649.5	4693.1	4742.1	4798.0	4813.7
50°	4380.4	4431.0	4483.5	4535.9	4563.8
52.5°	4104.3	4165.5	4224.9	4280.8	4307.0
55°	3831.7	3877.2	3948.8	4006.5	4032.7
57.5°	3548.7	3587.1	3651.8	3746.1	3760.1
60°	3260.4	3295.3	3361.7	3438.6	3470.1
62.5°	2942.4	2989.6	3059.5	3157.3	3185.3
65°	2633.1	2678.5	2771.2	2881.2	2926.7
67.5°	2334.3	2350.1	2468.9	2584.2	2657.6
70°	1981.4	2040.8	2178.8	2320.4	2376.3
72.5°	1677.4	1736.8	1888.8	2054.8	2124.7
75°	1333.2	1415.3	1621.5	1815.4	1883.5
77.5°	1030.9	1121.7	1376.8	1572.5	1651.2
80°	719.9	861.4	1139.2	1359.4	1445.0
82.5°	452.5	627.3	924.3	1154.9	1230.1
85°	230.6	426.3	732.1	968.0	1053.6
87.5°	61.2	276.1	569.6	795.0	882.4
90°	1.7	159.0	431.6	648.2	726.9
92.5°	1.7	89.1	321.5	515.4	595.8
95°	1.7	41.9	223.6	405.4	468.3
97.5°	1.7	17.5	153.8	305.8	368.7
100°	1.7	8.7	97.8	221.9	276.1
102.5°	3.5	5.2	61.2	159.0	202.7
105°	3.5	5.2	36.7	108.3	145.0
107.5°	3.5	5.2	21.0	73.4	99.6
110°	5.2	5.2	12.2	45.4	66.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	5.2	5.2	7.0	29.7	43.7
115°	5.2	5.2	7.0	19.2	28.0
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)