

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: P517680

Luminaire Tested: HVL12-8-LD4-3HI-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: P517680
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-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: 24749.0 lumens
Efficiency: N/A
Efficacy: 95.7 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

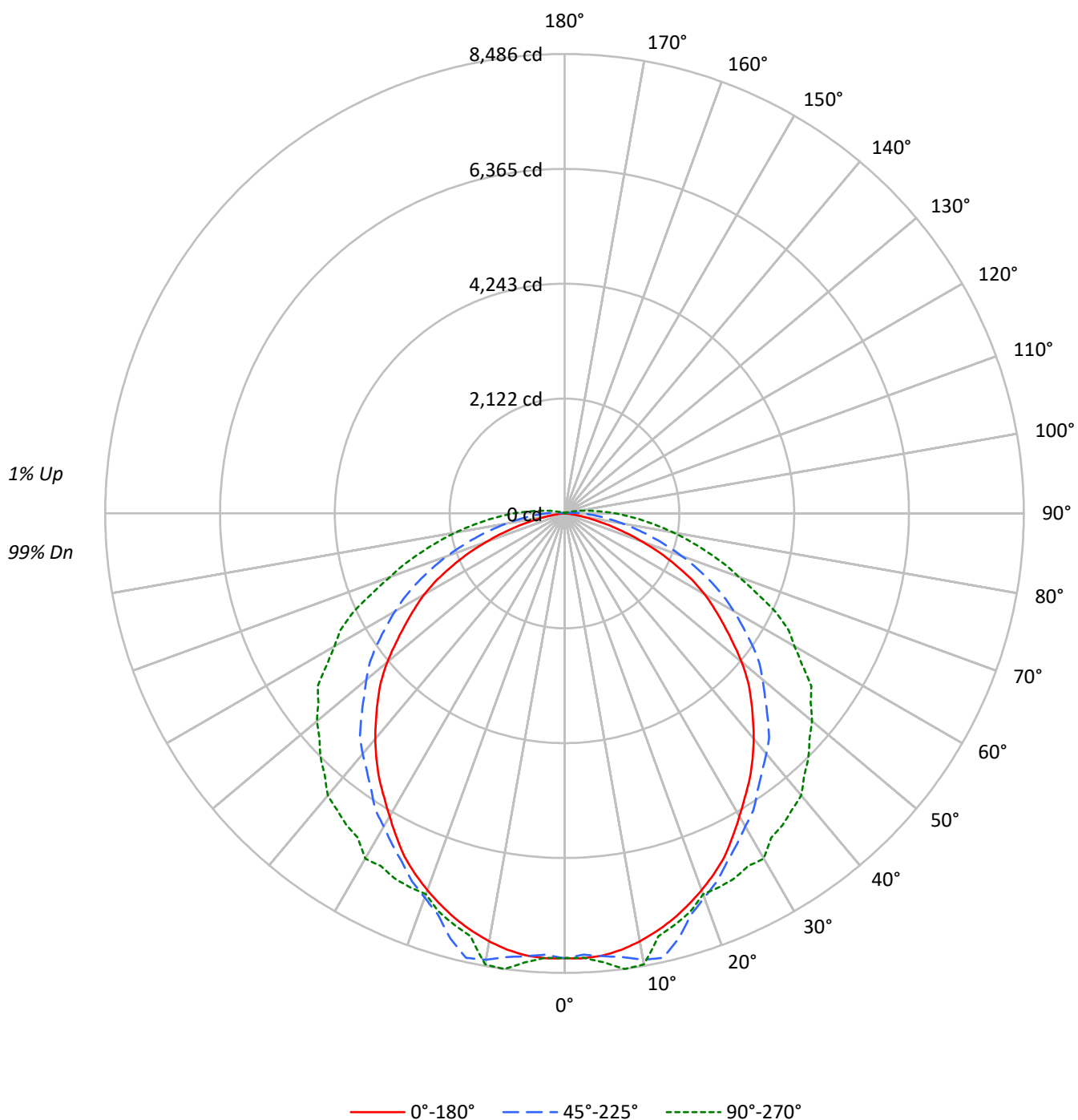
Input Watts (W): 258.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			99
1	108	103	98	94	105	100	96	92	96	92	89	91	89	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	78	73	80	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	51	62	56	51	60	54	50			47
5	75	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	39	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°	11054	11054	11054
5°	11049	10957	11079
10°	10923	11176	11226
15°	10745	10941	10492
20°	10523	10314	10105
25°	10288	9932	10242
30°	9919	9636	10433
35°	9664	9359	10331
40°	9389	9170	10485
45°	9093	8910	10394
50°	8730	8636	10424
55°	8185	8344	10546
60°	7780	7914	10242
65°	6931	7388	10091
70°	5716	6674	9252
75°	4149	5779	8699
80°	2400	4885	8145
85°	960	3975	7665

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 10546 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	789.6	3.2
10°-20°	2248.5	9.1
20°-30°	3345.6	13.5
30°-40°	4021.4	16.2
40°-50°	4232.8	17.1
50°-60°	3927.5	15.9
60°-70°	3105.4	12.5
70°-80°	1896.9	7.7
80°-90°	826.4	3.3
90°-100°	257.3	1.0
100°-110°	57.8	0.2
110°-120°	23.2	0.1
120°-130°	13.1	0.1
130°-140°	3.5	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°	6383.7	25.8
0°-40°	10405.1	42.0
0°-60°	18565.4	75.0
0°-90°	24394.1	98.6
90°-120°	338.3	1.4
90°-150°	354.9	1.4
90°-180°	355.0	1.4
0°-180°	24749.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	8215	8215	8215	8215	8215	
5°	8195	8178	8207	8299	8322	777
15°	7757	8055	8133	7864	7869	2185
25°	6997	7444	7104	7317	7436	3212
35°	5970	6135	6227	6793	7024	3731
45°	4878	4900	5303	6144	6373	3760
55°	3593	3652	4231	5156	5566	3228
65°	2274	2346	2980	3944	4303	2252
75°	860	1140	1662	2554	2714	939
85°	77	268	648	1257	1443	119
90°	2	80	340	797	939	4
95°	2	20	149	437	534	1
105°	2	12	30	85	120	2
115°	2	7	23	38	40	3
125°	2	3	10	25	35	3
135°	3	3	3	8	12	2
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°	8215.3	8215.3	8215.3	8215.3	8215.3
2.5°	8225.4	8203.6	8158.4	8201.9	8213.6
5°	8195.2	8178.5	8207.0	8299.0	8322.4
7.5°	8126.6	8190.2	8265.5	8432.9	8486.4
10°	8024.5	8145.0	8371.0	8513.2	8458.0
12.5°	7900.7	8104.9	8407.8	8130.0	8001.1
15°	7756.8	8054.7	8133.3	7863.9	7868.9
17.5°	7587.8	8012.8	7770.2	7763.5	7714.9
20°	7405.3	7872.2	7550.9	7537.5	7485.7
22.5°	7209.5	7686.5	7356.8	7330.0	7470.6
25°	6997.0	7443.8	7104.1	7316.6	7435.5
27.5°	6730.9	7125.9	6893.2	7194.5	7343.4
30°	6461.5	6797.8	6677.4	7097.4	7361.8
32.5°	6208.8	6454.8	6500.0	7060.6	7104.1
35°	5969.5	6135.1	6227.2	6792.8	7023.8
37.5°	5706.7	5751.9	5996.2	6680.7	6903.3
40°	5438.9	5410.5	5802.1	6496.6	6804.5
42.5°	5151.1	5141.1	5596.3	6404.6	6558.5
45°	4878.3	4900.1	5303.4	6143.5	6372.8
47.5°	4598.8	4627.3	5025.6	5857.3	6141.8
50°	4274.2	4311.0	4777.9	5603.0	5969.5
52.5°	3922.7	3993.0	4536.9	5362.0	5731.8
55°	3593.1	3651.6	4230.7	5156.1	5566.1
57.5°	3291.8	3327.0	3914.4	4896.7	5206.3
60°	2995.6	3004.0	3616.5	4608.9	4905.1
62.5°	2655.9	2670.9	3310.2	4269.2	4665.8
65°	2274.3	2346.3	2980.5	3944.5	4302.6
67.5°	1917.9	2043.4	2644.2	3646.6	3834.0
70°	1536.3	1748.8	2314.5	3296.8	3429.0
72.5°	1186.5	1435.9	1976.4	2905.2	3091.0
75°	860.2	1139.7	1661.8	2553.8	2714.5
77.5°	579.0	863.5	1367.3	2165.5	2378.1
80°	346.4	630.9	1104.5	1805.7	2045.0
82.5°	177.4	423.4	856.8	1514.5	1728.7
85°	77.0	267.8	647.7	1256.8	1442.6
87.5°	21.8	152.3	477.0	1015.8	1173.1
90°	1.7	80.3	339.7	796.6	938.8
92.5°	1.7	38.5	239.3	602.5	711.2
95°	1.7	20.1	148.9	436.8	533.9
97.5°	1.7	11.7	90.4	309.6	391.6
100°	1.7	10.0	53.6	205.8	279.5
102.5°	1.7	11.7	36.8	130.5	182.4
105°	1.7	11.7	30.1	85.3	120.5
107.5°	3.3	11.7	26.8	63.6	83.7
110°	1.7	10.0	28.4	48.5	65.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	3.3	8.4	26.8	40.2	48.5
115°	1.7	6.7	23.4	38.5	40.2
117.5°	3.3	5.0	18.4	38.5	40.2
120°	3.3	3.3	15.1	36.8	41.8
122.5°	3.3	3.3	11.7	33.5	40.2
125°	1.7	3.3	10.0	25.1	35.1
127.5°	3.3	3.3	8.4	20.1	26.8
130°	3.3	3.3	6.7	15.1	20.1
132.5°	3.3	3.3	5.0	11.7	15.1
135°	3.3	3.3	3.3	8.4	11.7
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)