

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: P517775

Luminaire Tested: HVL8-1-LD4-2HI-35-UNV-C-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: P517775
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-2HI-35-UNV-C-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1879.0 lumens
Efficiency: N/A
Efficacy: 87.4 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

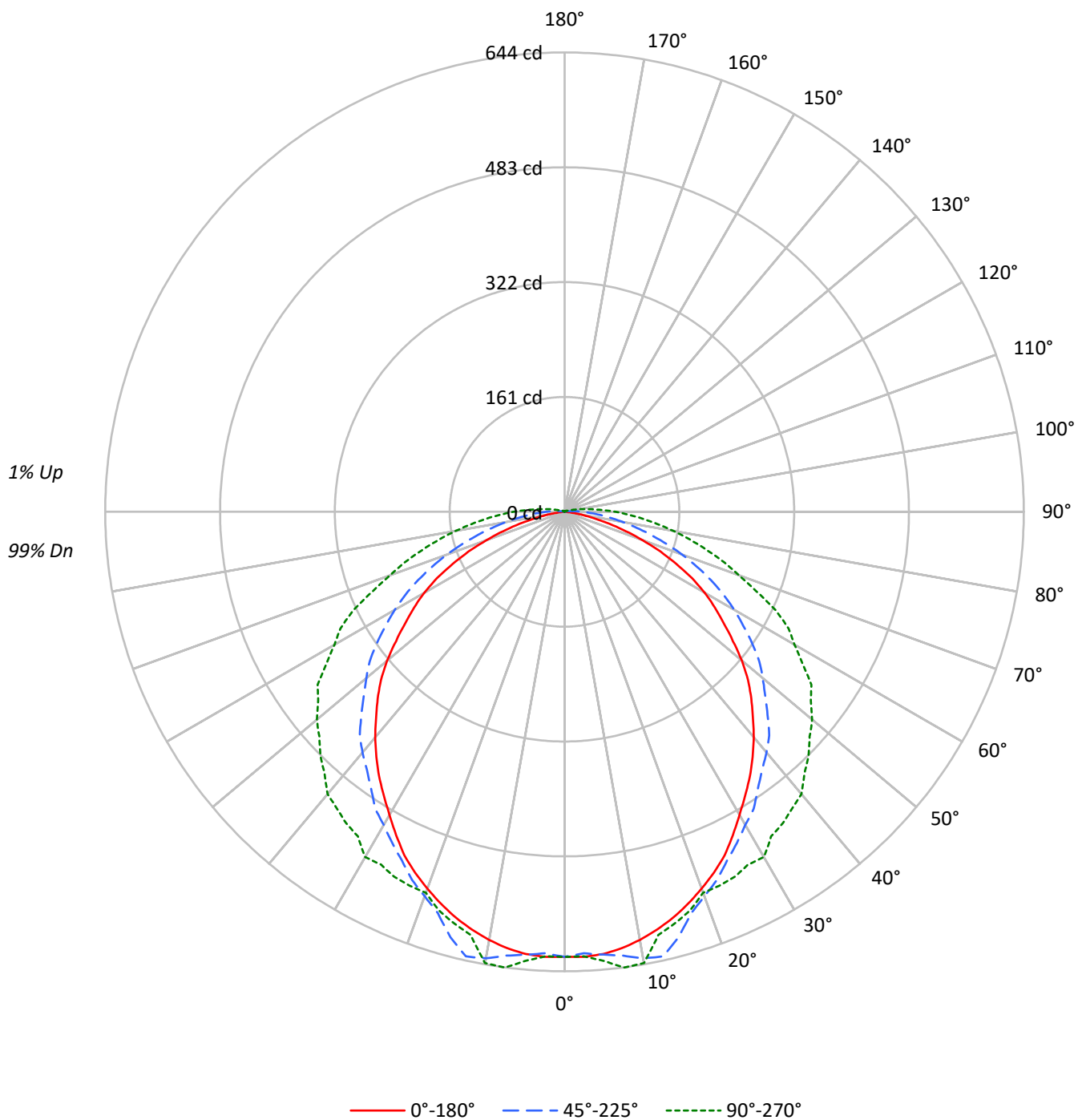
Input Watts (W): 21.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	10070	10070	10070
5°	9939	9845	10022
10°	9703	9904	10083
15°	9423	9566	9359
20°	9107	8896	8950
25°	8781	8448	9006
30°	8344	8078	9105
35°	7999	7725	8945
40°	7635	7444	9000
45°	7249	7100	8837
50°	6800	6743	8770
55°	6203	6363	8766
60°	5698	5871	8391
65°	4860	5298	8125
70°	3775	4583	7284
75°	2511	3749	6651
80°	1257	2920	5972
85°	370	2087	5258

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 8837 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	59.9	3.2
10°-20°	170.7	9.1
20°-30°	254.0	13.5
30°-40°	305.3	16.2
40°-50°	321.4	17.1
50°-60°	298.2	15.9
60°-70°	235.8	12.5
70°-80°	144.0	7.7
80°-90°	62.8	3.3
90°-100°	19.5	1.0
100°-110°	4.4	0.2
110°-120°	1.8	0.1
120°-130°	1.0	0.1
130°-140°	0.3	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°	484.7	25.8
0°-40°	790.0	42.0
0°-60°	1409.5	75.0
0°-90°	1852.1	98.6
90°-120°	25.7	1.4
90°-150°	27.0	1.4
90°-180°	27.0	1.4
0°-180°	1879.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	624	624	624	624	624	
5°	622	621	623	630	632	59
15°	589	612	618	597	597	166
25°	531	565	539	556	564	244
35°	453	466	473	516	533	283
45°	370	372	403	466	484	286
55°	273	277	321	392	423	245
65°	173	178	226	300	327	171
75°	65	86	126	194	206	71
85°	6	20	49	95	110	9
90°	0	6	26	60	71	0
95°	0	2	11	33	40	0
105°	0	1	2	6	9	0
115°	0	0	2	3	3	0
125°	0	0	1	2	3	0
135°	0	0	0	1	1	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°	623.7	623.7	623.7	623.7	623.7
2.5°	624.5	622.8	619.4	622.7	623.6
5°	622.2	620.9	623.1	630.1	631.9
7.5°	617.0	621.8	627.5	640.2	644.3
10°	609.2	618.4	635.5	646.3	642.1
12.5°	599.8	615.3	638.3	617.2	607.5
15°	588.9	611.5	617.5	597.0	597.4
17.5°	576.1	608.4	589.9	589.4	585.7
20°	562.2	597.7	573.3	572.3	568.3
22.5°	547.4	583.6	558.5	556.5	567.2
25°	531.2	565.2	539.4	555.5	564.5
27.5°	511.0	541.0	523.4	546.2	557.5
30°	490.6	516.1	507.0	538.9	558.9
32.5°	471.4	490.1	493.5	536.1	539.4
35°	453.2	465.8	472.8	515.7	533.3
37.5°	433.3	436.7	455.2	507.2	524.1
40°	412.9	410.8	440.5	493.2	516.6
42.5°	391.1	390.3	424.9	486.2	497.9
45°	370.4	372.0	402.6	466.4	483.8
47.5°	349.2	351.3	381.6	444.7	466.3
50°	324.5	327.3	362.7	425.4	453.2
52.5°	297.8	303.2	344.5	407.1	435.2
55°	272.8	277.2	321.2	391.5	422.6
57.5°	249.9	252.6	297.2	371.8	395.3
60°	227.4	228.1	274.6	349.9	372.4
62.5°	201.6	202.8	251.3	324.1	354.2
65°	172.7	178.1	226.3	299.5	326.7
67.5°	145.6	155.1	200.8	276.9	291.1
70°	116.6	132.8	175.7	250.3	260.3
72.5°	90.1	109.0	150.1	220.6	234.7
75°	65.3	86.5	126.2	193.9	206.1
77.5°	44.0	65.6	103.8	164.4	180.5
80°	26.3	47.9	83.9	137.1	155.3
82.5°	13.5	32.1	65.1	115.0	131.3
85°	5.8	20.3	49.2	95.4	109.5
87.5°	1.7	11.6	36.2	77.1	89.1
90°	0.1	6.1	25.8	60.5	71.3
92.5°	0.1	2.9	18.2	45.7	54.0
95°	0.1	1.5	11.3	33.2	40.5
97.5°	0.1	0.9	6.9	23.5	29.7
100°	0.1	0.8	4.1	15.6	21.2
102.5°	0.1	0.9	2.8	9.9	13.8
105°	0.1	0.9	2.3	6.5	9.1
107.5°	0.3	0.9	2.0	4.8	6.4
110°	0.1	0.8	2.2	3.7	5.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.6	2.0	3.0	3.7
115°	0.1	0.5	1.8	2.9	3.0
117.5°	0.3	0.4	1.4	2.9	3.0
120°	0.3	0.3	1.1	2.8	3.2
122.5°	0.3	0.3	0.9	2.5	3.0
125°	0.1	0.3	0.8	1.9	2.7
127.5°	0.3	0.3	0.6	1.5	2.0
130°	0.3	0.3	0.5	1.1	1.5
132.5°	0.3	0.3	0.4	0.9	1.1
135°	0.3	0.3	0.3	0.6	0.9
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)