

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: P517804

Luminaire Tested: HVL8-1-LD4-2STD-30-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: P517804
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-2STD-30-UNV-C-EDD
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1663.0 lumens
Efficiency: N/A
Efficacy: 102.0 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

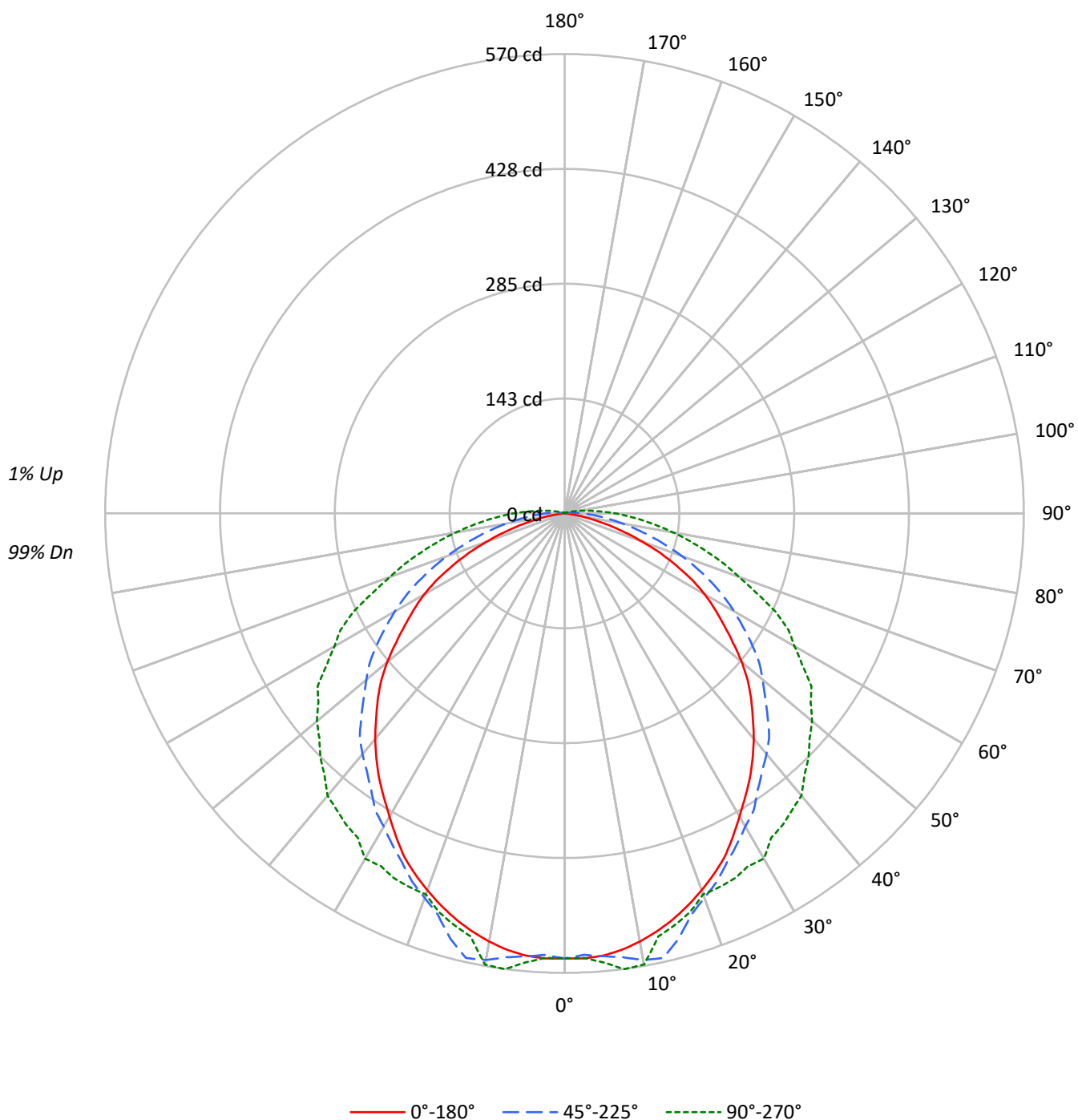
Input Watts (W): 16.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		101
1	108	103	98	94	105	100	96	92	96	92	89		91	89	86		87
2	98	89	82	76	95	87	80	75	83	78	73		80	75	71		76
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		67
4	81	69	60	53	79	67	59	52	65	57	51		62	56	51		60
5	75	61	52	45	72	60	51	45	58	50	44		56	49	44		54
6	69	55	46	39	67	54	46	39	52	45	39		50	44	38		49
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		44
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		41
9	55	42	34	28	54	41	33	28	40	33	28		39	32	27		38
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		35

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8913	8913	8913
5°	8797	8714	8869
10°	8588	8767	8924
15°	8340	8466	8283
20°	8061	7874	7922
25°	7772	7477	7971
30°	7384	7149	8059
35°	7080	6836	7917
40°	6758	6589	7965
45°	6415	6286	7822
50°	6018	5967	7762
55°	5489	5632	7758
60°	5044	5195	7427
65°	4300	4689	7190
70°	3341	4056	6447
75°	2223	3319	5886
80°	1114	2583	5283
85°	332	1845	4653

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 7822 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	53.1	3.2
10°-20°	151.1	9.1
20°-30°	224.8	13.5
30°-40°	270.2	16.2
40°-50°	284.4	17.1
50°-60°	263.9	15.9
60°-70°	208.7	12.5
70°-80°	127.5	7.7
80°-90°	55.5	3.3
90°-100°	17.3	1.0
100°-110°	3.9	0.2
110°-120°	1.6	0.1
120°-130°	0.9	0.1
130°-140°	0.2	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°	428.9	25.8
0°-40°	699.2	42.0
0°-60°	1247.5	75.0
0°-90°	1639.2	98.6
90°-120°	22.7	1.4
90°-150°	23.8	1.4
90°-180°	24.0	1.4
0°-180°	1663.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	552	552	552	552	552	
5°	551	550	552	558	559	52
15°	521	541	546	528	529	147
25°	470	500	477	492	500	216
35°	401	412	418	456	472	251
45°	328	329	356	413	428	253
55°	241	245	284	346	374	217
65°	153	158	200	265	289	151
75°	58	77	112	172	182	63
85°	5	18	44	84	97	8
90°	0	5	23	54	63	0
95°	0	1	10	29	36	0
105°	0	1	2	6	8	0
115°	0	0	2	3	3	0
125°	0	0	1	2	2	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°	552.0	552.0	552.0	552.0	552.0
2.5°	552.7	551.2	548.2	551.1	551.9
5°	550.7	549.6	551.5	557.6	559.2
7.5°	546.1	550.3	555.4	566.6	570.2
10°	539.2	547.3	562.5	572.0	568.3
12.5°	530.9	544.6	565.0	546.3	537.6
15°	521.2	541.2	546.5	528.4	528.7
17.5°	509.9	538.4	522.1	521.7	518.4
20°	497.6	529.0	507.4	506.5	503.0
22.5°	484.4	516.5	494.3	492.5	502.0
25°	470.2	500.2	477.4	491.6	499.6
27.5°	452.3	478.8	463.2	483.4	493.4
30°	434.2	456.8	448.7	476.9	494.7
32.5°	417.2	433.7	436.8	474.4	477.4
35°	401.1	412.2	418.4	456.4	472.0
37.5°	383.5	386.5	402.9	448.9	463.9
40°	365.5	363.6	389.9	436.5	457.2
42.5°	346.1	345.5	376.0	430.4	440.7
45°	327.8	329.3	356.4	412.8	428.2
47.5°	309.0	310.9	337.7	393.6	412.7
50°	287.2	289.7	321.0	376.5	401.1
52.5°	263.6	268.3	304.9	360.3	385.1
55°	241.4	245.4	284.3	346.5	374.0
57.5°	221.2	223.6	263.0	329.0	349.8
60°	201.3	201.9	243.0	309.7	329.6
62.5°	178.5	179.5	222.4	286.9	313.5
65°	152.8	157.7	200.3	265.0	289.1
67.5°	128.9	137.3	177.7	245.0	257.6
70°	103.2	117.5	155.5	221.5	230.4
72.5°	79.7	96.5	132.8	195.2	207.7
75°	57.8	76.6	111.7	171.6	182.4
77.5°	38.9	58.0	91.9	145.5	159.8
80°	23.3	42.4	74.2	121.3	137.4
82.5°	11.9	28.5	57.6	101.8	116.2
85°	5.2	18.0	43.5	84.5	96.9
87.5°	1.5	10.2	32.0	68.3	78.8
90°	0.1	5.4	22.8	53.5	63.1
92.5°	0.1	2.6	16.1	40.5	47.8
95°	0.1	1.3	10.0	29.3	35.9
97.5°	0.1	0.8	6.1	20.8	26.3
100°	0.1	0.7	3.6	13.8	18.8
102.5°	0.1	0.8	2.5	8.8	12.3
105°	0.1	0.8	2.0	5.7	8.1
107.5°	0.2	0.8	1.8	4.3	5.6
110°	0.1	0.7	1.9	3.3	4.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.6	1.8	2.7	3.3
115°	0.1	0.4	1.6	2.6	2.7
117.5°	0.2	0.3	1.2	2.6	2.7
120°	0.2	0.2	1.0	2.5	2.8
122.5°	0.2	0.2	0.8	2.2	2.7
125°	0.1	0.2	0.7	1.7	2.4
127.5°	0.2	0.2	0.6	1.3	1.8
130°	0.2	0.2	0.4	1.0	1.3
132.5°	0.2	0.2	0.3	0.8	1.0
135°	0.2	0.2	0.2	0.6	0.8
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)