

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: P517773

Luminaire Tested: HVL8-1-LD4-2HI-30-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: P517773
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-2HI-30-UNV-O-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1679.0 lumens
Efficiency: N/A
Efficacy: 78.1 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

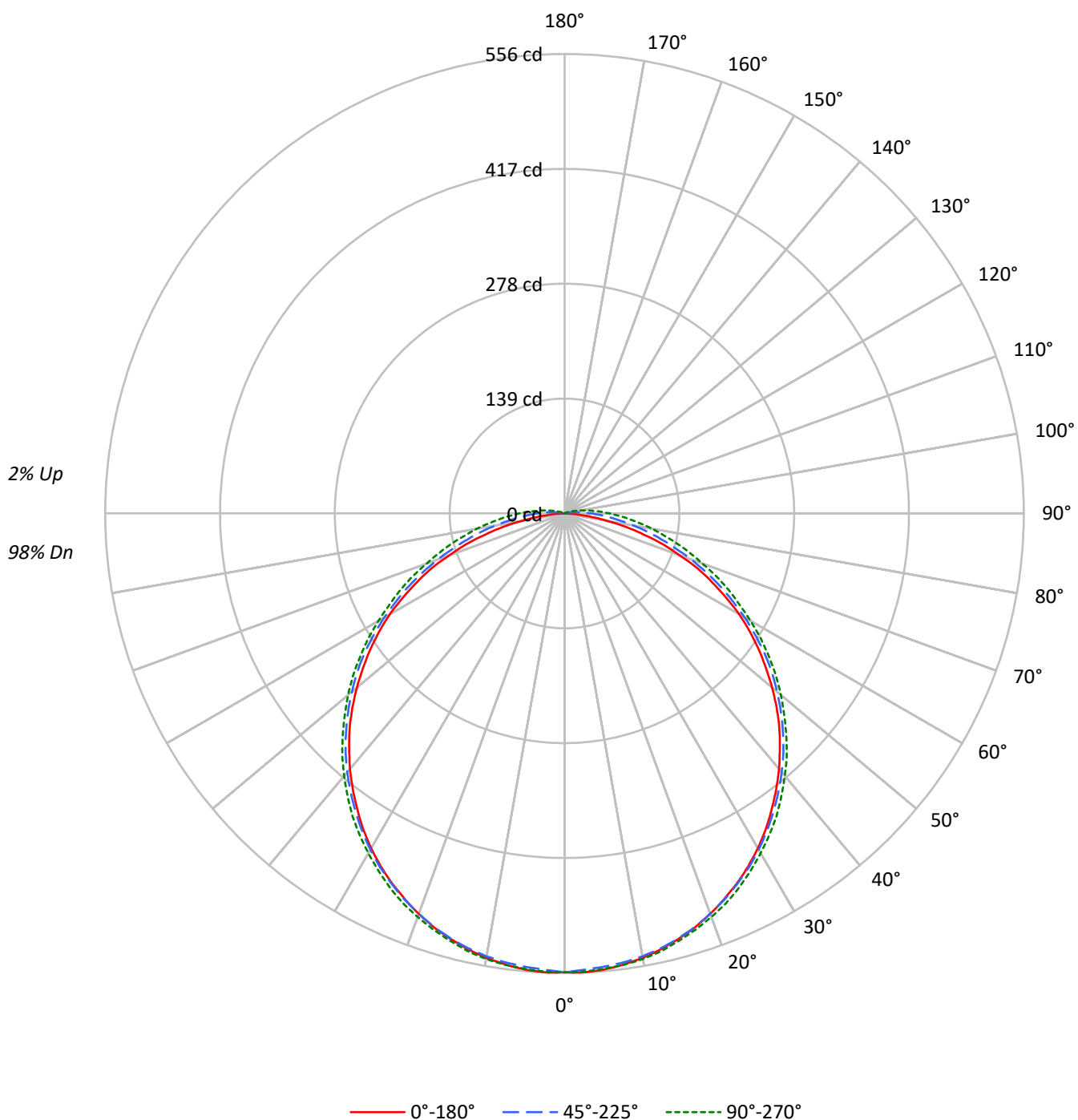
Input Watts (W): 21.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			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°	8966	8966	8966
5°	8852	8700	8774
10°	8698	8481	8599
15°	8530	8250	8387
20°	8356	8001	8183
25°	8164	7750	7974
30°	7957	7488	7737
35°	7717	7206	7503
40°	7468	6913	7230
45°	7200	6598	6934
50°	6878	6244	6616
55°	6528	5862	6266
60°	6121	5385	5859
65°	5553	4860	5454
70°	4805	4257	4981
75°	3842	3610	4553
80°	2576	2973	4164
85°	1103	2328	3789

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 7200 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	52.6	3.1
10°-20°	150.7	9.0
20°-30°	228.7	13.6
30°-40°	276.6	16.5
40°-50°	288.6	17.2
50°-60°	263.8	15.7
60°-70°	205.7	12.2
70°-80°	128.6	7.7
80°-90°	58.4	3.5
90°-100°	19.6	1.2
100°-110°	4.9	0.3
110°-120°	0.8	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°	432.0	25.7
0°-40°	708.6	42.2
0°-60°	1261.0	75.1
0°-90°	1653.7	98.5
90°-120°	25.3	1.5
90°-150°	25.3	1.5
90°-180°	25.0	1.5
0°-180°	1679.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	555	555	555	555	555	
5°	554	553	551	553	553	53
15°	533	534	532	536	535	150
25°	494	494	495	499	500	228
35°	437	439	441	446	447	274
45°	368	371	374	378	380	283
55°	287	290	296	300	302	256
65°	197	201	208	216	219	195
75°	100	106	122	136	141	106
85°	17	32	55	72	79	22
90°	0	12	32	49	54	1
95°	0	3	17	30	35	0
105°	0	0	3	8	11	0
115°	0	0	0	1	2	0
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°	555.3	555.3	555.3	555.3	555.3
2.5°	556.0	555.2	552.7	555.2	555.0
5°	554.1	553.1	550.6	553.2	553.2
7.5°	550.5	550.1	547.9	550.9	550.9
10°	546.1	546.0	544.2	547.5	547.6
12.5°	540.1	540.7	538.9	542.1	542.5
15°	533.1	534.0	532.5	535.5	535.4
17.5°	525.3	525.9	524.8	528.2	528.1
20°	515.8	516.4	515.6	519.2	519.6
22.5°	505.2	506.1	506.0	509.6	510.7
25°	493.9	494.3	494.8	499.0	499.8
27.5°	481.5	482.1	483.1	486.8	487.6
30°	467.9	468.9	470.0	473.9	474.9
32.5°	453.5	454.5	455.8	460.9	461.5
35°	437.2	439.2	441.0	445.5	447.3
37.5°	421.0	423.5	425.2	429.9	431.3
40°	403.9	406.3	409.1	414.1	415.0
42.5°	385.9	388.8	392.1	396.5	398.1
45°	367.9	371.1	374.1	377.8	379.6
47.5°	348.3	351.6	355.3	359.5	360.7
50°	328.2	332.0	335.9	339.8	341.9
52.5°	307.5	312.1	316.5	320.7	322.7
55°	287.1	290.5	295.9	300.2	302.1
57.5°	265.9	268.8	273.6	280.7	281.7
60°	244.3	246.9	251.9	257.6	260.0
62.5°	220.4	224.0	229.2	236.6	238.6
65°	197.3	200.7	207.6	215.9	219.3
67.5°	174.9	176.1	185.0	193.6	199.1
70°	148.4	152.9	163.2	173.8	178.0
72.5°	125.7	130.1	141.5	153.9	159.2
75°	99.9	106.0	121.5	136.0	141.1
77.5°	77.2	84.0	103.2	117.8	123.7
80°	53.9	64.5	85.4	101.8	108.3
82.5°	33.9	47.0	69.3	86.5	92.2
85°	17.3	31.9	54.9	72.5	78.9
87.5°	4.6	20.7	42.7	59.6	66.1
90°	0.1	11.9	32.3	48.6	54.5
92.5°	0.1	6.7	24.1	38.6	44.6
95°	0.1	3.1	16.8	30.4	35.1
97.5°	0.1	1.3	11.5	22.9	27.6
100°	0.1	0.7	7.3	16.6	20.7
102.5°	0.3	0.4	4.6	11.9	15.2
105°	0.3	0.4	2.7	8.1	10.9
107.5°	0.3	0.4	1.6	5.5	7.5
110°	0.4	0.4	0.9	3.4	5.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.4	0.4	0.5	2.2	3.3
115°	0.4	0.4	0.5	1.4	2.1
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)