

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: P517780

Luminaire Tested: HVL8-1-LD4-2HI-40-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: P517780
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-2HI-40-UNV-C-EDD
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

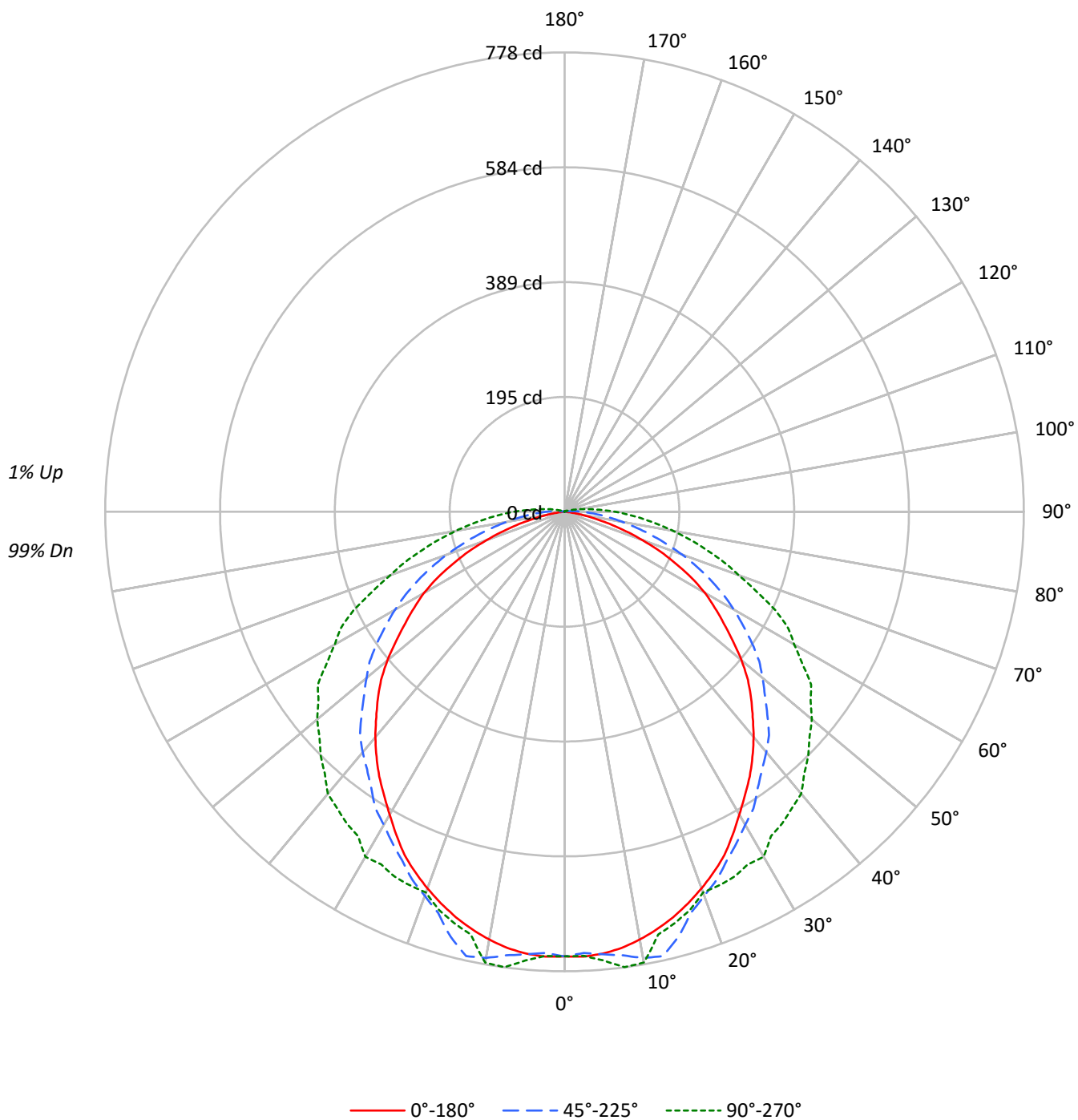
Lumens per Lamp: N/A
Luminaire Lumens: 2268.0 lumens
Efficiency: N/A
Efficacy: 105.5 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.36
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

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°	12156	12156	12156
5°	11997	11883	12097
10°	11713	11955	12171
15°	11373	11546	11297
20°	10993	10738	10804
25°	10599	10196	10872
30°	10070	9749	10990
35°	9655	9325	10797
40°	9216	8985	10864
45°	8748	8571	10667
50°	8208	8139	10585
55°	7487	7681	10581
60°	6878	7085	10128
65°	5865	6393	9806
70°	4559	5533	8792
75°	3030	4525	8029
80°	1515	3523	7206
85°	453	2519	6348

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 10667 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	72.4	3.2
10°-20°	206.1	9.1
20°-30°	306.6	13.5
30°-40°	368.5	16.2
40°-50°	387.9	17.1
50°-60°	359.9	15.9
60°-70°	284.6	12.5
70°-80°	173.8	7.7
80°-90°	75.7	3.3
90°-100°	23.6	1.0
100°-110°	5.3	0.2
110°-120°	2.1	0.1
120°-130°	1.2	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°	585.0	25.8
0°-40°	953.5	42.0
0°-60°	1701.3	75.0
0°-90°	2235.5	98.6
90°-120°	31.0	1.4
90°-150°	32.5	1.4
90°-180°	33.0	1.5
0°-180°	2268.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	753	753	753	753	753	
5°	751	750	752	760	763	71
15°	711	738	745	721	721	200
25°	641	682	651	670	681	294
35°	547	562	571	622	644	342
45°	447	449	486	563	584	345
55°	329	335	388	472	510	296
65°	208	215	273	362	394	206
75°	79	104	152	234	249	86
85°	7	24	59	115	132	11
90°	0	7	31	73	86	0
95°	0	2	14	40	49	0
105°	0	1	3	8	11	0
115°	0	1	2	4	4	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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CATALOG NUMBER: HVL8-1-LD4-2HI-40-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	752.9	752.9	752.9	752.9	752.9
2.5°	753.8	751.8	747.6	751.6	752.7
5°	751.0	749.5	752.1	760.5	762.7
7.5°	744.7	750.6	757.5	772.8	777.7
10°	735.4	746.4	767.1	780.2	775.1
12.5°	724.0	742.7	770.5	745.0	733.2
15°	710.8	738.1	745.3	720.6	721.1
17.5°	695.3	734.3	712.1	711.4	707.0
20°	678.6	721.4	692.0	690.7	686.0
22.5°	660.7	704.4	674.2	671.7	684.6
25°	641.2	682.2	651.0	670.5	681.4
27.5°	616.8	653.0	631.7	659.3	673.0
30°	592.1	623.0	611.9	650.4	674.6
32.5°	569.0	591.5	595.7	647.0	651.0
35°	547.0	562.2	570.7	622.5	643.7
37.5°	523.0	527.1	549.5	612.2	632.6
40°	498.4	495.8	531.7	595.4	623.6
42.5°	472.0	471.1	512.8	586.9	601.0
45°	447.0	449.0	486.0	563.0	584.0
47.5°	421.4	424.0	460.5	536.8	562.8
50°	391.7	395.1	437.8	513.5	547.0
52.5°	359.5	365.9	415.8	491.4	525.3
55°	329.3	334.6	387.7	472.5	510.1
57.5°	301.7	304.9	358.7	448.7	477.1
60°	274.5	275.3	331.4	422.4	449.5
62.5°	243.4	244.8	303.3	391.2	427.6
65°	208.4	215.0	273.1	361.5	394.3
67.5°	175.8	187.3	242.3	334.2	351.4
70°	140.8	160.3	212.1	302.1	314.2
72.5°	108.7	131.6	181.1	266.2	283.3
75°	78.8	104.4	152.3	234.0	248.8
77.5°	53.1	79.1	125.3	198.5	217.9
80°	31.7	57.8	101.2	165.5	187.4
82.5°	16.3	38.8	78.5	138.8	158.4
85°	7.1	24.5	59.4	115.2	132.2
87.5°	2.0	14.0	43.7	93.1	107.5
90°	0.2	7.4	31.1	73.0	86.0
92.5°	0.2	3.5	21.9	55.2	65.2
95°	0.2	1.8	13.6	40.0	48.9
97.5°	0.2	1.1	8.3	28.4	35.9
100°	0.2	0.9	4.9	18.9	25.6
102.5°	0.2	1.1	3.4	12.0	16.7
105°	0.2	1.1	2.8	7.8	11.0
107.5°	0.3	1.1	2.5	5.8	7.7
110°	0.2	0.9	2.6	4.4	6.0

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CATALOG NUMBER: HVL8-1-LD4-2HI-40-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.8	2.5	3.7	4.4
115°	0.2	0.6	2.1	3.5	3.7
117.5°	0.3	0.5	1.7	3.5	3.7
120°	0.3	0.3	1.4	3.4	3.8
122.5°	0.3	0.3	1.1	3.1	3.7
125°	0.2	0.3	0.9	2.3	3.2
127.5°	0.3	0.3	0.8	1.8	2.5
130°	0.3	0.3	0.6	1.4	1.8
132.5°	0.3	0.3	0.5	1.1	1.4
135°	0.3	0.3	0.3	0.8	1.1
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)