

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: P517844

Luminaire Tested: HVL8-1-LD4-3LO-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: P517844
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-3LO-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: 2158.0 lumens
Efficiency: N/A
Efficacy: 128.5 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

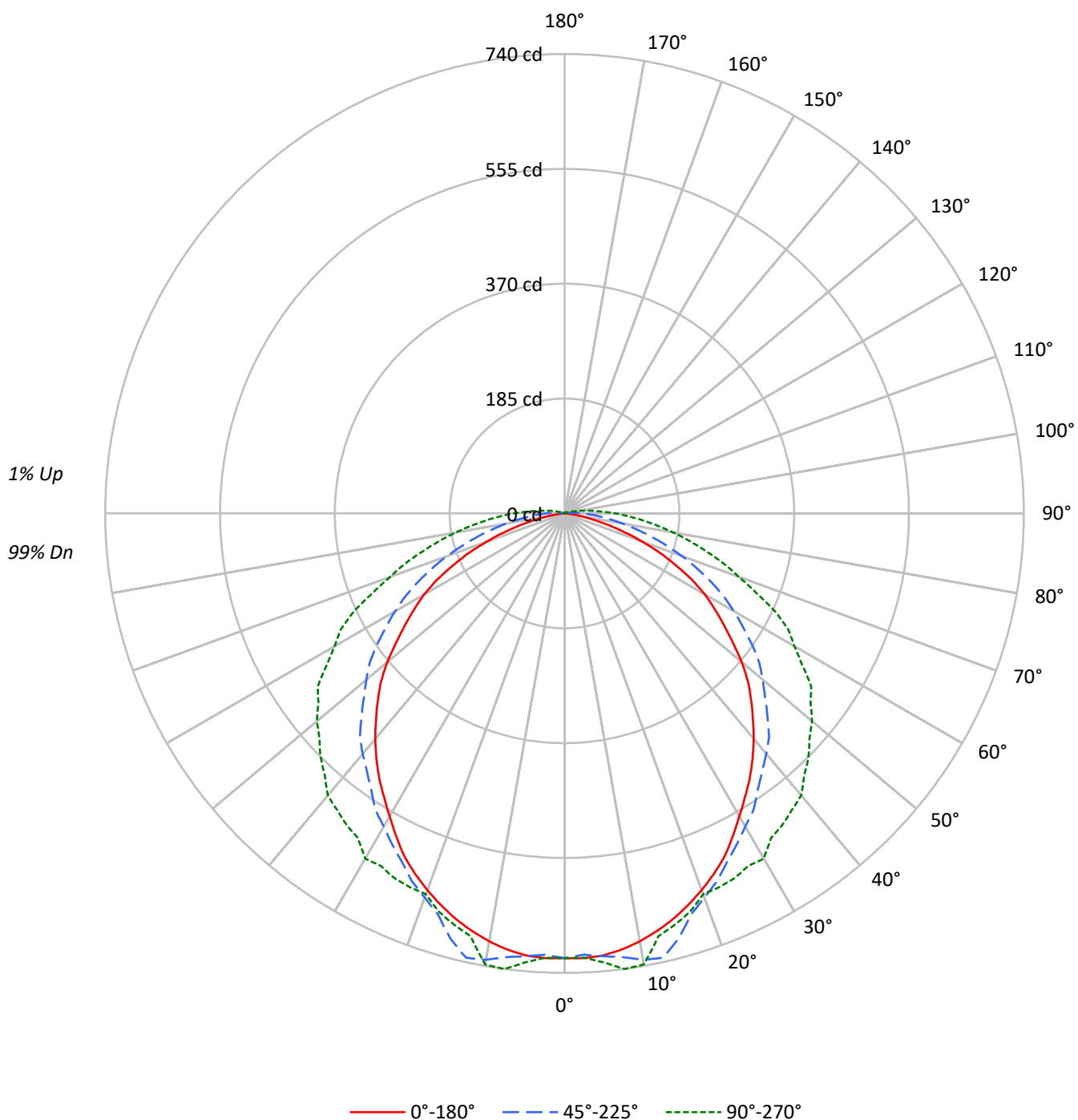
Input Watts (W): 16.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	11565	11565	11565
5°	11415	11307	11510
10°	11144	11376	11581
15°	10823	10987	10748
20°	10460	10217	10279
25°	10085	9701	10343
30°	9582	9276	10458
35°	9187	8872	10272
40°	8770	8549	10336
45°	8326	8155	10151
50°	7810	7745	10073
55°	7123	7309	10066
60°	6545	6741	9637
65°	5581	6084	9331
70°	4339	5264	8367
75°	2884	4305	7638
80°	1443	3352	6856
85°	427	2396	6041

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 10151 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	68.8	3.2
10°-20°	196.1	9.1
20°-30°	291.7	13.5
30°-40°	350.6	16.2
40°-50°	369.1	17.1
50°-60°	342.5	15.9
60°-70°	270.8	12.5
70°-80°	165.4	7.7
80°-90°	72.1	3.3
90°-100°	22.4	1.0
100°-110°	5.0	0.2
110°-120°	2.0	0.1
120°-130°	1.1	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°	556.6	25.8
0°-40°	907.3	42.0
0°-60°	1618.8	75.0
0°-90°	2127.1	98.6
90°-120°	29.5	1.4
90°-150°	30.9	1.4
90°-180°	31.0	1.4
0°-180°	2158.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	716	716	716	716	716	
5°	715	713	716	724	726	68
15°	676	702	709	686	686	191
25°	610	649	619	638	648	280
35°	520	535	543	592	612	325
45°	425	427	462	536	556	328
55°	313	318	369	450	485	281
65°	198	205	260	344	375	196
75°	75	99	145	223	237	82
85°	7	23	56	110	126	10
90°	0	7	30	70	82	0
95°	0	2	13	38	46	0
105°	0	1	3	7	10	0
115°	0	1	2	3	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-LD4-3LO-40-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	716.3	716.3	716.3	716.3	716.3
2.5°	717.2	715.3	711.4	715.2	716.2
5°	714.6	713.1	715.6	723.6	725.7
7.5°	708.6	714.1	720.7	735.3	740.0
10°	699.7	710.2	729.9	742.3	737.5
12.5°	688.9	706.7	733.1	708.9	697.7
15°	676.4	702.3	709.2	685.7	686.1
17.5°	661.6	698.7	677.5	676.9	672.7
20°	645.7	686.4	658.4	657.2	652.7
22.5°	628.6	670.2	641.5	639.1	651.4
25°	610.1	649.1	619.4	638.0	648.3
27.5°	586.9	621.3	601.1	627.3	640.3
30°	563.4	592.7	582.2	618.9	641.9
32.5°	541.4	562.8	566.8	615.7	619.4
35°	520.5	535.0	543.0	592.3	612.4
37.5°	497.6	501.5	522.8	582.5	601.9
40°	474.3	471.8	505.9	566.5	593.3
42.5°	449.2	448.3	488.0	558.4	571.9
45°	425.4	427.3	462.4	535.7	555.7
47.5°	401.0	403.5	438.2	510.7	535.5
50°	372.7	375.9	416.6	488.6	520.5
52.5°	342.0	348.2	395.6	467.5	499.8
55°	313.3	318.4	368.9	449.6	485.3
57.5°	287.0	290.1	341.3	427.0	454.0
60°	261.2	261.9	315.3	401.9	427.7
62.5°	231.6	232.9	288.6	372.3	406.8
65°	198.3	204.6	259.9	343.9	375.2
67.5°	167.2	178.2	230.6	318.0	334.3
70°	134.0	152.5	201.8	287.5	299.0
72.5°	103.5	125.2	172.3	253.3	269.5
75°	75.0	99.4	144.9	222.7	236.7
77.5°	50.5	75.3	119.2	188.8	207.4
80°	30.2	55.0	96.3	157.5	178.3
82.5°	15.5	36.9	74.7	132.1	150.7
85°	6.7	23.3	56.5	109.6	125.8
87.5°	1.9	13.3	41.6	88.6	102.3
90°	0.1	7.0	29.6	69.5	81.9
92.5°	0.1	3.4	20.9	52.5	62.0
95°	0.1	1.8	13.0	38.1	46.5
97.5°	0.1	1.0	7.9	27.0	34.1
100°	0.1	0.9	4.7	17.9	24.4
102.5°	0.1	1.0	3.2	11.4	15.9
105°	0.1	1.0	2.6	7.4	10.5
107.5°	0.3	1.0	2.3	5.5	7.3
110°	0.1	0.9	2.5	4.2	5.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.7	2.3	3.5	4.2
115°	0.1	0.6	2.0	3.4	3.5
117.5°	0.3	0.4	1.6	3.4	3.5
120°	0.3	0.3	1.3	3.2	3.6
122.5°	0.3	0.3	1.0	2.9	3.5
125°	0.1	0.3	0.9	2.2	3.1
127.5°	0.3	0.3	0.7	1.8	2.3
130°	0.3	0.3	0.6	1.3	1.8
132.5°	0.3	0.3	0.4	1.0	1.3
135°	0.3	0.3	0.3	0.7	1.0
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)