

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: P517747

Luminaire Tested: HVL8-1-LD4-1LO-40-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: P517747
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-1LO-40-UNV-C-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 605.0 lumens
Efficiency: N/A
Efficacy: 104.3 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

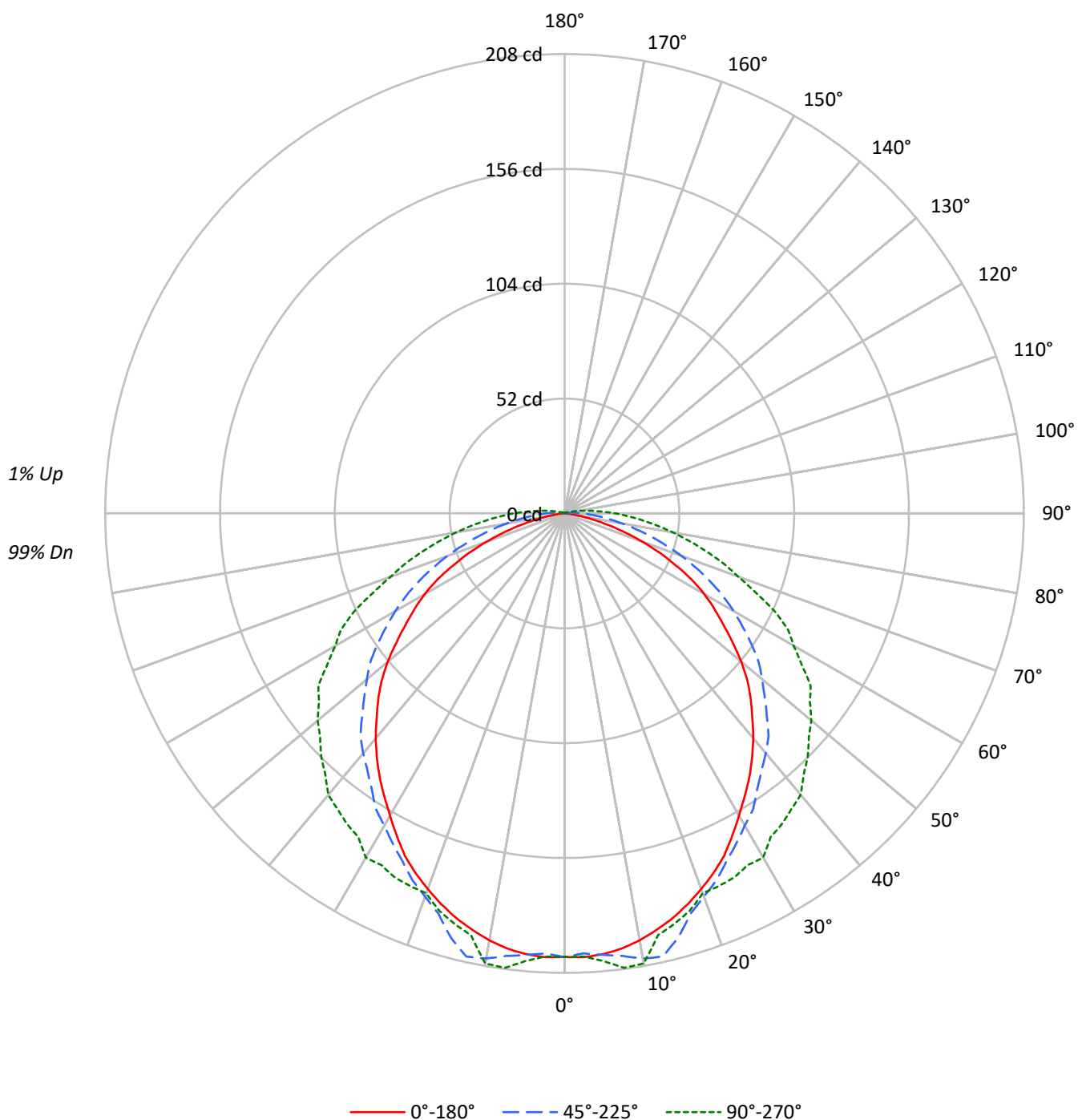
Input Watts (W): 5.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	3242	3242	3242
5°	3200	3170	3226
10°	3125	3189	3247
15°	3034	3080	3014
20°	2932	2865	2882
25°	2827	2721	2901
30°	2687	2600	2933
35°	2575	2487	2880
40°	2459	2396	2897
45°	2335	2286	2846
50°	2190	2171	2823
55°	1996	2049	2823
60°	1834	1890	2702
65°	1565	1707	2616
70°	1217	1476	2345
75°	808	1206	2143
80°	406	940	1923
85°	121	670	1695

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 2846 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	19.3	3.2
10°-20°	55.0	9.1
20°-30°	81.8	13.5
30°-40°	98.3	16.2
40°-50°	103.5	17.1
50°-60°	96.0	15.9
60°-70°	75.9	12.5
70°-80°	46.4	7.7
80°-90°	20.2	3.3
90°-100°	6.3	1.0
100°-110°	1.4	0.2
110°-120°	0.6	0.1
120°-130°	0.3	0.1
130°-140°	0.1	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°	156.1	25.8
0°-40°	254.4	42.0
0°-60°	453.8	75.0
0°-90°	596.3	98.6
90°-120°	8.3	1.4
90°-150°	8.7	1.4
90°-180°	9.0	1.5
0°-180°	605.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	201	201	201	201	201	
5°	200	200	201	203	203	19
15°	190	197	199	192	192	53
25°	171	182	174	179	182	79
35°	146	150	152	166	172	91
45°	119	120	130	150	156	92
55°	88	89	103	126	136	79
65°	56	57	73	96	105	55
75°	21	28	41	62	66	23
85°	2	6	16	31	35	3
90°	0	2	8	20	23	0
95°	0	0	4	11	13	0
105°	0	0	1	2	3	0
115°	0	0	1	1	1	0
125°	0	0	0	1	1	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°	200.8	200.8	200.8	200.8	200.8
2.5°	201.1	200.5	199.4	200.5	200.8
5°	200.3	199.9	200.6	202.9	203.4
7.5°	198.7	200.2	202.1	206.1	207.5
10°	196.2	199.1	204.6	208.1	206.8
12.5°	193.1	198.1	205.5	198.7	195.6
15°	189.6	196.9	198.8	192.2	192.4
17.5°	185.5	195.9	189.9	189.8	188.6
20°	181.0	192.4	184.6	184.3	183.0
22.5°	176.2	187.9	179.8	179.2	182.6
25°	171.0	182.0	173.7	178.9	181.8
27.5°	164.5	174.2	168.5	175.9	179.5
30°	158.0	166.2	163.2	173.5	180.0
32.5°	151.8	157.8	158.9	172.6	173.7
35°	145.9	150.0	152.2	166.1	171.7
37.5°	139.5	140.6	146.6	163.3	168.8
40°	133.0	132.3	141.8	158.8	166.3
42.5°	125.9	125.7	136.8	156.6	160.3
45°	119.3	119.8	129.6	150.2	155.8
47.5°	112.4	113.1	122.9	143.2	150.1
50°	104.5	105.4	116.8	137.0	145.9
52.5°	95.9	97.6	110.9	131.1	140.1
55°	87.8	89.3	103.4	126.0	136.1
57.5°	80.5	81.3	95.7	119.7	127.3
60°	73.2	73.4	88.4	112.7	119.9
62.5°	64.9	65.3	80.9	104.4	114.1
65°	55.6	57.4	72.9	96.4	105.2
67.5°	46.9	50.0	64.6	89.1	93.7
70°	37.6	42.8	56.6	80.6	83.8
72.5°	29.0	35.1	48.3	71.0	75.6
75°	21.0	27.9	40.6	62.4	66.4
77.5°	14.2	21.1	33.4	52.9	58.1
80°	8.5	15.4	27.0	44.1	50.0
82.5°	4.3	10.4	20.9	37.0	42.3
85°	1.9	6.5	15.8	30.7	35.3
87.5°	0.5	3.7	11.7	24.8	28.7
90°	0.0	2.0	8.3	19.5	23.0
92.5°	0.0	0.9	5.9	14.7	17.4
95°	0.0	0.5	3.6	10.7	13.1
97.5°	0.0	0.3	2.2	7.6	9.6
100°	0.0	0.2	1.3	5.0	6.8
102.5°	0.0	0.3	0.9	3.2	4.5
105°	0.0	0.3	0.7	2.1	2.9
107.5°	0.1	0.3	0.7	1.6	2.0
110°	0.0	0.2	0.7	1.2	1.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.1	0.2	0.7	1.0	1.2
115°	0.0	0.2	0.6	0.9	1.0
117.5°	0.1	0.1	0.5	0.9	1.0
120°	0.1	0.1	0.4	0.9	1.0
122.5°	0.1	0.1	0.3	0.8	1.0
125°	0.0	0.1	0.2	0.6	0.9
127.5°	0.1	0.1	0.2	0.5	0.7
130°	0.1	0.1	0.2	0.4	0.5
132.5°	0.1	0.1	0.1	0.3	0.4
135°	0.1	0.1	0.1	0.2	0.3
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)