

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: P517795

Luminaire Tested: HVL8-1-LD4-2LO-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: P517795
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-2LO-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: 1150.0 lumens
Efficiency: N/A
Efficacy: 100.0 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

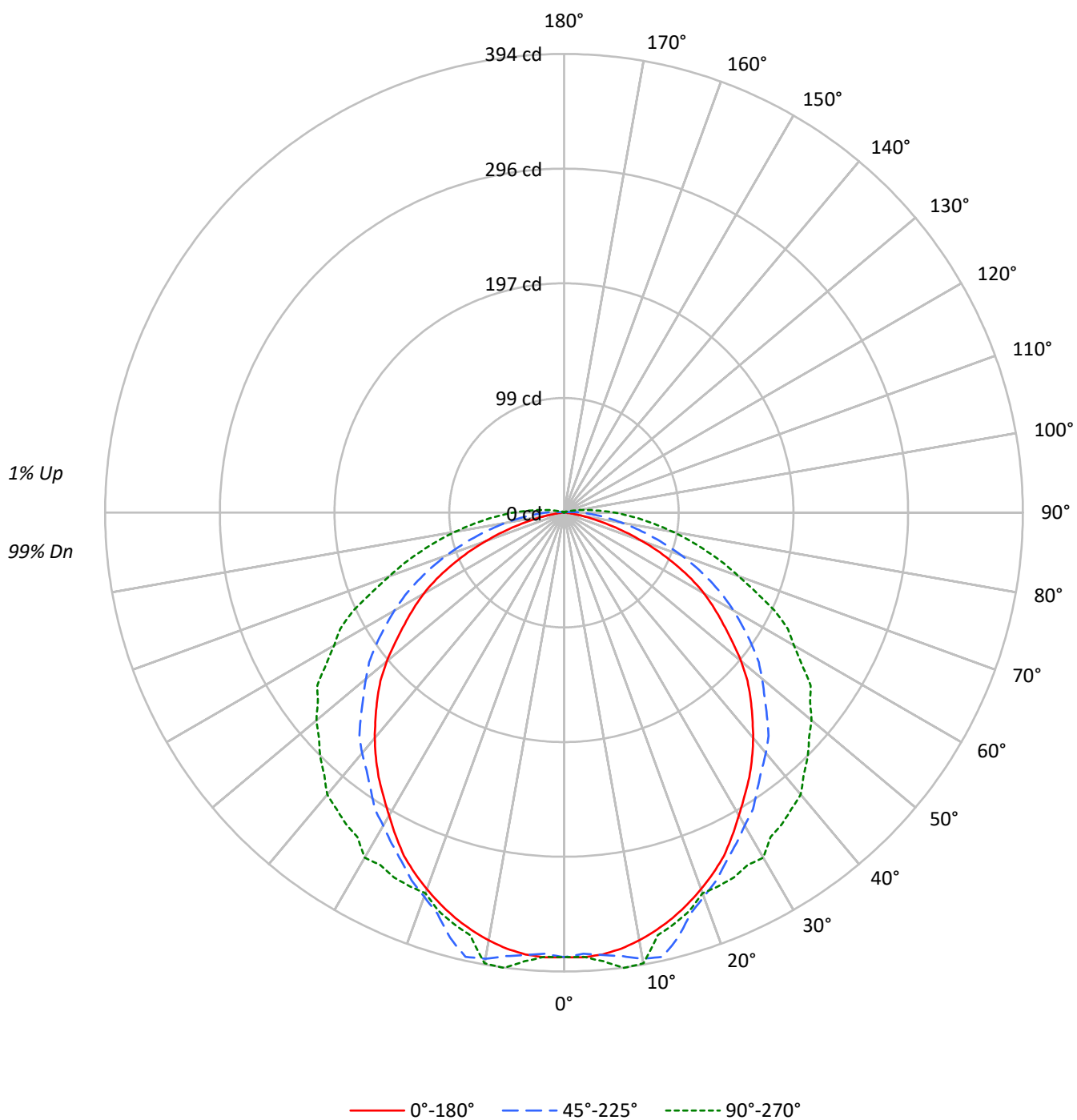
Input Watts (W): 11.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	6163	6163	6163
5°	6083	6025	6133
10°	5939	6063	6171
15°	5767	5854	5727
20°	5574	5445	5477
25°	5374	5170	5512
30°	5105	4944	5573
35°	4896	4729	5475
40°	4673	4556	5509
45°	4437	4346	5409
50°	4162	4127	5368
55°	3797	3895	5364
60°	3488	3592	5135
65°	2975	3242	4971
70°	2312	2804	4458
75°	1538	2294	4069
80°	769	1786	3653
85°	230	1277	3217

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 5409 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	36.7	3.2
10°-20°	104.5	9.1
20°-30°	155.5	13.5
30°-40°	186.9	16.2
40°-50°	196.7	17.1
50°-60°	182.5	15.9
60°-70°	144.3	12.5
70°-80°	88.1	7.7
80°-90°	38.4	3.3
90°-100°	12.0	1.0
100°-110°	2.7	0.2
110°-120°	1.1	0.1
120°-130°	0.6	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°	296.6	25.8
0°-40°	483.5	42.0
0°-60°	862.7	75.0
0°-90°	1133.5	98.6
90°-120°	15.7	1.4
90°-150°	16.5	1.4
90°-180°	17.0	1.5
0°-180°	1150.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	382	382	382	382	382	
5°	381	380	381	386	387	36
15°	360	374	378	365	366	102
25°	325	346	330	340	346	149
35°	277	285	289	316	326	173
45°	227	228	246	286	296	175
55°	167	170	197	240	259	150
65°	106	109	138	183	200	105
75°	40	53	77	119	126	44
85°	4	12	30	58	67	6
90°	0	4	16	37	44	0
95°	0	1	7	20	25	0
105°	0	0	1	4	6	0
115°	0	0	1	2	2	0
125°	0	0	0	1	2	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°	381.7	381.7	381.7	381.7	381.7
2.5°	382.2	381.2	379.1	381.1	381.7
5°	380.8	380.0	381.3	385.6	386.7
7.5°	377.6	380.6	384.1	391.8	394.3
10°	372.9	378.5	389.0	395.6	393.0
12.5°	367.1	376.6	390.7	377.8	371.8
15°	360.4	374.3	377.9	365.4	365.6
17.5°	352.6	372.3	361.1	360.7	358.5
20°	344.1	365.8	350.9	350.2	347.8
22.5°	335.0	357.2	341.8	340.6	347.1
25°	325.1	345.9	330.1	340.0	345.5
27.5°	312.8	331.1	320.3	334.3	341.2
30°	300.2	315.9	310.3	329.8	342.1
32.5°	288.5	299.9	302.0	328.1	330.1
35°	277.4	285.1	289.4	315.6	326.4
37.5°	265.2	267.3	278.6	310.4	320.8
40°	252.7	251.4	269.6	301.9	316.2
42.5°	239.4	238.9	260.0	297.6	304.8
45°	226.7	227.7	246.4	285.5	296.1
47.5°	213.7	215.0	233.5	272.2	285.4
50°	198.6	200.3	222.0	260.3	277.4
52.5°	182.3	185.5	210.8	249.2	266.3
55°	167.0	169.7	196.6	239.6	258.6
57.5°	153.0	154.6	181.9	227.5	241.9
60°	139.2	139.6	168.0	214.2	227.9
62.5°	123.4	124.1	153.8	198.4	216.8
65°	105.7	109.0	138.5	183.3	199.9
67.5°	89.1	94.9	122.9	169.4	178.2
70°	71.4	81.3	107.5	153.2	159.3
72.5°	55.1	66.7	91.8	135.0	143.6
75°	40.0	53.0	77.2	118.7	126.1
77.5°	26.9	40.1	63.5	100.6	110.5
80°	16.1	29.3	51.3	83.9	95.0
82.5°	8.2	19.7	39.8	70.4	80.3
85°	3.6	12.4	30.1	58.4	67.0
87.5°	1.0	7.1	22.2	47.2	54.5
90°	0.1	3.7	15.8	37.0	43.6
92.5°	0.1	1.8	11.1	28.0	33.0
95°	0.1	0.9	6.9	20.3	24.8
97.5°	0.1	0.5	4.2	14.4	18.2
100°	0.1	0.5	2.5	9.6	13.0
102.5°	0.1	0.5	1.7	6.1	8.5
105°	0.1	0.5	1.4	4.0	5.6
107.5°	0.2	0.5	1.2	3.0	3.9
110°	0.1	0.5	1.3	2.3	3.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.4	1.2	1.9	2.3
115°	0.1	0.3	1.1	1.8	1.9
117.5°	0.2	0.2	0.9	1.8	1.9
120°	0.2	0.2	0.7	1.7	1.9
122.5°	0.2	0.2	0.5	1.6	1.9
125°	0.1	0.2	0.5	1.2	1.6
127.5°	0.2	0.2	0.4	0.9	1.2
130°	0.2	0.2	0.3	0.7	0.9
132.5°	0.2	0.2	0.2	0.5	0.7
135°	0.2	0.2	0.2	0.4	0.5
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)