

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: P517985

Luminaire Tested: HVL8-2-LD4-3LO-35-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: P517985
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-3LO-35-UNV-O-EDD-90
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3869.0 lumens
Efficiency: N/A
Efficacy: 114.8 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 2' x H: 0.17')
CIE Type: Direct

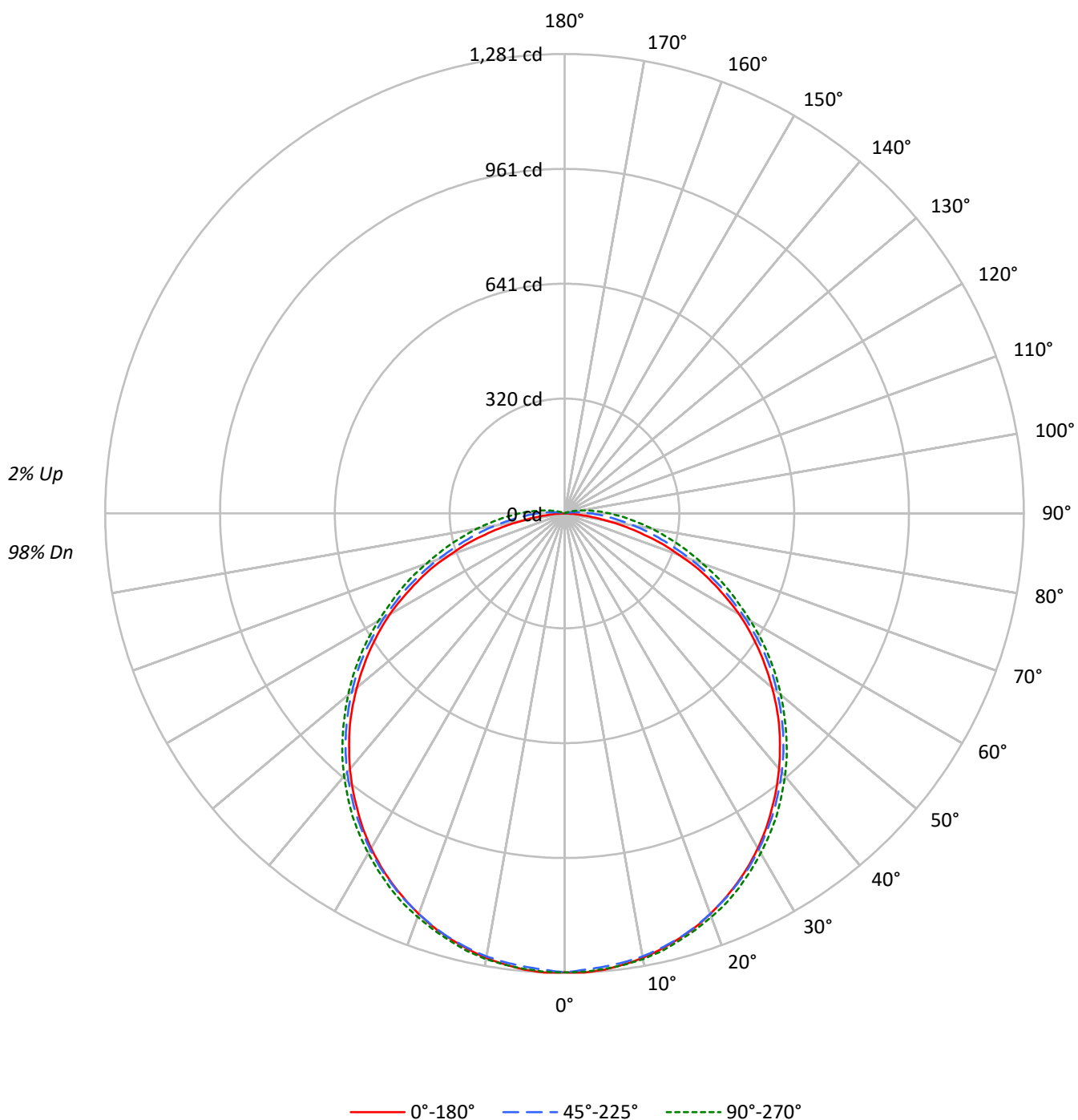
Input Watts (W): 33.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	10330	10330	10330
5°	10273	10074	10110
10°	10167	9869	9907
15°	10042	9646	9664
20°	9910	9401	9428
25°	9759	9151	9188
30°	9588	8886	8915
35°	9382	8597	8645
40°	9166	8294	8330
45°	8933	7965	7990
50°	8640	7590	7624
55°	8320	7178	7220
60°	7942	6654	6750
65°	7367	6070	6283
70°	6570	5389	5741
75°	5477	4644	5247
80°	3924	3913	4797
85°	1888	3169	4367

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 8933 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	121.1	3.1
10°-20°	347.3	9.0
20°-30°	527.0	13.6
30°-40°	637.3	16.5
40°-50°	665.0	17.2
50°-60°	608.0	15.7
60°-70°	473.9	12.2
70°-80°	296.5	7.7
80°-90°	134.7	3.5
90°-100°	45.1	1.2
100°-110°	11.3	0.3
110°-120°	1.8	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°	995.5	25.7
0°-40°	1632.8	42.2
0°-60°	2905.7	75.1
0°-90°	3810.8	98.5
90°-120°	58.2	1.5
90°-150°	58.2	1.5
90°-180°	58.0	1.5
0°-180°	3869.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1280	1280	1280	1280	1280	
5°	1277	1274	1269	1275	1275	121
15°	1228	1230	1227	1234	1234	347
25°	1138	1139	1140	1150	1152	524
35°	1008	1012	1016	1026	1031	631
45°	848	855	862	871	875	653
55°	662	669	682	692	696	591
65°	455	462	478	497	505	450
75°	230	244	280	313	325	245
85°	40	74	126	167	182	50
90°	0	28	74	112	126	2
95°	0	7	39	70	81	0
105°	1	1	6	19	25	1
115°	1	1	1	3	5	1
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°	1279.6	1279.6	1279.6	1279.6	1279.6
2.5°	1281.1	1279.3	1273.6	1279.3	1279.0
5°	1276.9	1274.5	1268.8	1274.8	1274.8
7.5°	1268.5	1267.6	1262.4	1269.4	1269.4
10°	1258.5	1258.2	1254.0	1261.5	1261.8
12.5°	1244.6	1245.8	1241.9	1249.2	1250.1
15°	1228.3	1230.5	1227.1	1234.1	1233.8
17.5°	1210.6	1211.8	1209.3	1217.2	1216.9
20°	1188.5	1190.0	1188.2	1196.4	1197.3
22.5°	1164.1	1166.2	1165.9	1174.4	1176.8
25°	1138.2	1139.1	1140.3	1149.9	1151.7
27.5°	1109.5	1111.0	1113.1	1121.9	1123.7
30°	1078.1	1080.5	1083.0	1092.0	1094.4
32.5°	1044.9	1047.4	1050.4	1062.1	1063.3
35°	1007.5	1012.1	1016.3	1026.5	1030.8
37.5°	970.1	975.9	979.8	990.6	994.0
40°	930.6	936.3	942.7	954.1	956.3
42.5°	889.3	895.9	903.5	913.7	917.3
45°	847.7	855.2	862.1	870.6	874.8
47.5°	802.7	810.3	818.7	828.4	831.1
50°	756.3	765.0	774.1	783.1	787.9
52.5°	708.6	719.2	729.4	739.1	743.6
55°	661.5	669.4	681.7	691.7	696.2
57.5°	612.7	619.3	630.5	646.8	649.2
60°	562.9	568.9	580.4	593.7	599.1
62.5°	508.0	516.1	528.2	545.1	549.9
65°	454.6	462.4	478.4	497.4	505.3
67.5°	403.0	405.7	426.2	446.2	458.8
70°	342.1	352.3	376.2	400.6	410.3
72.5°	289.6	299.8	326.1	354.7	366.8
75°	230.2	244.3	279.9	313.4	325.2
77.5°	178.0	193.7	237.7	271.5	285.1
80°	124.3	148.7	196.7	234.7	249.5
82.5°	78.1	108.3	159.6	199.4	212.4
85°	39.8	73.6	126.4	167.1	181.9
87.5°	10.6	47.7	98.3	137.3	152.3
90°	0.3	27.5	74.5	111.9	125.5
92.5°	0.3	15.4	55.5	89.0	102.9
95°	0.3	7.2	38.6	70.0	80.8
97.5°	0.3	3.0	26.5	52.8	63.6
100°	0.3	1.5	16.9	38.3	47.7
102.5°	0.6	0.9	10.6	27.5	35.0
105°	0.6	0.9	6.3	18.7	25.0
107.5°	0.6	0.9	3.6	12.7	17.2
110°	0.9	0.9	2.1	7.8	11.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.9	0.9	1.2	5.1	7.5
115°	0.9	0.9	1.2	3.3	4.8
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)