

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: P517952

Luminaire Tested: HVL8-2-LD4-2STD-35-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: P517952
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-2STD-35-UNV-C-EDD
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3490.0 lumens
Efficiency: N/A
Efficacy: 106.7 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 2' x H: 0.17')
CIE Type: Direct

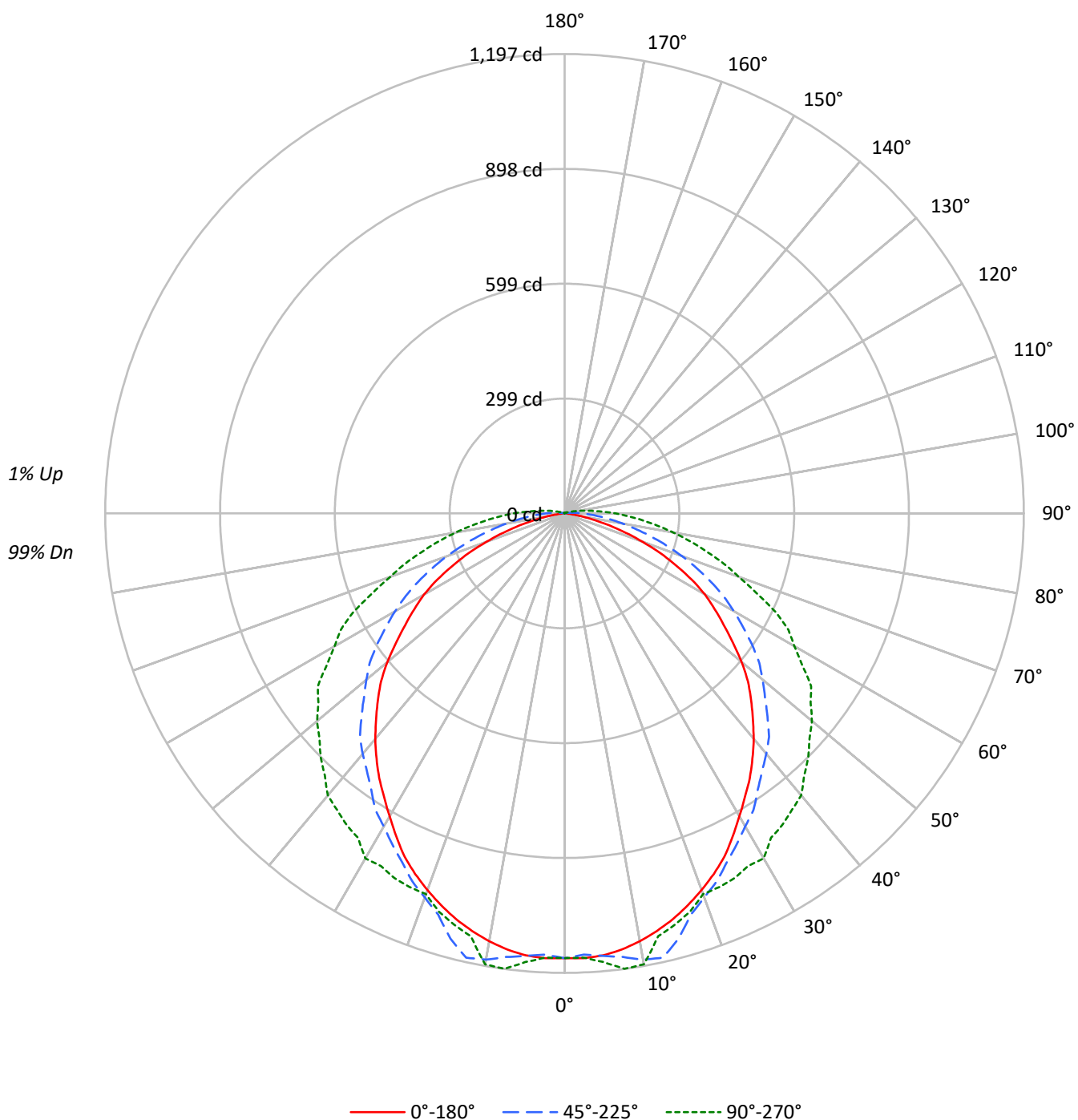
Input Watts (W): 32.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			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°	9352	9352	9352
5°	9298	9189	9307
10°	9142	9290	9364
15°	8942	9016	8691
20°	8707	8425	8312
25°	8460	8040	8364
30°	8104	7726	8456
35°	7839	7428	8307
40°	7555	7199	8358
45°	7249	6910	8208
50°	6886	6606	8145
55°	6373	6282	8140
60°	5960	5847	7793
65°	5197	5333	7544
70°	4160	4676	6765
75°	2886	3888	6176
80°	1544	3099	5545
85°	517	2289	4883

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 8208 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	111.3	3.2
10°-20°	317.1	9.1
20°-30°	471.8	13.5
30°-40°	567.1	16.2
40°-50°	596.9	17.1
50°-60°	553.8	15.9
60°-70°	437.9	12.5
70°-80°	267.5	7.7
80°-90°	116.5	3.3
90°-100°	36.3	1.0
100°-110°	8.2	0.2
110°-120°	3.3	0.1
120°-130°	1.8	0.1
130°-140°	0.5	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°	900.2	25.8
0°-40°	1467.3	42.0
0°-60°	2618.0	75.0
0°-90°	3440.0	98.6
90°-120°	47.7	1.4
90°-150°	50.1	1.4
90°-180°	50.0	1.4
0°-180°	3490.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1158	1158	1158	1158	1158	
5°	1156	1153	1157	1170	1174	110
15°	1094	1136	1147	1109	1110	308
25°	987	1050	1002	1032	1048	453
35°	842	865	878	958	990	526
45°	688	691	748	866	899	530
55°	507	515	597	727	785	455
65°	321	331	420	556	607	318
75°	121	161	234	360	383	132
85°	11	38	91	177	203	17
90°	0	11	48	112	132	1
95°	0	3	21	62	75	0
105°	0	2	4	12	17	0
115°	0	1	3	5	6	0
125°	0	0	1	4	5	0
135°	0	0	0	1	2	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°	1158.5	1158.5	1158.5	1158.5	1158.5
2.5°	1159.9	1156.8	1150.5	1156.6	1158.3
5°	1155.7	1153.3	1157.3	1170.3	1173.6
7.5°	1146.0	1155.0	1165.6	1189.2	1196.7
10°	1131.6	1148.6	1180.4	1200.5	1192.7
12.5°	1114.1	1142.9	1185.6	1146.5	1128.3
15°	1093.8	1135.8	1146.9	1108.9	1109.6
17.5°	1070.0	1129.9	1095.7	1094.8	1087.9
20°	1044.3	1110.1	1064.8	1062.9	1055.6
22.5°	1016.7	1083.9	1037.4	1033.6	1053.5
25°	986.7	1049.7	1001.8	1031.8	1048.5
27.5°	949.2	1004.9	972.1	1014.5	1035.5
30°	911.2	958.6	941.6	1000.8	1038.1
32.5°	875.5	910.2	916.6	995.7	1001.8
35°	841.8	865.2	878.1	957.9	990.5
37.5°	804.7	811.1	845.6	942.1	973.5
40°	767.0	763.0	818.2	916.1	959.5
42.5°	726.4	725.0	789.2	903.1	924.9
45°	687.9	691.0	747.9	866.3	898.7
47.5°	648.5	652.5	708.7	826.0	866.1
50°	602.7	607.9	673.8	790.1	841.8
52.5°	553.2	563.1	639.8	756.1	808.3
55°	506.7	514.9	596.6	727.1	784.9
57.5°	464.2	469.2	552.0	690.5	734.2
60°	422.4	423.6	510.0	649.9	691.7
62.5°	374.5	376.6	466.8	602.0	657.9
65°	320.7	330.9	420.3	556.2	606.7
67.5°	270.4	288.1	372.9	514.2	540.7
70°	216.6	246.6	326.4	464.9	483.5
72.5°	167.3	202.5	278.7	409.7	435.9
75°	121.3	160.7	234.3	360.1	382.8
77.5°	81.7	121.8	192.8	305.4	335.3
80°	48.9	89.0	155.8	254.6	288.4
82.5°	25.0	59.7	120.8	213.6	243.8
85°	10.9	37.8	91.3	177.2	203.4
87.5°	3.1	21.5	67.3	143.2	165.4
90°	0.2	11.3	47.9	112.3	132.4
92.5°	0.2	5.4	33.7	85.0	100.3
95°	0.2	2.8	21.0	61.6	75.3
97.5°	0.2	1.7	12.7	43.7	55.2
100°	0.2	1.4	7.6	29.0	39.4
102.5°	0.2	1.7	5.2	18.4	25.7
105°	0.2	1.7	4.2	12.0	17.0
107.5°	0.5	1.7	3.8	9.0	11.8
110°	0.2	1.4	4.0	6.8	9.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.5	1.2	3.8	5.7	6.8
115°	0.2	0.9	3.3	5.4	5.7
117.5°	0.5	0.7	2.6	5.4	5.7
120°	0.5	0.5	2.1	5.2	5.9
122.5°	0.5	0.5	1.7	4.7	5.7
125°	0.2	0.5	1.4	3.5	5.0
127.5°	0.5	0.5	1.2	2.8	3.8
130°	0.5	0.5	0.9	2.1	2.8
132.5°	0.5	0.5	0.7	1.7	2.1
135°	0.5	0.5	0.5	1.2	1.7
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)