

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: P517920

Luminaire Tested: HVL8-2-LD4-2HI-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: P517920
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-2HI-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: 4491.0 lumens
Efficiency: N/A
Efficacy: 104.2 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

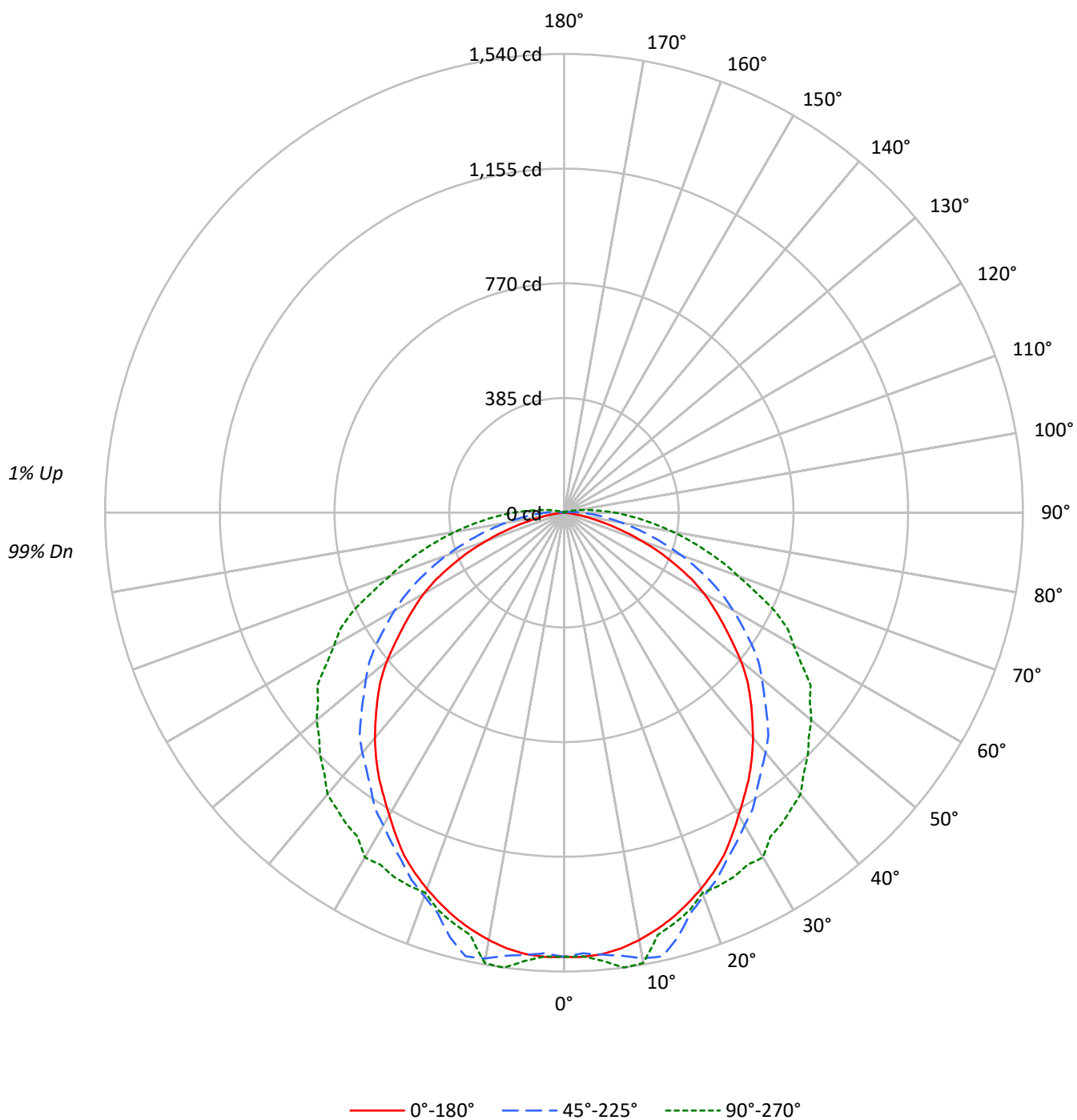
Input Watts (W): 43.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	12035	12035	12035
5°	11964	11824	11976
10°	11763	11955	12050
15°	11507	11602	11185
20°	11205	10841	10697
25°	10887	10345	10764
30°	10428	9942	10882
35°	10087	9559	10689
40°	9722	9263	10756
45°	9329	8891	10562
50°	8861	8501	10481
55°	8201	8084	10475
60°	7670	7524	10028
65°	6688	6863	9709
70°	5355	6017	8705
75°	3714	5004	7948
80°	1986	3987	7135
85°	664	2946	6285

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 10562 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	143.3	3.2
10°-20°	408.0	9.1
20°-30°	607.1	13.5
30°-40°	729.7	16.2
40°-50°	768.1	17.1
50°-60°	712.7	15.9
60°-70°	563.5	12.5
70°-80°	344.2	7.7
80°-90°	150.0	3.3
90°-100°	46.7	1.0
100°-110°	10.5	0.2
110°-120°	4.2	0.1
120°-130°	2.4	0.1
130°-140°	0.6	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°	1158.4	25.8
0°-40°	1888.1	42.0
0°-60°	3368.9	75.0
0°-90°	4426.6	98.6
90°-120°	61.4	1.4
90°-150°	64.4	1.4
90°-180°	64.0	1.4
0°-180°	4491.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1491	1491	1491	1491	1491	
5°	1487	1484	1489	1506	1510	141
15°	1408	1462	1476	1427	1428	397
25°	1270	1351	1289	1328	1349	583
35°	1083	1113	1130	1233	1274	677
45°	885	889	962	1115	1156	682
55°	652	663	768	936	1010	586
65°	413	426	541	716	781	409
75°	156	207	302	463	493	170
85°	14	49	118	228	262	22
90°	0	15	62	145	170	1
95°	0	4	27	79	97	0
105°	0	2	6	16	22	0
115°	0	1	4	7	7	0
125°	0	1	2	5	6	0
135°	1	1	1	2	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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CATALOG NUMBER: HVL8-2-LD4-2HI-35-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1490.8	1490.8	1490.8	1490.8	1490.8
2.5°	1492.6	1488.6	1480.4	1488.3	1490.5
5°	1487.1	1484.1	1489.2	1506.0	1510.2
7.5°	1474.7	1486.2	1499.9	1530.2	1540.0
10°	1456.1	1478.0	1519.0	1544.8	1534.8
12.5°	1433.7	1470.7	1525.7	1475.3	1451.9
15°	1407.6	1461.6	1475.9	1427.0	1427.9
17.5°	1376.9	1454.0	1410.0	1408.8	1400.0
20°	1343.8	1428.5	1370.2	1367.8	1358.4
22.5°	1308.3	1394.8	1335.0	1330.1	1355.6
25°	1269.7	1350.8	1289.1	1327.7	1349.3
27.5°	1221.4	1293.1	1250.9	1305.5	1332.6
30°	1172.5	1233.6	1211.7	1287.9	1335.9
32.5°	1126.7	1171.3	1179.5	1281.2	1289.1
35°	1083.2	1113.3	1130.0	1232.6	1274.5
37.5°	1035.6	1043.7	1088.1	1212.3	1252.7
40°	987.0	981.8	1052.9	1178.9	1234.8
42.5°	934.7	932.9	1015.5	1162.2	1190.1
45°	885.2	889.2	962.4	1114.8	1156.4
47.5°	834.5	839.7	912.0	1062.9	1114.5
50°	775.6	782.3	867.0	1016.7	1083.2
52.5°	711.8	724.6	823.3	973.0	1040.1
55°	652.0	662.6	767.7	935.6	1010.0
57.5°	597.3	603.7	710.3	888.6	944.8
60°	543.6	545.1	656.3	836.3	890.1
62.5°	481.9	484.7	600.7	774.7	846.7
65°	412.7	425.8	540.9	715.8	780.8
67.5°	348.0	370.8	479.8	661.7	695.7
70°	278.8	317.3	420.0	598.3	622.2
72.5°	215.3	260.6	358.6	527.2	560.9
75°	156.1	206.8	301.6	463.4	492.6
77.5°	105.1	156.7	248.1	393.0	431.5
80°	62.9	114.5	200.4	327.7	371.1
82.5°	32.2	76.8	155.5	274.8	313.7
85°	14.0	48.6	117.5	228.1	261.8
87.5°	3.9	27.6	86.5	184.3	212.9
90°	0.3	14.6	61.6	144.6	170.4
92.5°	0.3	7.0	43.4	109.3	129.1
95°	0.3	3.6	27.0	79.3	96.9
97.5°	0.3	2.1	16.4	56.2	71.1
100°	0.3	1.8	9.7	37.4	50.7
102.5°	0.3	2.1	6.7	23.7	33.1
105°	0.3	2.1	5.5	15.5	21.9
107.5°	0.6	2.1	4.9	11.5	15.2
110°	0.3	1.8	5.2	8.8	11.8

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CATALOG NUMBER: HVL8-2-LD4-2HI-35-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.6	1.5	4.9	7.3	8.8
115°	0.3	1.2	4.3	7.0	7.3
117.5°	0.6	0.9	3.3	7.0	7.3
120°	0.6	0.6	2.7	6.7	7.6
122.5°	0.6	0.6	2.1	6.1	7.3
125°	0.3	0.6	1.8	4.6	6.4
127.5°	0.6	0.6	1.5	3.6	4.9
130°	0.6	0.6	1.2	2.7	3.6
132.5°	0.6	0.6	0.9	2.1	2.7
135°	0.6	0.6	0.6	1.5	2.1
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)