

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: P517924

Luminaire Tested: HVL8-2-LD4-2HI-40-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: P517924
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-2HI-40-UNV-C-EDD
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4536.0 lumens
Efficiency: N/A
Efficacy: 105.2 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

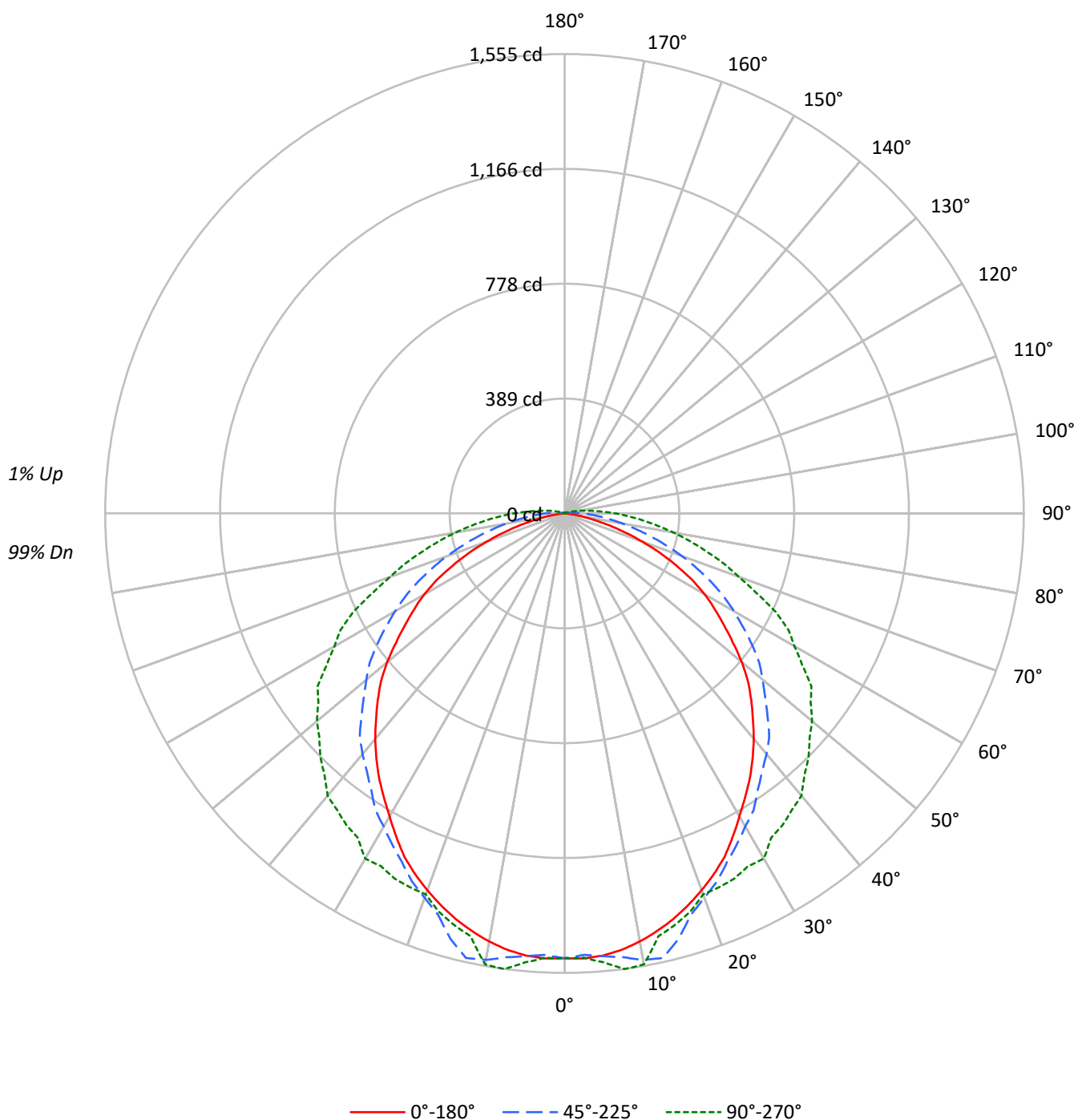
Input Watts (W): 43.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	12155	12155	12155
5°	12084	11943	12096
10°	11881	12075	12171
15°	11623	11719	11297
20°	11317	10950	10804
25°	10996	10449	10872
30°	10533	10041	10991
35°	10188	9654	10796
40°	9819	9356	10863
45°	9422	8980	10667
50°	8950	8586	10586
55°	8282	8165	10581
60°	7746	7599	10128
65°	6754	6931	9806
70°	5408	6077	8794
75°	3752	5054	8027
80°	2005	4026	7206
85°	669	2976	6348

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 10667 cd/sqm

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CATALOG NUMBER: HVL8-2-LD4-2HI-40-UNV-C-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	144.7	3.2
10°-20°	412.1	9.1
20°-30°	613.2	13.5
30°-40°	737.0	16.2
40°-50°	775.8	17.1
50°-60°	719.8	15.9
60°-70°	569.2	12.5
70°-80°	347.7	7.7
80°-90°	151.5	3.3
90°-100°	47.2	1.0
100°-110°	10.6	0.2
110°-120°	4.3	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°	1170.0	25.8
0°-40°	1907.0	42.0
0°-60°	3402.7	75.0
0°-90°	4470.9	98.6
90°-120°	62.0	1.4
90°-150°	65.0	1.4
90°-180°	65.0	1.4
0°-180°	4536.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1506	1506	1506	1506	1506	
5°	1502	1499	1504	1521	1525	142
15°	1422	1476	1491	1441	1442	400
25°	1282	1364	1302	1341	1363	589
35°	1094	1124	1141	1245	1287	684
45°	894	898	972	1126	1168	689
55°	658	669	775	945	1020	592
65°	417	430	546	723	789	413
75°	158	209	305	468	498	172
85°	14	49	119	230	264	22
90°	0	15	62	146	172	1
95°	0	4	27	80	98	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-40-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1505.7	1505.7	1505.7	1505.7	1505.7
2.5°	1507.5	1503.6	1495.3	1503.3	1505.4
5°	1502.0	1499.0	1504.2	1521.0	1525.3
7.5°	1489.4	1501.1	1514.9	1545.6	1555.4
10°	1470.7	1492.8	1534.2	1560.3	1550.2
12.5°	1448.0	1485.5	1541.0	1490.1	1466.4
15°	1421.7	1476.3	1490.7	1441.3	1442.2
17.5°	1390.7	1468.6	1424.1	1422.9	1414.0
20°	1357.3	1442.8	1383.9	1381.5	1372.0
22.5°	1321.4	1408.8	1348.4	1343.4	1369.2
25°	1282.4	1364.3	1302.0	1341.0	1362.8
27.5°	1233.6	1306.0	1263.4	1318.6	1345.9
30°	1184.3	1245.9	1223.8	1300.8	1349.3
32.5°	1137.9	1183.0	1191.3	1294.1	1302.0
35°	1094.1	1124.4	1141.3	1245.0	1287.3
37.5°	1045.9	1054.2	1099.0	1224.4	1265.2
40°	996.9	991.6	1063.4	1190.7	1247.1
42.5°	944.1	942.3	1025.7	1173.8	1202.0
45°	894.1	898.1	972.0	1126.0	1168.0
47.5°	842.9	848.1	921.1	1073.5	1125.7
50°	783.4	790.1	875.7	1026.9	1094.1
52.5°	719.0	731.8	831.5	982.7	1050.5
55°	658.5	669.3	775.4	945.0	1020.2
57.5°	603.3	609.8	717.4	897.5	954.2
60°	549.0	550.6	662.8	844.7	899.0
62.5°	486.8	489.5	606.7	782.5	855.1
65°	416.8	430.0	546.3	722.9	788.6
67.5°	351.5	374.5	484.6	668.4	702.7
70°	281.6	320.5	424.2	604.2	628.5
72.5°	217.5	263.2	362.2	532.5	566.5
75°	157.7	208.9	304.6	468.1	497.5
77.5°	106.1	158.3	250.6	396.9	435.9
80°	63.5	115.6	202.4	331.0	374.8
82.5°	32.5	77.6	157.0	277.6	316.8
85°	14.1	49.1	118.7	230.3	264.4
87.5°	4.0	27.9	87.4	186.2	215.0
90°	0.3	14.7	62.3	146.0	172.1
92.5°	0.3	7.1	43.9	110.4	130.4
95°	0.3	3.7	27.3	80.1	97.8
97.5°	0.3	2.1	16.6	56.7	71.8
100°	0.3	1.8	9.8	37.7	51.2
102.5°	0.3	2.1	6.7	23.9	33.4
105°	0.3	2.1	5.5	15.6	22.1
107.5°	0.6	2.1	4.9	11.7	15.3
110°	0.3	1.8	5.2	8.9	12.0

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CATALOG NUMBER: HVL8-2-LD4-2HI-40-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.6	1.5	4.9	7.4	8.9
115°	0.3	1.2	4.3	7.1	7.4
117.5°	0.6	0.9	3.4	7.1	7.4
120°	0.6	0.6	2.8	6.7	7.7
122.5°	0.6	0.6	2.1	6.1	7.4
125°	0.3	0.6	1.8	4.6	6.4
127.5°	0.6	0.6	1.5	3.7	4.9
130°	0.6	0.6	1.2	2.8	3.7
132.5°	0.6	0.6	0.9	2.1	2.8
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)