

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: P518003

Luminaire Tested: HVL8-2-LD4-3STD-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: P518003
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-3STD-40-UNV-C-EDD-90
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4671.0 lumens
Efficiency: N/A
Efficacy: 97.7 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

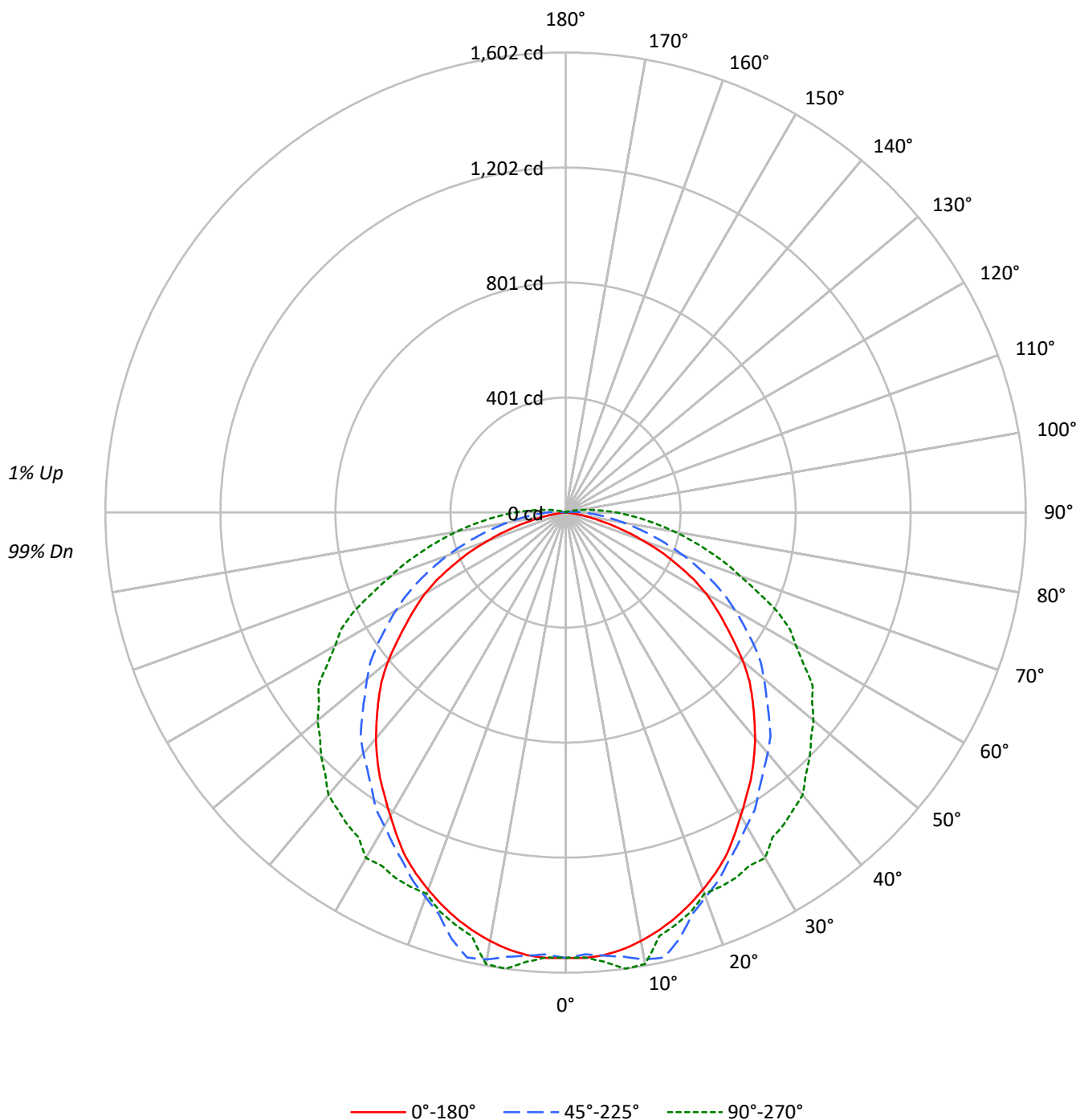
Input Watts (W): 47.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	12517	12517	12517
5°	12443	12298	12456
10°	12235	12434	12533
15°	11968	12067	11633
20°	11653	11276	11125
25°	11323	10760	11195
30°	10846	10340	11318
35°	10491	9942	11118
40°	10111	9635	11187
45°	9703	9247	10985
50°	9216	8842	10901
55°	8529	8408	10895
60°	7977	7826	10430
65°	6955	7137	10098
70°	5570	6257	9055
75°	3861	5203	8266
80°	2065	4148	7421
85°	688	3064	6537

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 10985 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	149.0	3.2
10°-20°	424.4	9.1
20°-30°	631.4	13.5
30°-40°	759.0	16.2
40°-50°	798.9	17.1
50°-60°	741.3	15.9
60°-70°	586.1	12.5
70°-80°	358.0	7.7
80°-90°	156.0	3.3
90°-100°	48.6	1.0
100°-110°	10.9	0.2
110°-120°	4.4	0.1
120°-130°	2.5	0.1
130°-140°	0.7	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°	1204.8	25.8
0°-40°	1963.8	42.0
0°-60°	3503.9	75.0
0°-90°	4604.0	98.6
90°-120°	63.8	1.4
90°-150°	67.0	1.4
90°-180°	67.0	1.4
0°-180°	4671.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1550	1550	1550	1550	1550	
5°	1547	1544	1549	1566	1571	147
15°	1464	1520	1535	1484	1485	412
25°	1321	1405	1341	1381	1403	606
35°	1127	1158	1175	1282	1326	704
45°	921	925	1001	1160	1203	710
55°	678	689	798	973	1050	609
65°	429	443	562	744	812	425
75°	162	215	314	482	512	177
85°	14	50	122	237	272	22
90°	0	15	64	150	177	1
95°	0	4	28	82	101	0
105°	0	2	6	16	23	0
115°	0	1	4	7	8	0
125°	0	1	2	5	7	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

TEST NUMBER: P518003

CATALOG NUMBER: HVL8-2-LD4-3STD-40-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1550.5	1550.5	1550.5	1550.5	1550.5
2.5°	1552.4	1548.3	1539.8	1548.0	1550.2
5°	1546.7	1543.6	1548.9	1566.3	1570.7
7.5°	1533.8	1545.8	1560.0	1591.6	1601.7
10°	1514.5	1537.3	1579.9	1606.7	1596.3
12.5°	1491.1	1529.7	1586.8	1534.4	1510.1
15°	1464.0	1520.2	1535.0	1484.2	1485.1
17.5°	1432.1	1512.3	1466.5	1465.2	1456.1
20°	1397.6	1485.8	1425.1	1422.6	1412.8
22.5°	1360.7	1450.7	1388.5	1383.4	1410.0
25°	1320.6	1404.9	1340.8	1380.9	1403.3
27.5°	1270.4	1344.9	1301.0	1357.8	1386.0
30°	1219.5	1283.0	1260.2	1339.5	1389.4
32.5°	1171.8	1218.2	1226.8	1332.6	1340.8
35°	1126.6	1157.9	1175.3	1282.0	1325.6
37.5°	1077.1	1085.6	1131.7	1260.9	1302.9
40°	1026.5	1021.1	1095.1	1226.1	1284.3
42.5°	972.2	970.3	1056.2	1208.8	1237.8
45°	920.7	924.8	1000.9	1159.5	1202.8
47.5°	868.0	873.3	948.5	1105.5	1159.2
50°	806.7	813.6	901.8	1057.5	1126.6
52.5°	740.4	753.6	856.3	1012.0	1081.8
55°	678.1	689.2	798.5	973.1	1050.5
57.5°	621.3	627.9	738.8	924.2	982.6
60°	565.4	567.0	682.6	869.9	925.8
62.5°	501.3	504.1	624.8	805.7	880.6
65°	429.2	442.8	562.5	744.5	812.1
67.5°	362.0	385.7	499.0	688.2	723.6
70°	290.0	330.1	436.8	622.2	647.2
72.5°	223.9	271.0	373.0	548.3	583.4
75°	162.3	215.1	313.6	482.0	512.3
77.5°	109.3	163.0	258.1	408.7	448.8
80°	65.4	119.1	208.5	340.8	386.0
82.5°	33.5	79.9	161.7	285.8	326.3
85°	14.5	50.5	122.2	237.2	272.3
87.5°	4.1	28.7	90.0	191.7	221.4
90°	0.3	15.2	64.1	150.3	177.2
92.5°	0.3	7.3	45.2	113.7	134.2
95°	0.3	3.8	28.1	82.4	100.8
97.5°	0.3	2.2	17.1	58.4	73.9
100°	0.3	1.9	10.1	38.8	52.7
102.5°	0.3	2.2	6.9	24.6	34.4
105°	0.3	2.2	5.7	16.1	22.7
107.5°	0.6	2.2	5.1	12.0	15.8
110°	0.3	1.9	5.4	9.2	12.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.6	1.6	5.1	7.6	9.2
115°	0.3	1.3	4.4	7.3	7.6
117.5°	0.6	0.9	3.5	7.3	7.6
120°	0.6	0.6	2.8	6.9	7.9
122.5°	0.6	0.6	2.2	6.3	7.6
125°	0.3	0.6	1.9	4.7	6.6
127.5°	0.6	0.6	1.6	3.8	5.1
130°	0.6	0.6	1.3	2.8	3.8
132.5°	0.6	0.6	0.9	2.2	2.8
135°	0.6	0.6	0.6	1.6	2.2
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)