

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: P518010

Luminaire Tested: HVL8-2-LD4-3STD-50-UNV-O-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: P518010
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-3STD-50-UNV-O-EDD
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4453.0 lumens
Efficiency: N/A
Efficacy: 93.2 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

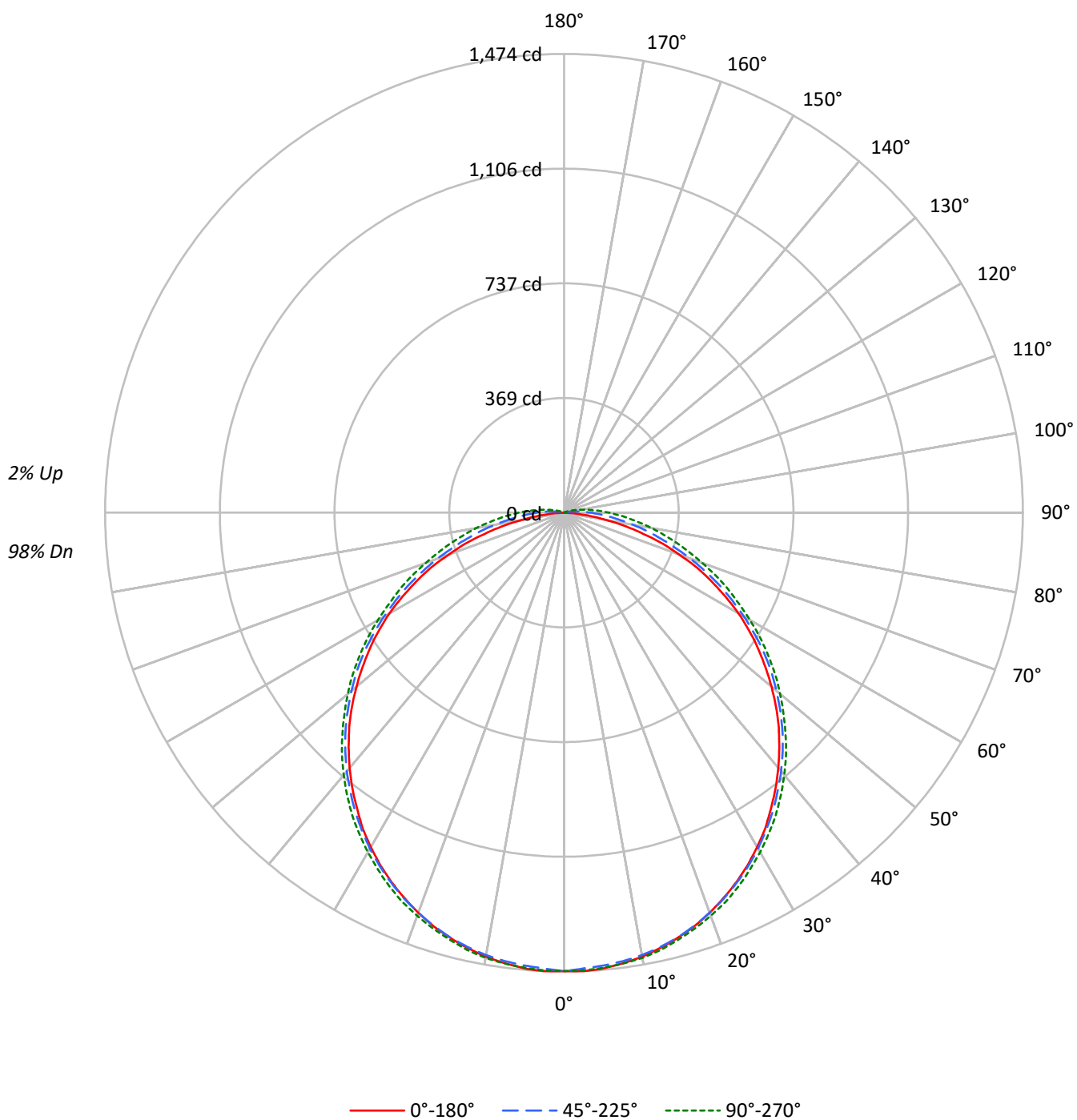
Input Watts (W): 47.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			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°	11890	11890	11890
5°	11824	11595	11635
10°	11702	11359	11402
15°	11558	11103	11123
20°	11406	10821	10851
25°	11232	10532	10575
30°	11036	10227	10260
35°	10798	9894	9950
40°	10550	9546	9587
45°	10281	9168	9196
50°	9944	8735	8775
55°	9577	8263	8310
60°	9141	7658	7768
65°	8479	6986	7231
70°	7561	6201	6607
75°	6302	5346	6039
80°	4514	4504	5520
85°	2173	3648	5027

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 10281 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	139.4	3.1
10°-20°	399.8	9.0
20°-30°	606.6	13.6
30°-40°	733.5	16.5
40°-50°	765.3	17.2
50°-60°	699.7	15.7
60°-70°	545.5	12.2
70°-80°	341.2	7.7
80°-90°	155.0	3.5
90°-100°	51.9	1.2
100°-110°	13.0	0.3
110°-120°	2.0	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°	1145.7	25.7
0°-40°	1879.2	42.2
0°-60°	3344.3	75.1
0°-90°	4386.0	98.5
90°-120°	67.0	1.5
90°-150°	67.0	1.5
90°-180°	67.0	1.5
0°-180°	4453.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1473	1473	1473	1473	1473	
5°	1470	1467	1460	1467	1467	140
15°	1414	1416	1412	1420	1420	399
25°	1310	1311	1312	1324	1326	604
35°	1160	1165	1170	1182	1186	726
45°	976	984	992	1002	1007	752
55°	761	770	785	796	801	680
65°	523	532	551	572	582	518
75°	265	281	322	361	374	282
85°	46	85	146	192	209	58
90°	0	32	86	129	144	2
95°	0	8	44	80	93	0
105°	1	1	7	22	29	1
115°	1	1	1	4	6	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°	1472.8	1472.8	1472.8	1472.8	1472.8
2.5°	1474.5	1472.4	1465.8	1472.4	1472.1
5°	1469.7	1466.9	1460.3	1467.2	1467.2
7.5°	1459.9	1458.9	1453.0	1461.0	1461.0
10°	1448.5	1448.1	1443.3	1452.0	1452.3
12.5°	1432.5	1433.9	1429.4	1437.7	1438.8
15°	1413.8	1416.2	1412.4	1420.4	1420.0
17.5°	1393.3	1394.7	1391.9	1400.9	1400.6
20°	1367.9	1369.7	1367.6	1377.0	1378.0
22.5°	1339.8	1342.2	1341.9	1351.6	1354.4
25°	1310.0	1311.0	1312.4	1323.5	1325.6
27.5°	1277.0	1278.7	1281.1	1291.2	1293.3
30°	1240.9	1243.6	1246.4	1256.8	1259.6
32.5°	1202.7	1205.4	1208.9	1222.5	1223.8
35°	1159.6	1164.8	1169.7	1181.5	1186.4
37.5°	1116.6	1123.2	1127.7	1140.2	1144.0
40°	1071.1	1077.7	1085.0	1098.2	1100.6
42.5°	1023.5	1031.2	1039.8	1051.6	1055.8
45°	975.6	984.3	992.3	1002.0	1006.9
47.5°	923.9	932.6	942.3	953.4	956.5
50°	870.4	880.5	890.9	901.3	906.9
52.5°	815.6	827.7	839.5	850.6	855.8
55°	761.4	770.4	784.7	796.1	801.3
57.5°	705.1	712.8	725.6	744.4	747.2
60°	647.9	654.8	668.0	683.3	689.5
62.5°	584.7	594.0	607.9	627.4	632.9
65°	523.2	532.2	550.6	572.5	581.5
67.5°	463.8	467.0	490.6	513.5	528.1
70°	393.7	405.5	432.9	461.1	472.2
72.5°	333.3	345.1	375.3	408.3	422.2
75°	264.9	281.2	322.2	360.7	374.3
77.5°	204.8	222.9	273.6	312.5	328.1
80°	143.0	171.2	226.4	270.1	287.1
82.5°	89.9	124.6	183.7	229.5	244.4
85°	45.8	84.7	145.5	192.3	209.4
87.5°	12.2	54.9	113.2	158.0	175.3
90°	0.3	31.6	85.8	128.8	144.4
92.5°	0.3	17.7	63.9	102.4	118.4
95°	0.3	8.3	44.4	80.5	93.0
97.5°	0.3	3.5	30.6	60.8	73.3
100°	0.3	1.7	19.4	44.1	54.9
102.5°	0.7	1.0	12.2	31.6	40.3
105°	0.7	1.0	7.3	21.5	28.8
107.5°	0.7	1.0	4.2	14.6	19.8
110°	1.0	1.0	2.4	9.0	13.2

TEST NUMBER: P518010

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.0	1.0	1.4	5.9	8.7
115°	1.0	1.0	1.4	3.8	5.6
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)