

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: P518089

Luminaire Tested: HVL8-4-LD4-2LO-50-UNV-O-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: P518089
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-2LO-50-UNV-O-EDD-90
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4384.0 lumens
Efficiency: N/A
Efficacy: 95.1 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

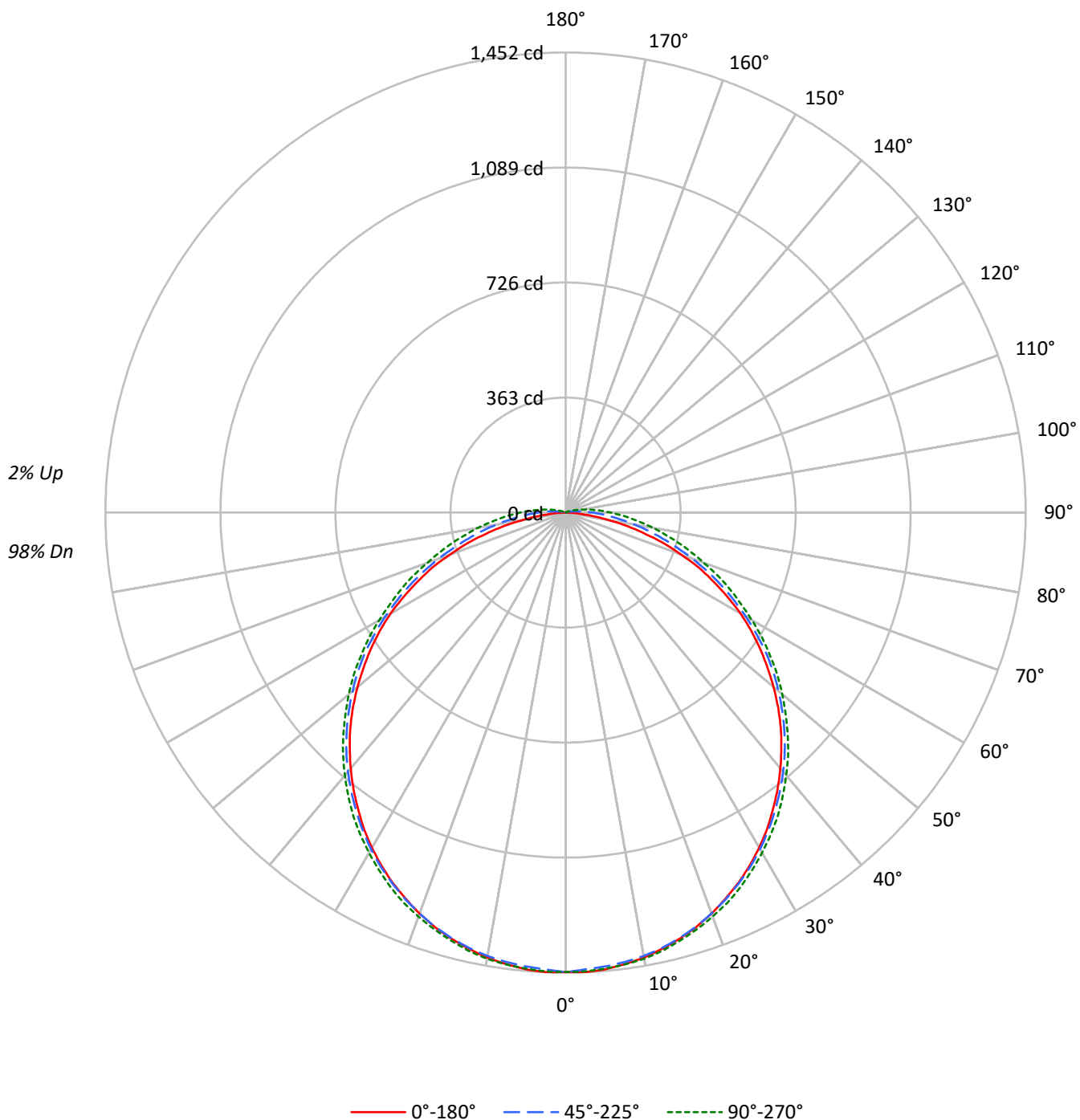
Input Watts (W): 46.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		101
1	108	102	98	94	105	100	96	92	95	92	89		91	88	86		87
2	98	89	82	76	95	87	80	75	83	77	73		79	75	71		76
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		67
4	81	69	60	53	79	67	59	52	65	57	52		62	56	51		60
5	75	61	52	45	72	60	52	45	58	50	44		56	49	44		54
6	69	55	46	40	67	54	46	39	52	45	39		50	44	38		49
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		44
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		41
9	55	42	34	28	54	41	33	28	40	33	28		39	32	27		38
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		35

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5853	5853	5853
5°	5841	5722	5728
10°	5802	5619	5613
15°	5752	5506	5475
20°	5698	5380	5341
25°	5635	5249	5205
30°	5560	5111	5051
35°	5466	4958	4898
40°	5369	4798	4719
45°	5264	4623	4527
50°	5126	4421	4319
55°	4979	4199	4091
60°	4802	3911	3824
65°	4516	3590	3559
70°	4104	3210	3252
75°	3520	2795	2973
80°	2647	2388	2718
85°	1415	1975	2474

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 5264 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	137.2	3.1
10°-20°	393.6	9.0
20°-30°	597.2	13.6
30°-40°	722.1	16.5
40°-50°	753.5	17.2
50°-60°	688.9	15.7
60°-70°	537.0	12.2
70°-80°	335.9	7.7
80°-90°	152.6	3.5
90°-100°	51.1	1.2
100°-110°	12.8	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°	1128.0	25.7
0°-40°	1850.1	42.2
0°-60°	3292.5	75.1
0°-90°	4318.0	98.5
90°-120°	66.0	1.5
90°-150°	66.0	1.5
90°-180°	66.0	1.5
0°-180°	4384.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1450	1450	1450	1450	1450	
5°	1447	1444	1438	1444	1444	137
15°	1392	1394	1390	1398	1398	393
25°	1290	1291	1292	1303	1305	594
35°	1142	1147	1152	1163	1168	715
45°	960	969	977	986	991	740
55°	750	758	772	784	789	670
65°	515	524	542	564	572	510
75°	261	277	317	355	368	278
85°	45	83	143	189	206	57
90°	0	31	84	127	142	2
95°	0	8	44	79	92	0
105°	1	1	7	21	28	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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CATALOG NUMBER: HVL8-4-LD4-2LO-50-UNV-O-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1450.0	1450.0	1450.0	1450.0	1450.0
2.5°	1451.7	1449.6	1443.1	1449.6	1449.3
5°	1446.9	1444.2	1437.7	1444.5	1444.5
7.5°	1437.3	1436.3	1430.5	1438.3	1438.3
10°	1426.0	1425.7	1420.9	1429.5	1429.8
12.5°	1410.3	1411.7	1407.2	1415.4	1416.5
15°	1391.9	1394.2	1390.5	1398.3	1398.0
17.5°	1371.7	1373.1	1370.3	1379.2	1378.9
20°	1346.7	1348.4	1346.4	1355.6	1356.6
22.5°	1319.0	1321.4	1321.1	1330.7	1333.4
25°	1289.7	1290.7	1292.0	1303.0	1305.0
27.5°	1257.2	1258.9	1261.3	1271.2	1273.2
30°	1221.6	1224.4	1227.1	1237.4	1240.1
32.5°	1184.0	1186.8	1190.2	1203.5	1204.9
35°	1141.6	1146.8	1151.6	1163.2	1168.0
37.5°	1099.3	1105.8	1110.2	1122.5	1126.3
40°	1054.5	1061.0	1068.2	1081.1	1083.5
42.5°	1007.7	1015.2	1023.7	1035.3	1039.4
45°	960.5	969.0	976.9	986.5	991.3
47.5°	909.6	918.1	927.7	938.6	941.7
50°	856.9	866.8	877.1	887.3	892.8
52.5°	802.9	814.9	826.5	837.4	842.6
55°	749.6	758.5	772.5	783.8	788.9
57.5°	694.2	701.7	714.4	732.8	735.6
60°	637.8	644.7	657.6	672.7	678.8
62.5°	575.6	584.8	598.5	617.7	623.1
65°	515.1	524.0	542.1	563.6	572.5
67.5°	456.7	459.7	483.0	505.5	519.9
70°	387.6	399.2	426.2	453.9	464.9
72.5°	328.1	339.8	369.5	402.0	415.6
75°	260.8	276.9	317.2	355.1	368.5
77.5°	201.7	219.4	269.3	307.6	323.0
80°	140.8	168.5	222.9	265.9	282.7
82.5°	88.5	122.7	180.8	225.9	240.6
85°	45.1	83.4	143.2	189.4	206.1
87.5°	12.0	54.0	111.4	155.5	172.6
90°	0.3	31.1	84.4	126.8	142.2
92.5°	0.3	17.4	62.9	100.8	116.6
95°	0.3	8.2	43.8	79.3	91.6
97.5°	0.3	3.4	30.1	59.8	72.1
100°	0.3	1.7	19.1	43.4	54.0
102.5°	0.7	1.0	12.0	31.1	39.7
105°	0.7	1.0	7.2	21.2	28.4
107.5°	0.7	1.0	4.1	14.4	19.5
110°	1.0	1.0	2.4	8.9	13.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.0	1.0	1.4	5.8	8.5
115°	1.0	1.0	1.4	3.8	5.5
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)