

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: P517997

Luminaire Tested: HVL8-2-LD4-3STD-30-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: P517997
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-3STD-30-UNV-O-EDD-90
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4748.0 lumens
Efficiency: N/A
Efficacy: 99.3 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

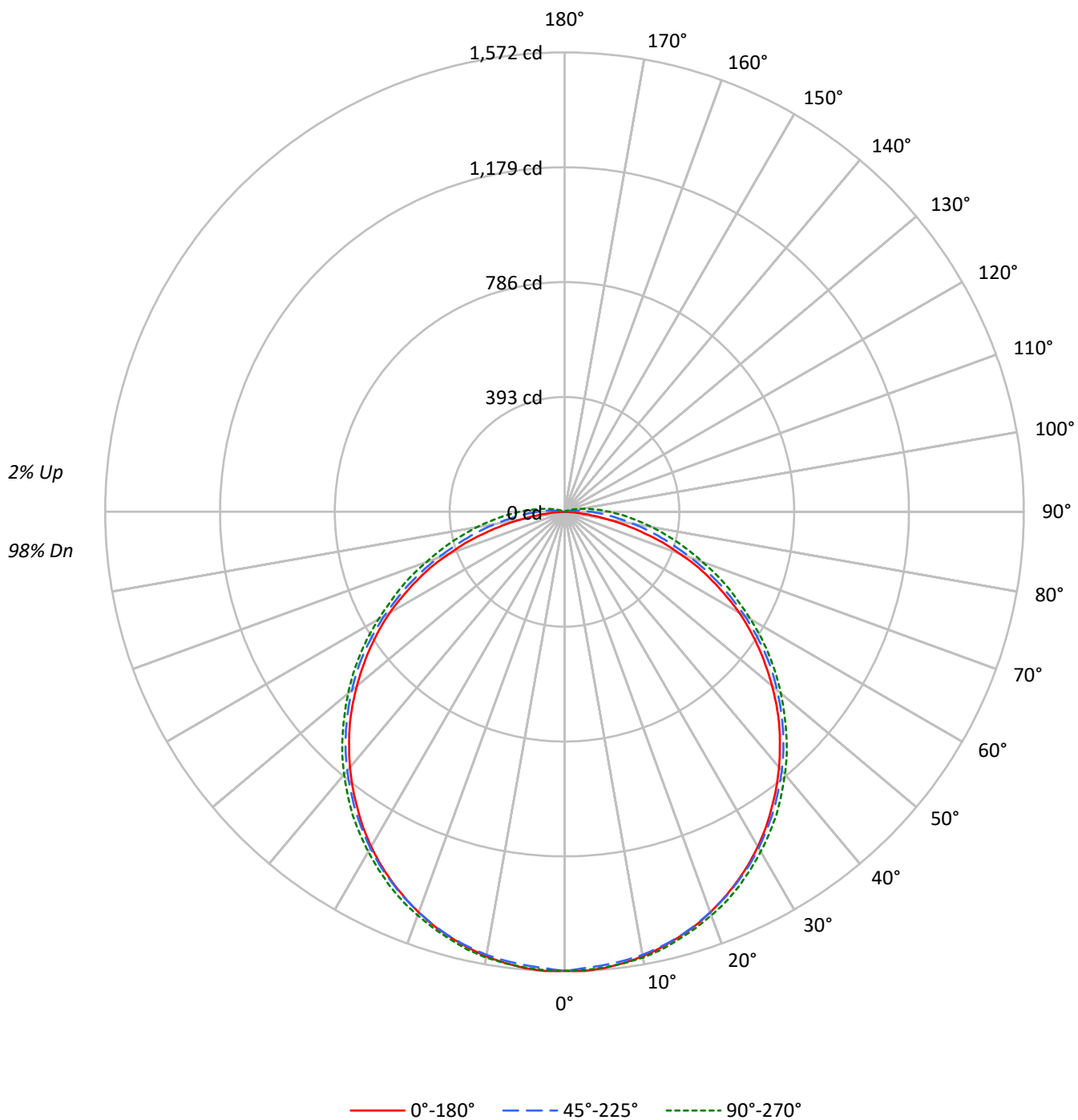
Input Watts (W): 47.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	12678	12678	12678
5°	12607	12363	12406
10°	12477	12112	12158
15°	12323	11838	11860
20°	12162	11537	11570
25°	11976	11230	11275
30°	11767	10904	10941
35°	11513	10550	10608
40°	11248	10178	10222
45°	10962	9775	9805
50°	10603	9313	9356
55°	10210	8809	8861
60°	9747	8165	8283
65°	9041	7449	7711
70°	8062	6612	7045
75°	6721	5700	6439
80°	4814	4802	5885
85°	2320	3888	5359

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 10962 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	148.6	3.1
10°-20°	426.3	9.0
20°-30°	646.8	13.6
30°-40°	782.1	16.5
40°-50°	816.0	17.2
50°-60°	746.1	15.7
60°-70°	581.6	12.2
70°-80°	363.8	7.7
80°-90°	165.2	3.5
90°-100°	55.4	1.2
100°-110°	13.9	0.3
110°-120°	2.2	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°	1221.6	25.7
0°-40°	2003.7	42.2
0°-60°	3565.8	75.1
0°-90°	4676.5	98.5
90°-120°	71.5	1.5
90°-150°	71.5	1.5
90°-180°	71.0	1.5
0°-180°	4748.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1570	1570	1570	1570	1570	
5°	1567	1564	1557	1564	1564	149
15°	1507	1510	1506	1514	1514	426
25°	1397	1398	1399	1411	1413	644
35°	1236	1242	1247	1260	1265	774
45°	1040	1050	1058	1068	1074	802
55°	812	822	837	849	854	725
65°	558	568	587	610	620	552
75°	282	300	344	385	399	301
85°	49	90	155	205	223	62
90°	0	34	91	137	154	2
95°	0	9	47	86	99	0
105°	1	1	8	23	31	1
115°	1	1	2	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: HVL8-2-LD4-3STD-30-UNV-O-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1570.4	1570.4	1570.4	1570.4	1570.4
2.5°	1572.2	1570.0	1562.9	1570.0	1569.6
5°	1567.0	1564.1	1557.0	1564.4	1564.4
7.5°	1556.7	1555.5	1549.3	1557.8	1557.8
10°	1544.4	1544.1	1538.9	1548.1	1548.5
12.5°	1527.4	1528.9	1524.1	1533.0	1534.1
15°	1507.4	1510.0	1505.9	1514.5	1514.1
17.5°	1485.6	1487.1	1484.1	1493.7	1493.4
20°	1458.6	1460.4	1458.2	1468.2	1469.3
22.5°	1428.6	1431.2	1430.8	1441.2	1444.1
25°	1396.7	1397.8	1399.3	1411.2	1413.4
27.5°	1361.6	1363.4	1366.0	1376.7	1379.0
30°	1323.1	1326.0	1329.0	1340.1	1343.1
32.5°	1282.3	1285.3	1289.0	1303.4	1304.9
35°	1236.4	1242.0	1247.2	1259.8	1264.9
37.5°	1190.5	1197.6	1202.4	1215.7	1219.8
40°	1142.0	1149.1	1156.8	1170.9	1173.5
42.5°	1091.3	1099.5	1108.7	1121.3	1125.8
45°	1040.2	1049.5	1058.0	1068.4	1073.6
47.5°	985.1	994.3	1004.7	1016.5	1019.9
50°	928.1	938.8	949.9	961.0	966.9
52.5°	869.6	882.5	895.1	907.0	912.5
55°	811.8	821.5	836.6	848.8	854.4
57.5°	751.9	760.0	773.7	793.7	796.7
60°	690.8	698.2	712.2	728.5	735.2
62.5°	623.4	633.4	648.2	668.9	674.9
65°	557.9	567.5	587.1	610.4	620.1
67.5°	494.6	497.9	523.1	547.5	563.1
70°	419.8	432.4	461.6	491.6	503.5
72.5°	355.4	368.0	400.2	435.3	450.2
75°	282.5	299.9	343.5	384.6	399.1
77.5°	218.4	237.7	291.7	333.2	349.8
80°	152.5	182.5	241.4	288.0	306.1
82.5°	95.9	132.9	195.8	244.7	260.6
85°	48.9	90.3	155.1	205.1	223.2
87.5°	13.0	58.5	120.7	168.4	186.9
90°	0.4	33.7	91.4	137.3	154.0
92.5°	0.4	18.9	68.1	109.2	126.2
95°	0.4	8.9	47.4	85.9	99.2
97.5°	0.4	3.7	32.6	64.8	78.1
100°	0.4	1.9	20.7	47.0	58.5
102.5°	0.7	1.1	13.0	33.7	42.9
105°	0.7	1.1	7.8	23.0	30.7
107.5°	0.7	1.1	4.4	15.5	21.1
110°	1.1	1.1	2.6	9.6	14.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.1	1.1	1.5	6.3	9.3
115°	1.1	1.1	1.5	4.1	5.9
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)