

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: P517999

Luminaire Tested: HVL8-2-LD4-3STD-35-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: P517999
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-3STD-35-UNV-C-EDD-90
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4605.0 lumens
Efficiency: N/A
Efficacy: 96.3 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

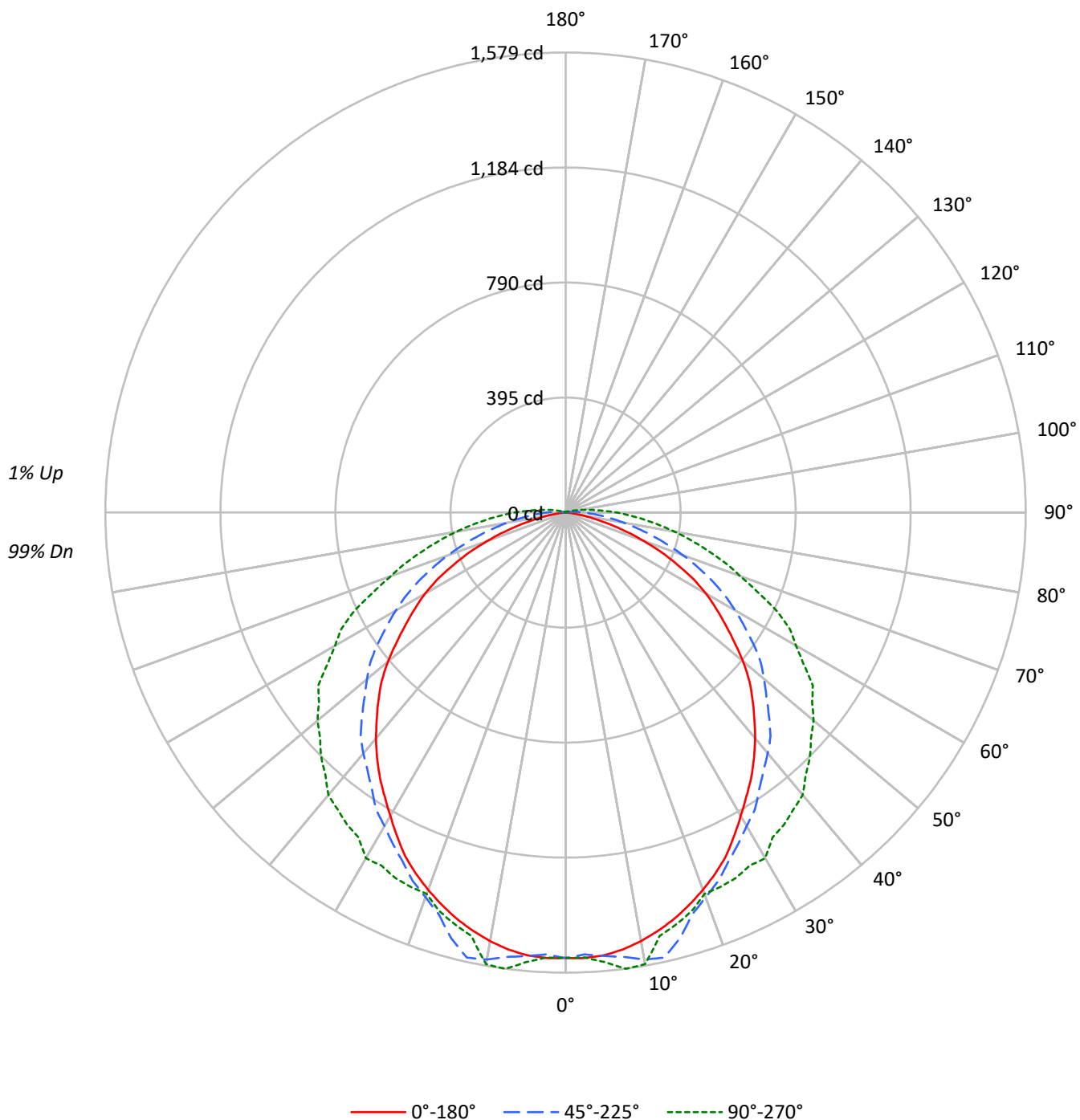
Input Watts (W): 47.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	12340	12340	12340
5°	12268	12125	12280
10°	12062	12259	12356
15°	11799	11897	11469
20°	11489	11117	10967
25°	11163	10608	11037
30°	10693	10194	11158
35°	10343	9801	10961
40°	9968	9498	11029
45°	9566	9117	10830
50°	9086	8716	10747
55°	8409	8289	10741
60°	7864	7714	10283
65°	6858	7037	9955
70°	5491	6170	8927
75°	3809	5130	8150
80°	2036	4088	7315
85°	678	3021	6444

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 10830 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.9	3.2
10°-20°	418.4	9.1
20°-30°	622.5	13.5
30°-40°	748.3	16.2
40°-50°	787.6	17.1
50°-60°	730.8	15.9
60°-70°	577.8	12.5
70°-80°	353.0	7.7
80°-90°	153.8	3.3
90°-100°	47.9	1.0
100°-110°	10.8	0.2
110°-120°	4.3	0.1
120°-130°	2.4	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°	1187.8	25.8
0°-40°	1936.1	42.0
0°-60°	3454.4	75.0
0°-90°	4539.0	98.6
90°-120°	63.0	1.4
90°-150°	66.0	1.4
90°-180°	66.0	1.4
0°-180°	4605.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1529	1529	1529	1529	1529	
5°	1525	1522	1527	1544	1548	145
15°	1443	1499	1513	1463	1464	407
25°	1302	1385	1322	1361	1384	598
35°	1111	1142	1159	1264	1307	694
45°	908	912	987	1143	1186	700
55°	669	680	787	959	1036	601
65°	423	437	555	734	801	419
75°	160	212	309	475	505	175
85°	14	50	120	234	268	22
90°	0	15	63	148	175	1
95°	0	4	28	81	99	0
105°	0	2	6	16	22	0
115°	0	1	4	7	8	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-LD4-3STD-35-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1528.6	1528.6	1528.6	1528.6	1528.6
2.5°	1530.5	1526.4	1518.0	1526.1	1528.3
5°	1524.9	1521.8	1527.1	1544.2	1548.5
7.5°	1512.1	1523.9	1538.0	1569.1	1579.1
10°	1493.1	1515.5	1557.6	1584.0	1573.8
12.5°	1470.1	1508.1	1564.4	1512.7	1488.8
15°	1443.3	1498.7	1513.4	1463.2	1464.2
17.5°	1411.8	1490.9	1445.8	1444.5	1435.5
20°	1377.9	1464.8	1405.0	1402.5	1392.8
22.5°	1341.5	1430.2	1368.9	1363.9	1390.0
25°	1301.9	1385.1	1321.8	1361.4	1383.5
27.5°	1252.4	1325.9	1282.6	1338.7	1366.4
30°	1202.3	1264.9	1242.4	1320.6	1369.8
32.5°	1155.3	1201.0	1209.4	1313.8	1321.8
35°	1110.7	1141.6	1158.7	1263.9	1306.9
37.5°	1061.8	1070.2	1115.7	1243.1	1284.5
40°	1012.0	1006.7	1079.6	1208.8	1266.1
42.5°	958.5	956.6	1041.3	1191.7	1220.3
45°	907.7	911.7	986.8	1143.1	1185.8
47.5°	855.7	861.0	935.1	1089.9	1142.8
50°	795.3	802.1	889.0	1042.5	1110.7
52.5°	729.9	743.0	844.2	997.7	1066.5
55°	668.6	679.5	787.2	959.4	1035.7
57.5°	612.5	619.0	728.3	911.1	968.7
60°	557.4	558.9	672.9	857.6	912.7
62.5°	494.2	497.0	615.9	794.4	868.2
65°	423.2	436.6	554.6	733.9	800.6
67.5°	356.9	380.2	492.0	678.5	713.4
70°	285.9	325.4	430.7	613.4	638.0
72.5°	220.8	267.2	367.8	540.6	575.1
75°	160.1	212.1	309.2	475.2	505.1
77.5°	107.7	160.7	254.4	402.9	442.5
80°	64.5	117.4	205.5	336.0	380.5
82.5°	33.0	78.8	159.4	281.8	321.7
85°	14.3	49.8	120.5	233.9	268.4
87.5°	4.0	28.3	88.7	189.0	218.3
90°	0.3	14.9	63.2	148.2	174.7
92.5°	0.3	7.2	44.5	112.1	132.3
95°	0.3	3.7	27.7	81.3	99.3
97.5°	0.3	2.2	16.8	57.6	72.9
100°	0.3	1.9	10.0	38.3	52.0
102.5°	0.3	2.2	6.9	24.3	33.9
105°	0.3	2.2	5.6	15.9	22.4
107.5°	0.6	2.2	5.0	11.8	15.6
110°	0.3	1.9	5.3	9.0	12.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.6	1.6	5.0	7.5	9.0
115°	0.3	1.2	4.4	7.2	7.5
117.5°	0.6	0.9	3.4	7.2	7.5
120°	0.6	0.6	2.8	6.9	7.8
122.5°	0.6	0.6	2.2	6.2	7.5
125°	0.3	0.6	1.9	4.7	6.5
127.5°	0.6	0.6	1.6	3.7	5.0
130°	0.6	0.6	1.2	2.8	3.7
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)