

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: P518093

Luminaire Tested: HVL8-4-LD4-2STD-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: P518093
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-2STD-30-UNV-O-EDD-90
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5219.0 lumens
Efficiency: N/A
Efficacy: 79.8 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

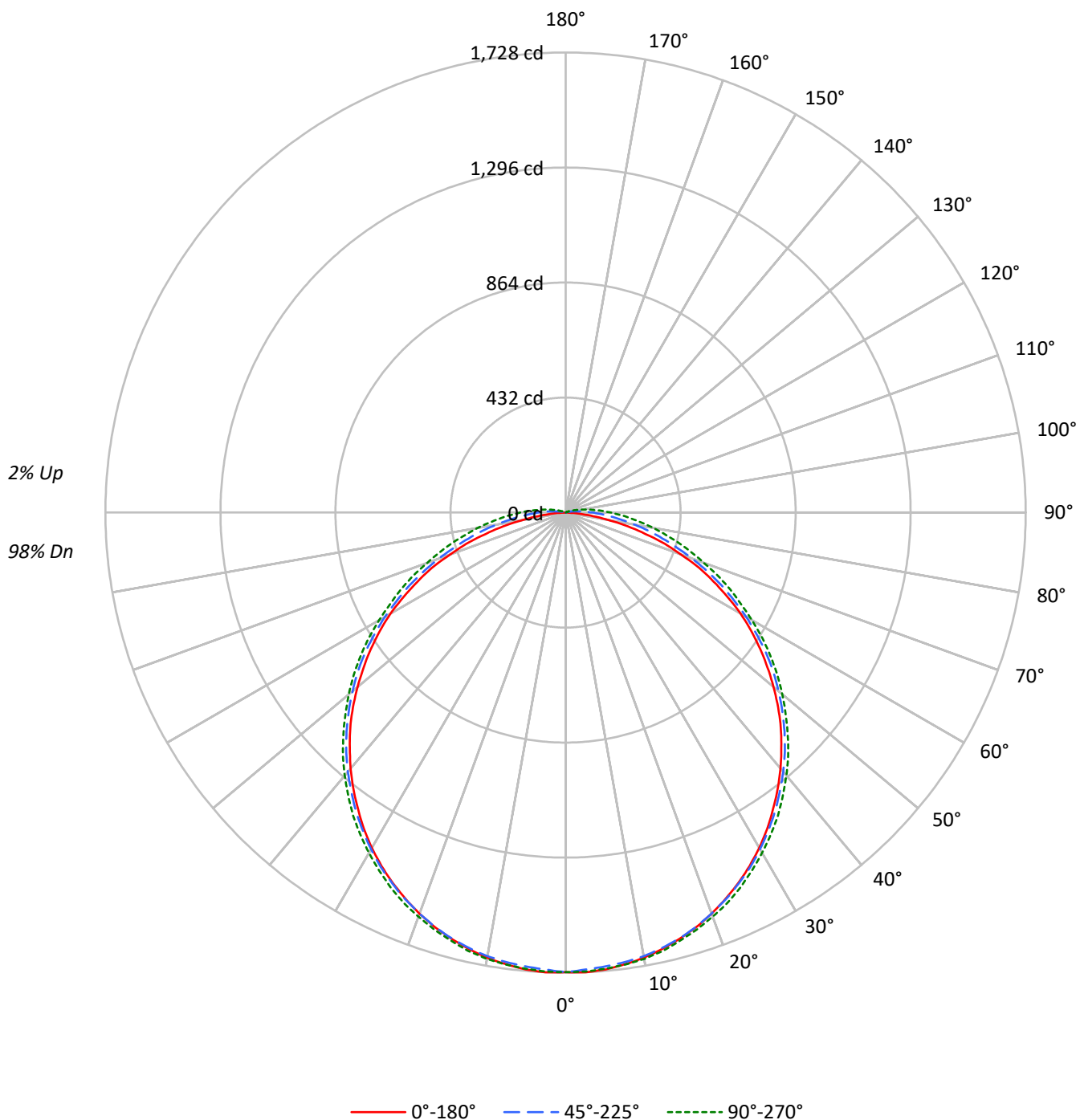
Input Watts (W): 65.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	6967	6967	6967
5°	6954	6812	6818
10°	6907	6690	6682
15°	6848	6555	6518
20°	6784	6404	6359
25°	6707	6249	6197
30°	6619	6084	6013
35°	6507	5903	5831
40°	6391	5712	5618
45°	6266	5504	5389
50°	6103	5263	5142
55°	5927	4999	4870
60°	5717	4657	4552
65°	5376	4274	4238
70°	4886	3822	3871
75°	4191	3327	3539
80°	3151	2842	3235
85°	1685	2352	2946

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 6266 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	163.3	3.1
10°-20°	468.5	9.0
20°-30°	710.9	13.6
30°-40°	859.6	16.5
40°-50°	897.0	17.2
50°-60°	820.1	15.7
60°-70°	639.3	12.2
70°-80°	399.9	7.7
80°-90°	181.6	3.5
90°-100°	60.9	1.2
100°-110°	15.3	0.3
110°-120°	2.4	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°	1342.8	25.7
0°-40°	2202.5	42.2
0°-60°	3919.5	75.1
0°-90°	5140.4	98.5
90°-120°	78.6	1.5
90°-150°	78.6	1.5
90°-180°	79.0	1.5
0°-180°	5219.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1726	1726	1726	1726	1726	
5°	1722	1719	1712	1720	1720	164
15°	1657	1660	1655	1665	1664	468
25°	1535	1536	1538	1551	1554	707
35°	1359	1365	1371	1385	1390	851
45°	1143	1154	1163	1174	1180	881
55°	892	903	920	933	939	797
65°	613	624	645	671	682	607
75°	310	330	378	423	439	331
85°	54	99	170	225	245	68
90°	0	37	100	151	169	2
95°	0	10	52	94	109	0
105°	1	1	8	25	34	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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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1726.1	1726.1	1726.1	1726.1	1726.1
2.5°	1728.2	1725.7	1718.0	1725.7	1725.3
5°	1722.5	1719.2	1711.5	1719.6	1719.6
7.5°	1711.1	1709.9	1702.9	1712.3	1712.3
10°	1697.6	1697.2	1691.5	1701.7	1702.1
12.5°	1678.9	1680.6	1675.3	1685.0	1686.3
15°	1657.0	1659.8	1655.3	1664.7	1664.3
17.5°	1632.9	1634.6	1631.3	1641.9	1641.5
20°	1603.2	1605.3	1602.8	1613.8	1615.0
22.5°	1570.3	1573.1	1572.7	1584.1	1587.4
25°	1535.3	1536.5	1538.1	1551.2	1553.6
27.5°	1496.6	1498.7	1501.5	1513.3	1515.8
30°	1454.3	1457.6	1460.8	1473.0	1476.3
32.5°	1409.6	1412.8	1416.9	1432.7	1434.4
35°	1359.1	1365.2	1370.9	1384.7	1390.4
37.5°	1308.6	1316.4	1321.7	1336.3	1340.8
40°	1255.3	1263.1	1271.6	1287.1	1289.9
42.5°	1199.6	1208.5	1218.7	1232.5	1237.4
45°	1143.4	1153.6	1163.0	1174.4	1180.1
47.5°	1082.8	1093.0	1104.4	1117.4	1121.0
50°	1020.1	1031.9	1044.1	1056.3	1062.9
52.5°	955.8	970.1	983.9	996.9	1003.0
55°	892.4	902.9	919.6	933.1	939.2
57.5°	826.4	835.4	850.5	872.4	875.7
60°	759.3	767.4	782.9	800.8	808.1
62.5°	685.2	696.2	712.5	735.3	741.8
65°	613.2	623.8	645.4	671.0	681.6
67.5°	543.6	547.3	575.0	601.8	618.9
70°	461.4	475.3	507.4	540.4	553.4
72.5°	390.6	404.5	439.9	478.5	494.8
75°	310.5	329.6	377.6	422.8	438.7
77.5°	240.1	261.2	320.6	366.2	384.5
80°	167.6	200.6	265.3	316.6	336.5
82.5°	105.4	146.1	215.3	269.0	286.5
85°	53.7	99.3	170.5	225.4	245.4
87.5°	14.2	64.3	132.7	185.1	205.5
90°	0.4	37.0	100.5	151.0	169.3
92.5°	0.4	20.8	74.9	120.0	138.8
95°	0.4	9.8	52.1	94.4	109.1
97.5°	0.4	4.1	35.8	71.2	85.9
100°	0.4	2.0	22.8	51.7	64.3
102.5°	0.8	1.2	14.2	37.0	47.2
105°	0.8	1.2	8.5	25.2	33.8
107.5°	0.8	1.2	4.9	17.1	23.2
110°	1.2	1.2	2.8	10.6	15.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.2	1.2	1.6	6.9	10.2
115°	1.2	1.2	1.6	4.5	6.5
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)