

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: P518006

Luminaire Tested: HVL8-2-LD4-3STD-40-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: P518006
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-3STD-40-UNV-O-EDD
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4229.0 lumens
Efficiency: N/A
Efficacy: 88.5 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

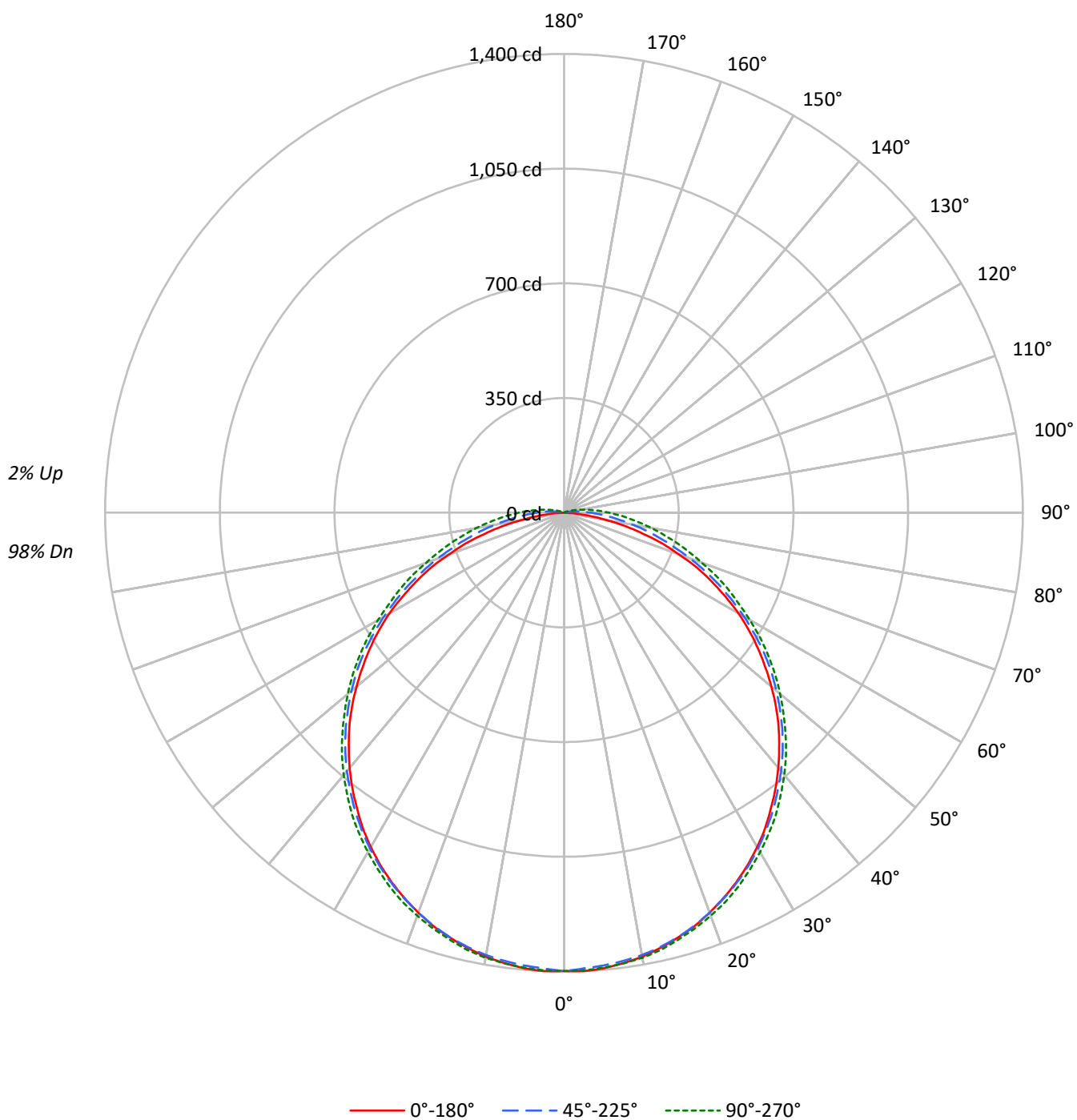
Input Watts (W): 47.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	11292	11292	11292
5°	11229	11011	11050
10°	11113	10788	10829
15°	10976	10544	10563
20°	10832	10276	10305
25°	10667	10003	10043
30°	10480	9712	9744
35°	10255	9396	9449
40°	10019	9066	9105
45°	9764	8707	8733
50°	9443	8296	8333
55°	9095	7847	7892
60°	8681	7273	7377
65°	8053	6634	6868
70°	7181	5890	6274
75°	5986	5077	5734
80°	4287	4277	5243
85°	2063	3465	4773

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 9764 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	132.4	3.1
10°-20°	379.7	9.0
20°-30°	576.1	13.6
30°-40°	696.6	16.5
40°-50°	726.8	17.2
50°-60°	664.5	15.7
60°-70°	518.0	12.2
70°-80°	324.1	7.7
80°-90°	147.2	3.5
90°-100°	49.3	1.2
100°-110°	12.4	0.3
110°-120°	1.9	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°	1088.1	25.7
0°-40°	1784.7	42.2
0°-60°	3176.1	75.1
0°-90°	4165.3	98.5
90°-120°	63.7	1.5
90°-150°	63.7	1.5
90°-180°	64.0	1.5
0°-180°	4229.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1399	1399	1399	1399	1399	
5°	1396	1393	1387	1393	1393	133
15°	1343	1345	1341	1349	1349	379
25°	1244	1245	1246	1257	1259	573
35°	1101	1106	1111	1122	1127	689
45°	926	935	942	952	956	714
55°	723	732	745	756	761	646
65°	497	506	523	544	552	492
75°	252	267	306	343	355	268
85°	44	80	138	183	199	55
90°	0	30	81	122	137	2
95°	0	8	42	76	88	0
105°	1	1	7	20	27	1
115°	1	1	1	4	5	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°	1398.7	1398.7	1398.7	1398.7	1398.7
2.5°	1400.3	1398.4	1392.1	1398.4	1398.0
5°	1395.7	1393.1	1386.8	1393.4	1393.4
7.5°	1386.5	1385.5	1379.9	1387.5	1387.5
10°	1375.6	1375.3	1370.7	1378.9	1379.2
12.5°	1360.4	1361.8	1357.5	1365.4	1366.4
15°	1342.6	1345.0	1341.3	1348.9	1348.6
17.5°	1323.2	1324.5	1321.9	1330.4	1330.1
20°	1299.1	1300.8	1298.8	1307.7	1308.7
22.5°	1272.4	1274.7	1274.4	1283.6	1286.3
25°	1244.1	1245.0	1246.4	1256.9	1258.9
27.5°	1212.7	1214.4	1216.7	1226.3	1228.2
30°	1178.4	1181.1	1183.7	1193.6	1196.2
32.5°	1142.2	1144.8	1148.1	1161.0	1162.3
35°	1101.3	1106.2	1110.8	1122.1	1126.7
37.5°	1060.4	1066.7	1071.0	1082.8	1086.4
40°	1017.2	1023.5	1030.4	1042.9	1045.2
42.5°	972.0	979.3	987.5	998.7	1002.7
45°	926.5	934.8	942.4	951.6	956.2
47.5°	877.4	885.6	894.9	905.4	908.4
50°	826.6	836.2	846.1	856.0	861.2
52.5°	774.5	786.1	797.3	807.8	812.8
55°	723.1	731.7	745.2	756.1	761.0
57.5°	669.7	676.9	689.1	706.9	709.6
60°	615.3	621.9	634.4	648.9	654.8
62.5°	555.3	564.2	577.4	595.8	601.1
65°	496.9	505.5	522.9	543.7	552.3
67.5°	440.5	443.5	465.9	487.7	501.5
70°	373.9	385.1	411.2	437.9	448.4
72.5°	316.5	327.7	356.4	387.8	400.9
75°	251.6	267.1	306.0	342.6	355.4
77.5°	194.5	211.7	259.8	296.8	311.6
80°	135.8	162.6	215.0	256.5	272.7
82.5°	85.4	118.4	174.4	217.9	232.1
85°	43.5	80.5	138.2	182.7	198.8
87.5°	11.5	52.1	107.5	150.0	166.5
90°	0.3	30.0	81.4	122.3	137.2
92.5°	0.3	16.8	60.7	97.3	112.4
95°	0.3	7.9	42.2	76.5	88.4
97.5°	0.3	3.3	29.0	57.7	69.6
100°	0.3	1.6	18.5	41.9	52.1
102.5°	0.7	1.0	11.5	30.0	38.2
105°	0.7	1.0	6.9	20.4	27.4
107.5°	0.7	1.0	4.0	13.8	18.8
110°	1.0	1.0	2.3	8.6	12.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.0	1.0	1.3	5.6	8.2
115°	1.0	1.0	1.3	3.6	5.3
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)