

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: P518085

Luminaire Tested: HVL8-4-LD4-2LO-40-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: P518085
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-2LO-40-UNV-O-EDD-90
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4164.0 lumens
Efficiency: N/A
Efficacy: 90.3 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

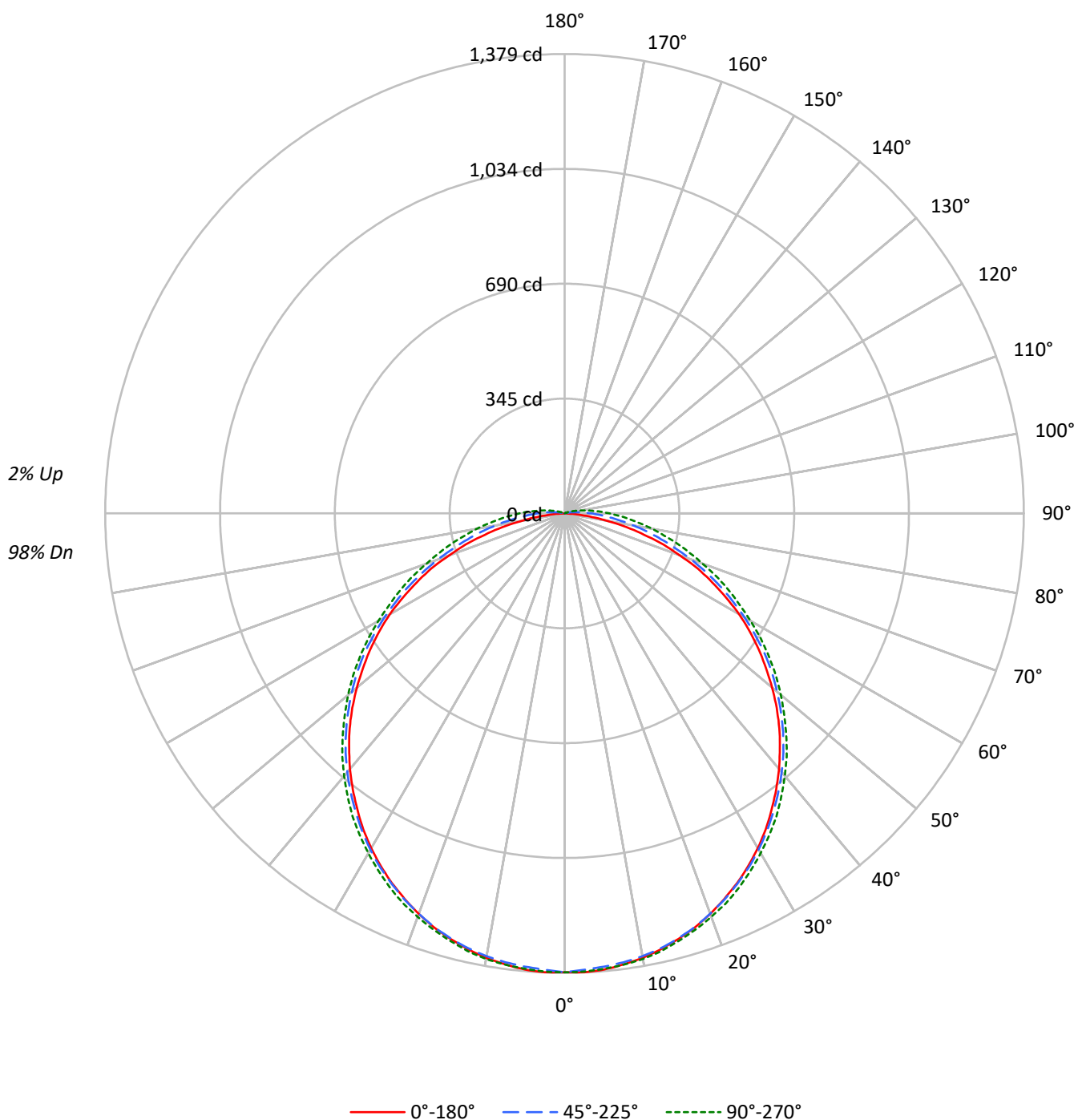
Input Watts (W): 46.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	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°	5559	5559	5559
5°	5548	5435	5440
10°	5511	5338	5331
15°	5463	5230	5201
20°	5413	5109	5073
25°	5351	4986	4944
30°	5281	4854	4797
35°	5192	4710	4652
40°	5099	4557	4483
45°	4999	4391	4299
50°	4869	4199	4103
55°	4729	3988	3886
60°	4561	3715	3632
65°	4290	3410	3381
70°	3899	3049	3089
75°	3343	2655	2824
80°	2516	2268	2581
85°	1346	1876	2350

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4999 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	130.3	3.1
10°-20°	373.8	9.0
20°-30°	567.2	13.6
30°-40°	685.9	16.5
40°-50°	715.7	17.2
50°-60°	654.3	15.7
60°-70°	510.1	12.2
70°-80°	319.1	7.7
80°-90°	144.9	3.5
90°-100°	48.6	1.2
100°-110°	12.2	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°	1071.4	25.7
0°-40°	1757.3	42.2
0°-60°	3127.2	75.1
0°-90°	4101.3	98.5
90°-120°	62.7	1.5
90°-150°	62.7	1.5
90°-180°	63.0	1.5
0°-180°	4164.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1377	1377	1377	1377	1377	
5°	1374	1372	1366	1372	1372	131
15°	1322	1324	1321	1328	1328	373
25°	1225	1226	1227	1238	1240	564
35°	1084	1089	1094	1105	1109	679
45°	912	920	928	937	942	703
55°	712	720	734	744	749	636
65°	489	498	515	535	544	484
75°	248	263	301	337	350	264
85°	43	79	136	180	196	54
90°	0	30	80	120	135	2
95°	0	8	42	75	87	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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CATALOG NUMBER: HVL8-4-LD4-2LO-40-UNV-O-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1377.2	1377.2	1377.2	1377.2	1377.2
2.5°	1378.8	1376.9	1370.7	1376.9	1376.6
5°	1374.3	1371.7	1365.5	1372.0	1372.0
7.5°	1365.2	1364.2	1358.7	1366.2	1366.2
10°	1354.5	1354.1	1349.6	1357.7	1358.0
12.5°	1339.5	1340.8	1336.6	1344.4	1345.4
15°	1322.0	1324.3	1320.7	1328.2	1327.9
17.5°	1302.9	1304.2	1301.6	1310.0	1309.7
20°	1279.2	1280.8	1278.8	1287.6	1288.6
22.5°	1252.9	1255.1	1254.8	1263.9	1266.5
25°	1224.9	1225.9	1227.2	1237.6	1239.5
27.5°	1194.1	1195.7	1198.0	1207.4	1209.4
30°	1160.3	1162.9	1165.5	1175.3	1177.9
32.5°	1124.6	1127.2	1130.5	1143.1	1144.4
35°	1084.4	1089.2	1093.8	1104.8	1109.4
37.5°	1044.1	1050.3	1054.5	1066.2	1069.7
40°	1001.6	1007.7	1014.6	1026.9	1029.2
42.5°	957.1	964.2	972.4	983.4	987.3
45°	912.3	920.4	927.9	937.0	941.5
47.5°	863.9	872.0	881.1	891.5	894.4
50°	813.9	823.3	833.1	842.8	848.0
52.5°	762.6	774.0	785.0	795.4	800.3
55°	712.0	720.4	733.7	744.4	749.3
57.5°	659.4	666.5	678.5	696.1	698.7
60°	605.8	612.3	624.6	638.9	644.8
62.5°	546.7	555.5	568.5	586.7	591.9
65°	489.3	497.7	514.9	535.4	543.8
67.5°	433.7	436.7	458.7	480.2	493.8
70°	368.2	379.2	404.8	431.1	441.5
72.5°	311.7	322.7	351.0	381.8	394.8
75°	247.7	263.0	301.3	337.3	350.0
77.5°	191.5	208.4	255.8	292.2	306.8
80°	133.8	160.1	211.7	252.6	268.5
82.5°	84.1	116.6	171.7	214.6	228.6
85°	42.9	79.2	136.0	179.9	195.8
87.5°	11.4	51.3	105.8	147.7	164.0
90°	0.3	29.5	80.2	120.4	135.1
92.5°	0.3	16.6	59.7	95.8	110.7
95°	0.3	7.8	41.6	75.3	87.0
97.5°	0.3	3.2	28.6	56.8	68.5
100°	0.3	1.6	18.2	41.2	51.3
102.5°	0.6	1.0	11.4	29.5	37.7
105°	0.6	1.0	6.8	20.1	26.9
107.5°	0.6	1.0	3.9	13.6	18.5
110°	1.0	1.0	2.3	8.4	12.3

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CATALOG NUMBER: HVL8-4-LD4-2LO-40-UNV-O-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.0	1.0	1.3	5.5	8.1
115°	1.0	1.0	1.3	3.6	5.2
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)