

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: P518022

Luminaire Tested: HVL8-4-LD4-1HI-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: P518022
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-1HI-40-UNV-O-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

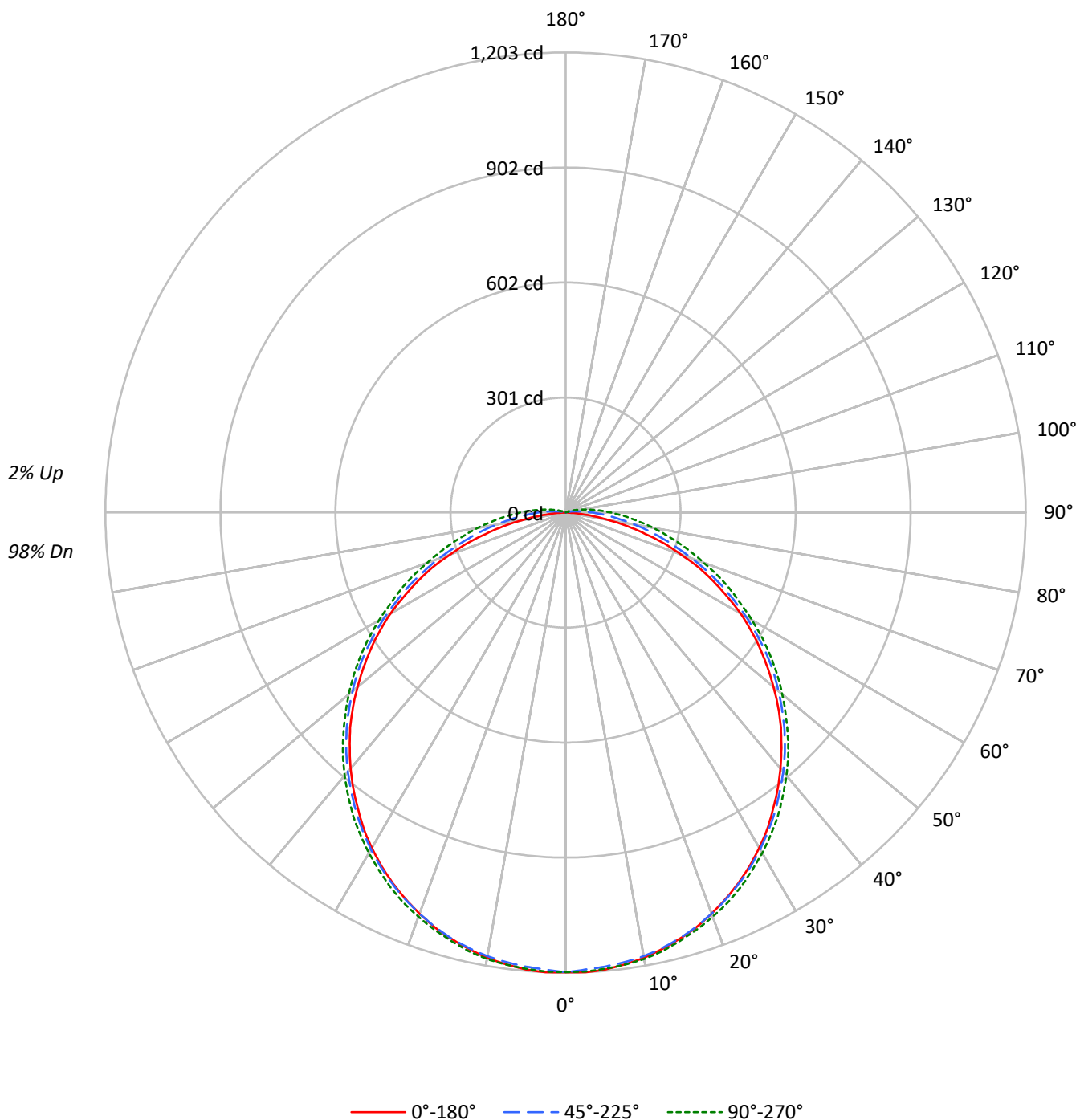
Lumens per Lamp: N/A
Luminaire Lumens: 3634.1 lumens
Efficiency: N/A
Efficacy: 84.5 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

Input Watts (W): 43
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°	4851	4851	4851
5°	4842	4743	4748
10°	4810	4658	4653
15°	4768	4564	4538
20°	4723	4459	4428
25°	4670	4351	4315
30°	4609	4237	4187
35°	4531	4110	4060
40°	4450	3977	3912
45°	4363	3832	3752
50°	4249	3664	3581
55°	4127	3481	3391
60°	3981	3242	3170
65°	3744	2976	2951
70°	3402	2661	2695
75°	2918	2317	2464
80°	2194	1979	2252
85°	1173	1637	2052

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4363 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	113.7	3.1
10°-20°	326.3	9.0
20°-30°	495.0	13.6
30°-40°	598.6	16.5
40°-50°	624.6	17.2
50°-60°	571.0	15.7
60°-70°	445.2	12.2
70°-80°	278.5	7.7
80°-90°	126.5	3.5
90°-100°	42.4	1.2
100°-110°	10.7	0.3
110°-120°	1.7	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°	935.0	25.7
0°-40°	1533.6	42.2
0°-60°	2729.2	75.1
0°-90°	3579.3	98.5
90°-120°	54.7	1.5
90°-150°	54.7	1.5
90°-180°	55.0	1.5
0°-180°	3634.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1202	1202	1202	1202	1202	
5°	1199	1197	1192	1197	1197	114
15°	1154	1156	1153	1159	1159	326
25°	1069	1070	1071	1080	1082	493
35°	946	951	955	964	968	592
45°	796	803	810	818	822	614
55°	621	629	640	650	654	555
65°	427	434	449	467	475	422
75°	216	230	263	294	305	230
85°	37	69	119	157	171	47
90°	0	26	70	105	118	1
95°	0	7	36	66	76	0
105°	1	1	6	18	24	1
115°	1	1	1	3	4	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

TEST NUMBER: P518022

CATALOG NUMBER: HVL8-4-LD4-1HI-40-UNV-O-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1201.9	1201.9	1201.9	1201.9	1201.9
2.5°	1203.3	1201.6	1196.2	1201.6	1201.3
5°	1199.4	1197.1	1191.7	1197.4	1197.4
7.5°	1191.4	1190.6	1185.8	1192.3	1192.3
10°	1182.1	1181.8	1177.8	1184.9	1185.2
12.5°	1169.0	1170.2	1166.5	1173.3	1174.1
15°	1153.7	1155.7	1152.6	1159.1	1158.8
17.5°	1137.0	1138.2	1135.9	1143.3	1143.0
20°	1116.3	1117.8	1116.1	1123.7	1124.6
22.5°	1093.4	1095.4	1095.1	1103.0	1105.3
25°	1069.0	1069.9	1071.0	1080.1	1081.8
27.5°	1042.1	1043.5	1045.5	1053.7	1055.4
30°	1012.6	1014.9	1017.2	1025.7	1027.9
32.5°	981.5	983.7	986.6	997.6	998.8
35°	946.3	950.6	954.6	964.2	968.2
37.5°	911.2	916.6	920.3	930.5	933.6
40°	874.1	879.5	885.4	896.2	898.2
42.5°	835.3	841.5	848.6	858.2	861.6
45°	796.2	803.3	809.8	817.7	821.7
47.5°	754.0	761.0	769.0	778.0	780.6
50°	710.3	718.5	727.0	735.5	740.1
52.5°	665.6	675.5	685.1	694.2	698.4
55°	621.4	628.7	640.3	649.7	653.9
57.5°	575.5	581.7	592.2	607.5	609.7
60°	528.7	534.4	545.1	557.6	562.7
62.5°	477.1	484.8	496.1	512.0	516.5
65°	427.0	434.4	449.4	467.2	474.6
67.5°	378.5	381.1	400.4	419.1	431.0
70°	321.3	330.9	353.3	376.3	385.3
72.5°	272.0	281.6	306.3	333.2	344.5
75°	216.2	229.5	262.9	294.4	305.4
77.5°	167.2	181.9	223.3	255.0	267.8
80°	116.7	139.7	184.7	220.4	234.3
82.5°	73.4	101.7	149.9	187.3	199.5
85°	37.4	69.1	118.7	157.0	170.9
87.5°	9.9	44.8	92.4	128.9	143.1
90°	0.3	25.8	70.0	105.1	117.9
92.5°	0.3	14.5	52.1	83.6	96.6
95°	0.3	6.8	36.3	65.7	75.9
97.5°	0.3	2.8	24.9	49.6	59.8
100°	0.3	1.4	15.9	36.0	44.8
102.5°	0.6	0.9	9.9	25.8	32.9
105°	0.6	0.9	6.0	17.6	23.5
107.5°	0.6	0.9	3.4	11.9	16.2
110°	0.9	0.9	2.0	7.4	10.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.9	0.9	1.1	4.8	7.1
115°	0.9	0.9	1.1	3.1	4.5
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)