

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: P518056

Luminaire Tested: HVL8-4-LD4-1STD-50-UNV-C-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: P518056
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-1STD-50-UNV-C-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3775.0 lumens
Efficiency: N/A
Efficacy: 115.8 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

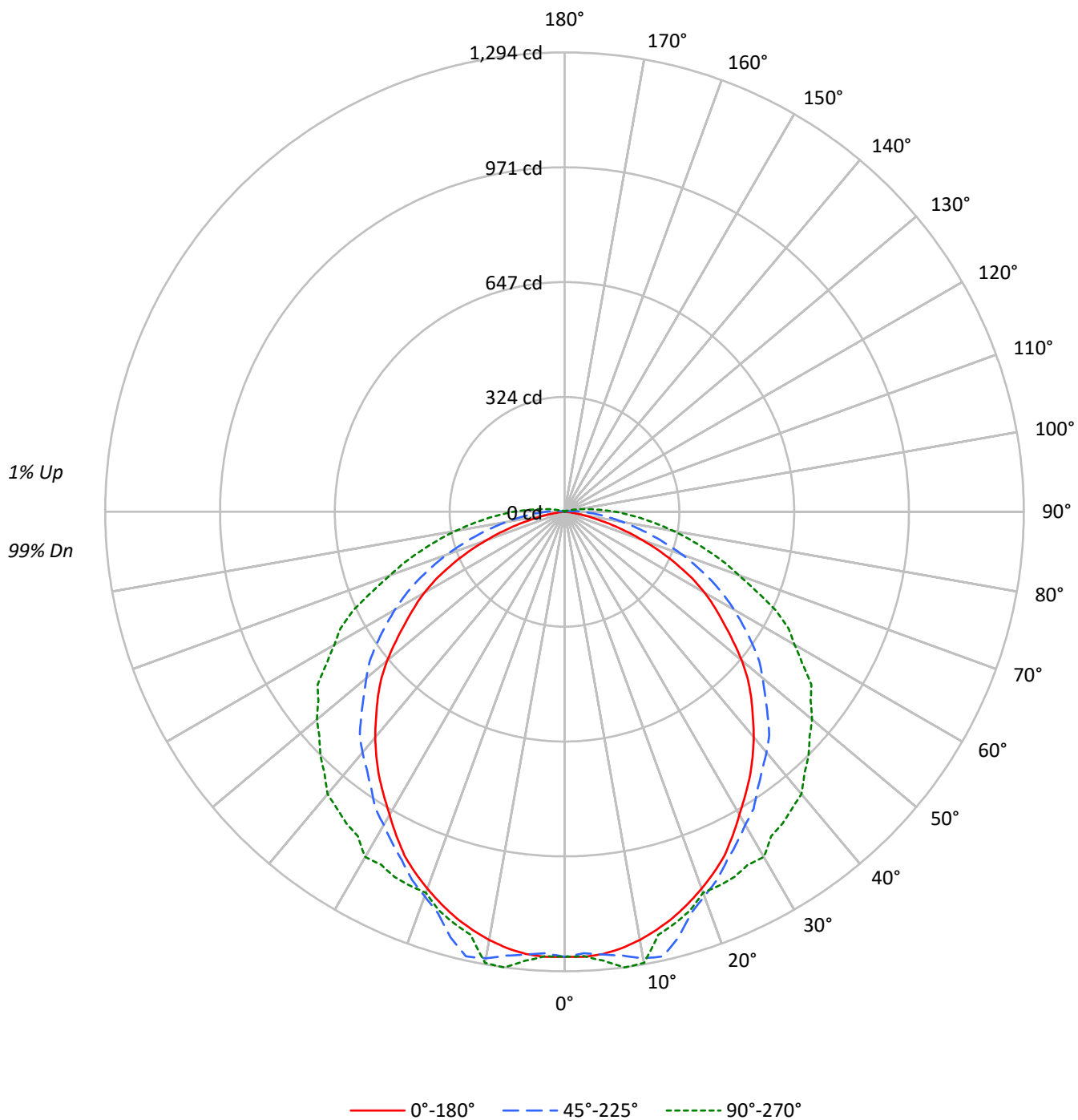
Input Watts (W): 32.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	5058	5058	5058
5°	5046	4982	5033
10°	4980	5050	5064
15°	4890	4913	4701
20°	4779	4602	4495
25°	4663	4403	4524
30°	4486	4242	4573
35°	4359	4090	4492
40°	4224	3975	4520
45°	4078	3828	4439
50°	3900	3674	4405
55°	3641	3508	4403
60°	3440	3281	4215
65°	3041	3010	4080
70°	2481	2659	3659
75°	1771	2234	3340
80°	993	1805	2998
85°	367	1363	2641

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 4439 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	120.4	3.2
10°-20°	343.0	9.1
20°-30°	510.3	13.5
30°-40°	613.4	16.2
40°-50°	645.6	17.1
50°-60°	599.1	15.9
60°-70°	473.7	12.5
70°-80°	289.3	7.7
80°-90°	126.1	3.3
90°-100°	39.3	1.0
100°-110°	8.8	0.2
110°-120°	3.5	0.1
120°-130°	2.0	0.1
130°-140°	0.5	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°	973.7	25.8
0°-40°	1587.1	42.0
0°-60°	2831.8	75.0
0°-90°	3720.9	98.6
90°-120°	51.6	1.4
90°-150°	54.2	1.4
90°-180°	54.0	1.4
0°-180°	3775.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1253	1253	1253	1253	1253	
5°	1250	1248	1252	1266	1269	118
15°	1183	1229	1241	1200	1200	333
25°	1067	1135	1084	1116	1134	490
35°	910	936	950	1036	1071	569
45°	744	747	809	937	972	574
55°	548	557	645	786	849	492
65°	347	358	455	602	656	344
75°	131	174	254	390	414	143
85°	12	41	99	192	220	18
90°	0	12	52	122	143	1
95°	0	3	23	67	81	0
105°	0	2	5	13	18	0
115°	0	1	4	6	6	0
125°	0	0	2	4	5	0
135°	0	0	0	1	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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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1253.1	1253.1	1253.1	1253.1	1253.1
2.5°	1254.6	1251.3	1244.4	1251.1	1252.8
5°	1250.0	1247.5	1251.8	1265.9	1269.4
7.5°	1239.6	1249.3	1260.8	1286.3	1294.4
10°	1224.0	1242.4	1276.8	1298.5	1290.1
12.5°	1205.1	1236.2	1282.5	1240.1	1220.4
15°	1183.2	1228.6	1240.6	1199.5	1200.3
17.5°	1157.4	1222.2	1185.2	1184.2	1176.8
20°	1129.5	1200.8	1151.8	1149.7	1141.8
22.5°	1099.7	1172.4	1122.1	1118.1	1139.5
25°	1067.3	1135.4	1083.6	1116.0	1134.1
27.5°	1026.7	1086.9	1051.4	1097.4	1120.1
30°	985.6	1036.9	1018.5	1082.6	1122.9
32.5°	947.0	984.6	991.4	1077.0	1083.6
35°	910.5	935.8	949.8	1036.1	1071.3
37.5°	870.5	877.3	914.6	1019.0	1053.0
40°	829.6	825.3	885.0	990.9	1037.9
42.5°	785.7	784.2	853.6	976.9	1000.4
45°	744.1	747.4	808.9	937.1	972.0
47.5°	701.5	705.8	766.6	893.4	936.8
50°	651.9	657.6	728.8	854.6	910.5
52.5°	598.3	609.1	692.0	817.9	874.3
55°	548.1	557.0	645.3	786.5	849.0
57.5°	502.1	507.5	597.1	746.9	794.1
60°	456.9	458.2	551.6	703.0	748.2
62.5°	405.1	407.4	504.9	651.2	711.7
65°	346.9	357.9	454.6	601.7	656.3
67.5°	292.5	311.7	403.3	556.2	584.8
70°	234.3	266.8	353.0	502.9	523.0
72.5°	181.0	219.0	301.5	443.1	471.5
75°	131.2	173.8	253.5	389.5	414.0
77.5°	88.3	131.7	208.6	330.3	362.7
80°	52.8	96.2	168.5	275.4	311.9
82.5°	27.1	64.6	130.7	231.0	263.7
85°	11.7	40.8	98.8	191.7	220.0
87.5°	3.3	23.2	72.8	154.9	178.9
90°	0.3	12.3	51.8	121.5	143.2
92.5°	0.3	5.9	36.5	91.9	108.5
95°	0.3	3.1	22.7	66.6	81.4
97.5°	0.3	1.8	13.8	47.2	59.7
100°	0.3	1.5	8.2	31.4	42.6
102.5°	0.3	1.8	5.6	19.9	27.8
105°	0.3	1.8	4.6	13.0	18.4
107.5°	0.5	1.8	4.1	9.7	12.8
110°	0.3	1.5	4.3	7.4	10.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.5	1.3	4.1	6.1	7.4
115°	0.3	1.0	3.6	5.9	6.1
117.5°	0.5	0.8	2.8	5.9	6.1
120°	0.5	0.5	2.3	5.6	6.4
122.5°	0.5	0.5	1.8	5.1	6.1
125°	0.3	0.5	1.5	3.8	5.4
127.5°	0.5	0.5	1.3	3.1	4.1
130°	0.5	0.5	1.0	2.3	3.1
132.5°	0.5	0.5	0.8	1.8	2.3
135°	0.5	0.5	0.5	1.3	1.8
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)