

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: P518077

Luminaire Tested: HVL8-4-LD4-2LO-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: P518077
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-2LO-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: 4051.0 lumens
Efficiency: N/A
Efficacy: 87.9 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

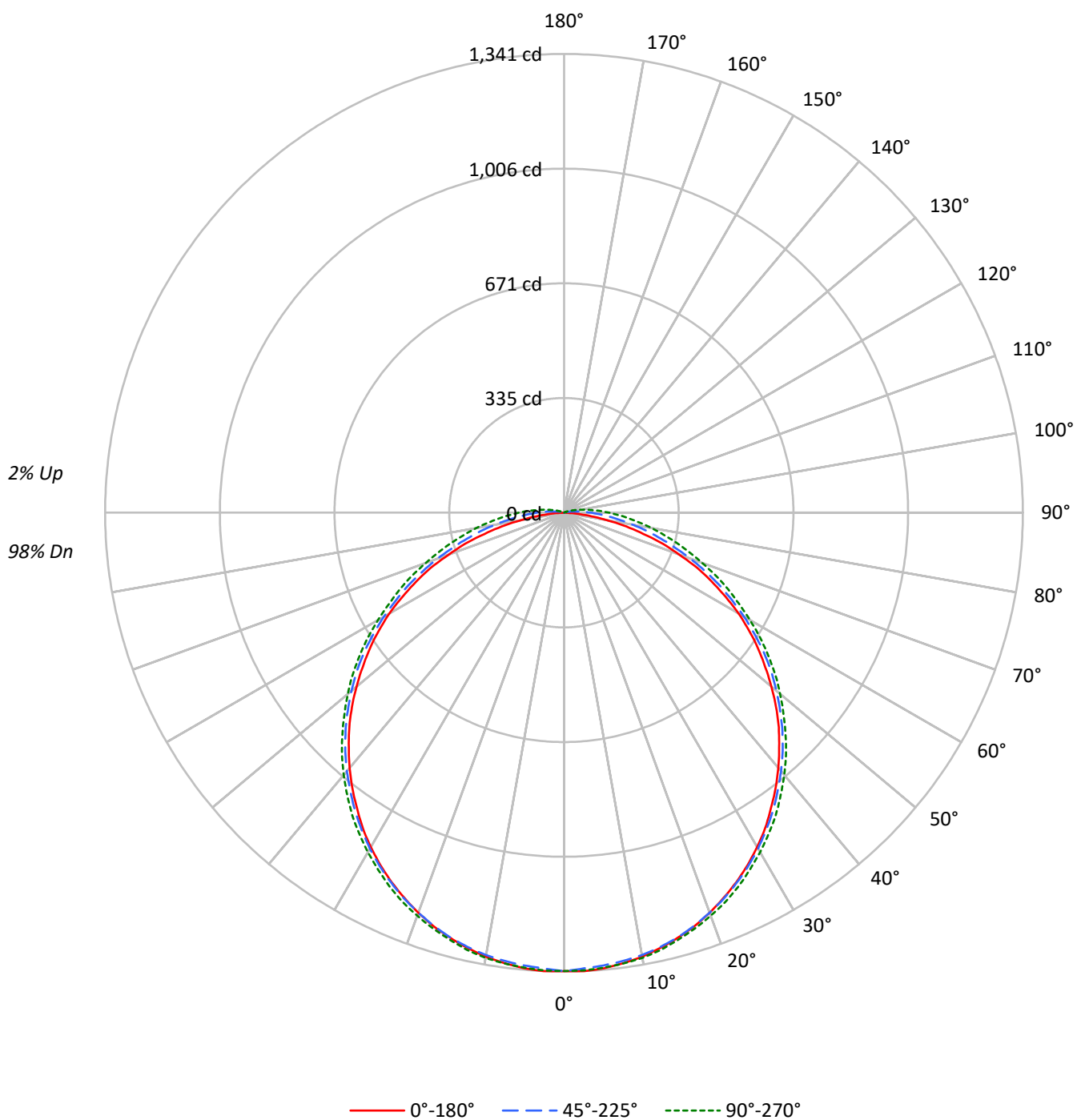
Input Watts (W): 46.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		101
1	108	102	98	94	105	100	96	92	95	92	89		91	88	86		87
2	98	89	82	76	95	87	80	75	83	77	73		79	75	71		76
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		67
4	81	69	60	53	79	67	59	52	65	57	52		62	56	51		60
5	75	61	52	45	72	60	52	45	58	50	44		56	49	44		54
6	69	55	46	40	67	54	46	39	52	45	39		50	44	38		49
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		44
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		41
9	55	42	34	28	54	41	33	28	40	33	28		39	32	27		38
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		35

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5408	5408	5408
5°	5398	5288	5293
10°	5362	5193	5187
15°	5315	5088	5059
20°	5265	4971	4936
25°	5206	4851	4810
30°	5138	4723	4667
35°	5051	4582	4526
40°	4961	4433	4361
45°	4864	4272	4183
50°	4737	4085	3991
55°	4601	3880	3780
60°	4438	3615	3534
65°	4173	3317	3289
70°	3793	2967	3005
75°	3253	2583	2747
80°	2446	2206	2511
85°	1308	1825	2287

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4864 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.8	3.1
10°-20°	363.7	9.0
20°-30°	551.8	13.6
30°-40°	667.3	16.5
40°-50°	696.2	17.2
50°-60°	636.6	15.7
60°-70°	496.2	12.2
70°-80°	310.4	7.7
80°-90°	141.0	3.5
90°-100°	47.3	1.2
100°-110°	11.8	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°	1042.3	25.7
0°-40°	1709.6	42.2
0°-60°	3042.4	75.1
0°-90°	3990.0	98.5
90°-120°	61.0	1.5
90°-150°	61.0	1.5
90°-180°	61.0	1.5
0°-180°	4051.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1340	1340	1340	1340	1340	
5°	1337	1334	1328	1335	1335	127
15°	1286	1288	1285	1292	1292	363
25°	1192	1193	1194	1204	1206	549
35°	1055	1060	1064	1075	1079	660
45°	888	895	903	912	916	684
55°	693	701	714	724	729	619
65°	476	484	501	521	529	471
75°	241	256	293	328	340	257
85°	42	77	132	175	190	53
90°	0	29	78	117	131	2
95°	0	8	40	73	85	0
105°	1	1	7	20	26	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°	1339.8	1339.8	1339.8	1339.8	1339.8
2.5°	1341.4	1339.5	1333.5	1339.5	1339.2
5°	1337.0	1334.5	1328.5	1334.8	1334.8
7.5°	1328.1	1327.2	1321.8	1329.1	1329.1
10°	1317.7	1317.4	1313.0	1320.9	1321.2
12.5°	1303.2	1304.5	1300.3	1307.9	1308.9
15°	1286.1	1288.3	1284.9	1292.1	1291.8
17.5°	1267.5	1268.8	1266.2	1274.4	1274.1
20°	1244.4	1246.0	1244.1	1252.7	1253.6
22.5°	1218.9	1221.1	1220.8	1229.6	1232.1
25°	1191.7	1192.6	1193.9	1204.0	1205.9
27.5°	1161.7	1163.3	1165.5	1174.6	1176.5
30°	1128.8	1131.4	1133.9	1143.4	1145.9
32.5°	1094.1	1096.6	1099.8	1112.1	1113.4
35°	1054.9	1059.7	1064.1	1074.8	1079.3
37.5°	1015.8	1021.8	1025.9	1037.2	1040.7
40°	974.4	980.4	987.0	999.0	1001.2
42.5°	931.1	938.1	946.0	956.7	960.5
45°	887.5	895.4	902.7	911.5	916.0
47.5°	840.5	848.4	857.2	867.3	870.2
50°	791.8	801.0	810.5	819.9	825.0
52.5°	741.9	753.0	763.7	773.8	778.6
55°	692.7	700.9	713.8	724.2	729.0
57.5°	641.5	648.4	660.1	677.2	679.7
60°	589.4	595.7	607.7	621.6	627.3
62.5°	531.9	540.4	553.0	570.7	575.8
65°	476.0	484.2	500.9	520.8	529.0
67.5°	422.0	424.8	446.3	467.1	480.4
70°	358.2	368.9	393.9	419.4	429.6
72.5°	303.2	314.0	341.4	371.4	384.1
75°	241.0	255.8	293.1	328.2	340.5
77.5°	186.4	202.8	248.9	284.3	298.5
80°	130.1	155.7	205.9	245.7	261.2
82.5°	81.8	113.4	167.1	208.8	222.4
85°	41.7	77.1	132.3	175.0	190.5
87.5°	11.1	49.9	103.0	143.7	159.5
90°	0.3	28.7	78.0	117.2	131.4
92.5°	0.3	16.1	58.1	93.2	107.7
95°	0.3	7.6	40.4	73.3	84.6
97.5°	0.3	3.2	27.8	55.3	66.6
100°	0.3	1.6	17.7	40.1	49.9
102.5°	0.6	0.9	11.1	28.7	36.6
105°	0.6	0.9	6.6	19.6	26.2
107.5°	0.6	0.9	3.8	13.3	18.0
110°	0.9	0.9	2.2	8.2	12.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.9	0.9	1.3	5.4	7.9
115°	0.9	0.9	1.3	3.5	5.1
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)