

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: P518014

Luminaire Tested: HVL8-4-LD4-1HI-30-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: P518014
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-1HI-30-UNV-O-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

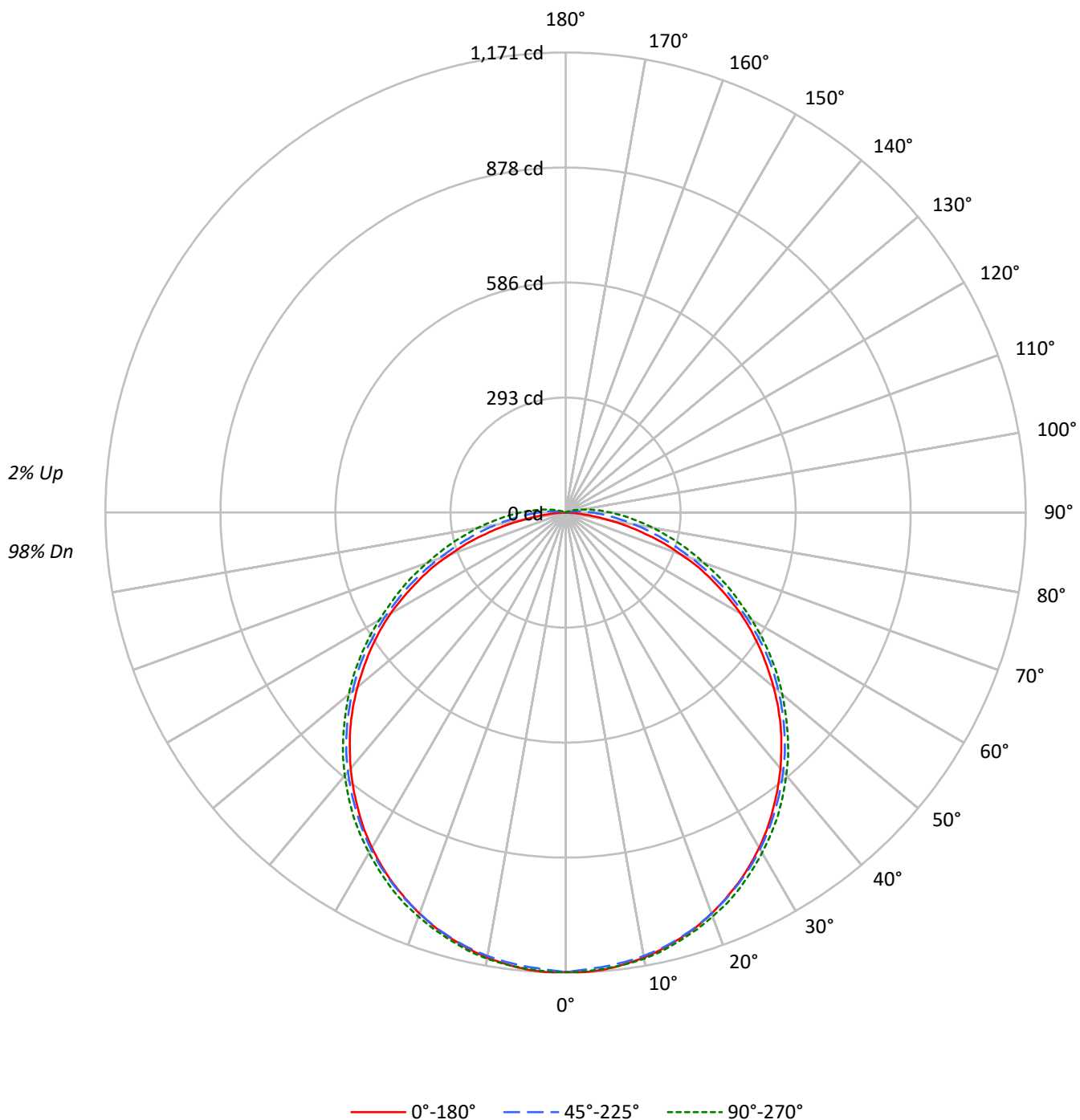
Lumens per Lamp: N/A
Luminaire Lumens: 3536.0 lumens
Efficiency: N/A
Efficacy: 82.2 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

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
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°	4721	4721	4721
5°	4711	4615	4620
10°	4680	4533	4527
15°	4639	4441	4416
20°	4596	4339	4308
25°	4544	4234	4198
30°	4484	4122	4074
35°	4409	3999	3950
40°	4330	3870	3807
45°	4245	3729	3651
50°	4135	3566	3484
55°	4016	3387	3300
60°	3873	3155	3084
65°	3643	2896	2871
70°	3310	2590	2623
75°	2840	2254	2398
80°	2136	1926	2192
85°	1142	1593	1995

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4245 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	110.7	3.1
10°-20°	317.5	9.0
20°-30°	481.7	13.6
30°-40°	582.4	16.5
40°-50°	607.7	17.2
50°-60°	555.6	15.7
60°-70°	433.2	12.2
70°-80°	270.9	7.7
80°-90°	123.1	3.5
90°-100°	41.3	1.2
100°-110°	10.4	0.3
110°-120°	1.6	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°	909.8	25.7
0°-40°	1492.2	42.2
0°-60°	2655.6	75.1
0°-90°	3482.8	98.5
90°-120°	53.2	1.5
90°-150°	53.2	1.5
90°-180°	53.0	1.5
0°-180°	3536.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1170	1170	1170	1170	1170	
5°	1167	1165	1160	1165	1165	111
15°	1123	1125	1122	1128	1128	317
25°	1040	1041	1042	1051	1053	479
35°	921	925	929	938	942	576
45°	775	782	788	796	800	597
55°	605	612	623	632	636	540
65°	416	423	437	455	462	411
75°	210	223	256	286	297	224
85°	36	67	116	153	166	46
90°	0	25	68	102	115	1
95°	0	7	35	64	74	0
105°	1	1	6	17	23	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

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1169.5	1169.5	1169.5	1169.5	1169.5
2.5°	1170.9	1169.2	1164.0	1169.2	1168.9
5°	1167.0	1164.8	1159.6	1165.1	1165.1
7.5°	1159.3	1158.5	1153.8	1160.1	1160.1
10°	1150.2	1149.9	1146.1	1153.0	1153.2
12.5°	1137.5	1138.6	1135.0	1141.7	1142.5
15°	1122.6	1124.6	1121.5	1127.9	1127.6
17.5°	1106.4	1107.5	1105.3	1112.4	1112.2
20°	1086.2	1087.6	1086.0	1093.4	1094.2
22.5°	1063.9	1065.8	1065.6	1073.3	1075.5
25°	1040.2	1041.0	1042.1	1050.9	1052.6
27.5°	1014.0	1015.4	1017.3	1025.3	1027.0
30°	985.3	987.5	989.7	998.0	1000.2
32.5°	955.0	957.2	960.0	970.7	971.8
35°	920.8	925.0	928.8	938.2	942.0
37.5°	886.6	891.9	895.5	905.4	908.4
40°	850.5	855.8	861.5	872.0	874.0
42.5°	812.7	818.8	825.7	835.1	838.4
45°	774.7	781.6	787.9	795.7	799.5
47.5°	733.6	740.5	748.2	757.1	759.5
50°	691.2	699.2	707.4	715.7	720.1
52.5°	647.6	657.3	666.6	675.5	679.6
55°	604.6	611.8	623.1	632.2	636.3
57.5°	559.9	566.0	576.2	591.1	593.3
60°	514.4	520.0	530.4	542.6	547.5
62.5°	464.3	471.7	482.7	498.2	502.6
65°	415.5	422.6	437.3	454.6	461.8
67.5°	368.3	370.8	389.6	407.8	419.3
70°	312.6	322.0	343.8	366.1	374.9
72.5°	264.7	274.0	298.0	324.2	335.2
75°	210.4	223.3	255.8	286.4	297.2
77.5°	162.7	177.0	217.2	248.1	260.5
80°	113.6	135.9	179.8	214.5	228.0
82.5°	71.4	99.0	145.8	182.2	194.1
85°	36.4	67.3	115.5	152.7	166.2
87.5°	9.6	43.6	89.9	125.4	139.2
90°	0.3	25.1	68.1	102.3	114.7
92.5°	0.3	14.1	50.7	81.3	94.0
95°	0.3	6.6	35.3	64.0	73.9
97.5°	0.3	2.8	24.3	48.2	58.2
100°	0.3	1.4	15.4	35.0	43.6
102.5°	0.6	0.8	9.6	25.1	32.0
105°	0.6	0.8	5.8	17.1	22.9
107.5°	0.6	0.8	3.3	11.6	15.7
110°	0.8	0.8	1.9	7.2	10.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.8	0.8	1.1	4.7	6.9
115°	0.8	0.8	1.1	3.0	4.4
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)