

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: P518117

Luminaire Tested: HVL8-4-LD4-3HI-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: P518117
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-3HI-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: 12954.0 lumens
Efficiency: N/A
Efficacy: 102.9 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

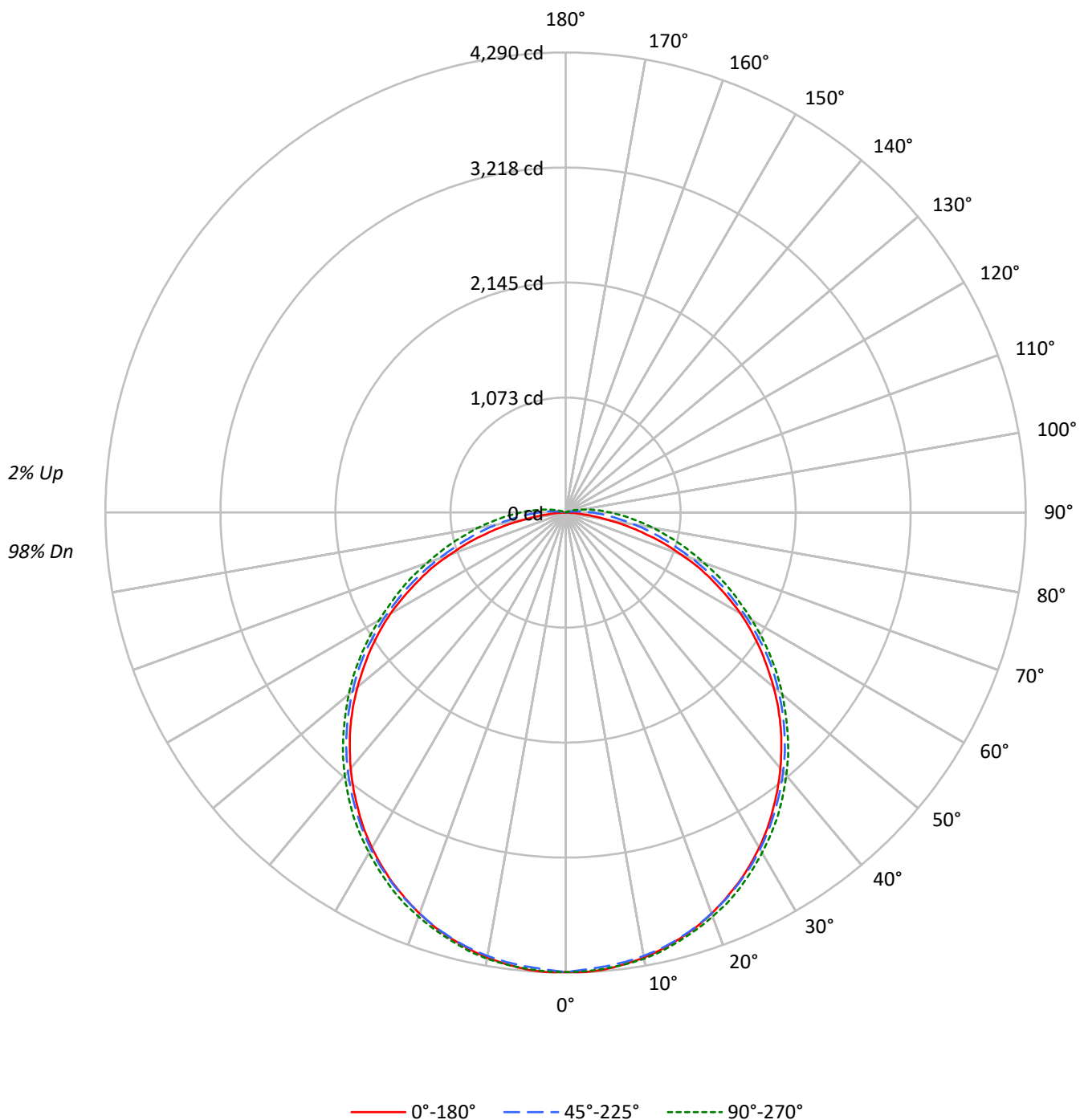
Input Watts (W): 125.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	17294	17294	17294
5°	17260	16907	16924
10°	17145	16605	16585
15°	16997	16270	16178
20°	16838	15896	15783
25°	16648	15511	15381
30°	16429	15101	14924
35°	16152	14651	14472
40°	15863	14177	13945
45°	15553	13660	13375
50°	15148	13063	12763
55°	14711	12408	12088
60°	14191	11558	11300
65°	13345	10607	10518
70°	12128	9487	9609
75°	10400	8259	8784
80°	7823	7054	8030
85°	4182	5837	7311

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 15553 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	405.4	3.1
10°-20°	1163.0	9.0
20°-30°	1764.6	13.6
30°-40°	2133.7	16.5
40°-50°	2226.4	17.2
50°-60°	2035.6	15.7
60°-70°	1586.8	12.2
70°-80°	992.6	7.7
80°-90°	450.8	3.5
90°-100°	151.1	1.2
100°-110°	37.9	0.3
110°-120°	6.0	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°	3333.0	25.7
0°-40°	5466.7	42.2
0°-60°	9728.7	75.1
0°-90°	12759.0	98.5
90°-120°	195.0	1.5
90°-150°	195.0	1.5
90°-180°	195.0	1.5
0°-180°	12954.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4284	4284	4284	4284	4284	
5°	4275	4267	4248	4268	4268	406
15°	4113	4120	4109	4132	4131	1161
25°	3811	3814	3818	3850	3856	1756
35°	3373	3388	3403	3437	3451	2111
45°	2838	2863	2887	2915	2929	2187
55°	2215	2241	2283	2316	2331	1979
65°	1522	1548	1602	1666	1692	1506
75°	771	818	937	1049	1089	821
85°	133	246	423	560	609	169
90°	1	92	250	375	420	5
95°	1	24	129	234	271	1
105°	2	3	21	63	84	2
115°	3	3	4	11	16	2
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-LD4-3HI-40-UNV-O-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4284.4	4284.4	4284.4	4284.4	4284.4
2.5°	4289.5	4283.4	4264.2	4283.4	4282.4
5°	4275.3	4267.2	4248.0	4268.2	4268.2
7.5°	4247.0	4244.0	4226.8	4250.1	4250.1
10°	4213.7	4212.7	4198.6	4223.8	4224.8
12.5°	4167.2	4171.3	4158.2	4182.4	4185.4
15°	4112.7	4119.8	4108.7	4131.9	4130.9
17.5°	4053.1	4057.2	4049.1	4075.3	4074.3
20°	3979.4	3984.4	3978.4	4005.6	4008.7
22.5°	3897.6	3904.6	3903.6	3931.9	3940.0
25°	3810.7	3813.7	3817.8	3850.1	3856.2
27.5°	3714.8	3719.8	3726.9	3756.2	3762.2
30°	3609.7	3617.8	3625.9	3656.2	3664.3
32.5°	3498.6	3506.7	3516.8	3556.2	3560.2
35°	3373.4	3388.5	3402.7	3437.0	3451.2
37.5°	3248.1	3267.3	3280.5	3316.8	3327.9
40°	3115.8	3135.0	3156.2	3194.6	3201.7
42.5°	2977.5	2999.7	3024.9	3059.3	3071.4
45°	2838.1	2863.3	2886.6	2914.8	2929.0
47.5°	2687.6	2712.8	2741.1	2773.4	2782.5
50°	2532.1	2561.3	2591.6	2621.9	2638.1
52.5°	2372.5	2407.8	2442.2	2474.5	2489.6
55°	2214.9	2241.2	2282.6	2315.9	2331.1
57.5°	2051.3	2073.5	2110.9	2165.4	2173.5
60°	1884.7	1904.9	1943.2	1987.7	2005.9
62.5°	1700.8	1728.1	1768.5	1825.1	1841.2
65°	1522.1	1548.3	1601.9	1665.5	1691.7
67.5°	1349.4	1358.4	1427.1	1493.8	1536.2
70°	1145.3	1179.7	1259.5	1341.3	1373.6
72.5°	969.6	1003.9	1091.8	1187.8	1228.2
75°	770.6	818.1	937.3	1049.4	1088.8
77.5°	595.9	648.4	795.9	909.0	954.4
80°	416.1	497.9	658.5	785.8	835.3
82.5°	261.6	362.6	534.3	667.6	711.0
85°	133.3	246.4	423.2	559.5	609.0
87.5°	35.3	159.6	329.3	459.5	510.0
90°	1.0	91.9	249.5	374.7	420.2
92.5°	1.0	51.5	185.8	297.9	344.4
95°	1.0	24.2	129.3	234.3	270.7
97.5°	1.0	10.1	88.9	176.7	213.1
100°	1.0	5.0	56.6	128.3	159.6
102.5°	2.0	3.0	35.3	91.9	117.2
105°	2.0	3.0	21.2	62.6	83.8
107.5°	2.0	3.0	12.1	42.4	57.6
110°	3.0	3.0	7.1	26.3	38.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	3.0	3.0	4.0	17.2	25.2
115°	3.0	3.0	4.0	11.1	16.2
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)