

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: P517941

Luminaire Tested: HVL8-2-LD4-2LO-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: P517941
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-2LO-40-UNV-O-EDD-90
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2082.0 lumens
Efficiency: N/A
Efficacy: 90.1 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 2' x H: 0.17')
CIE Type: Direct

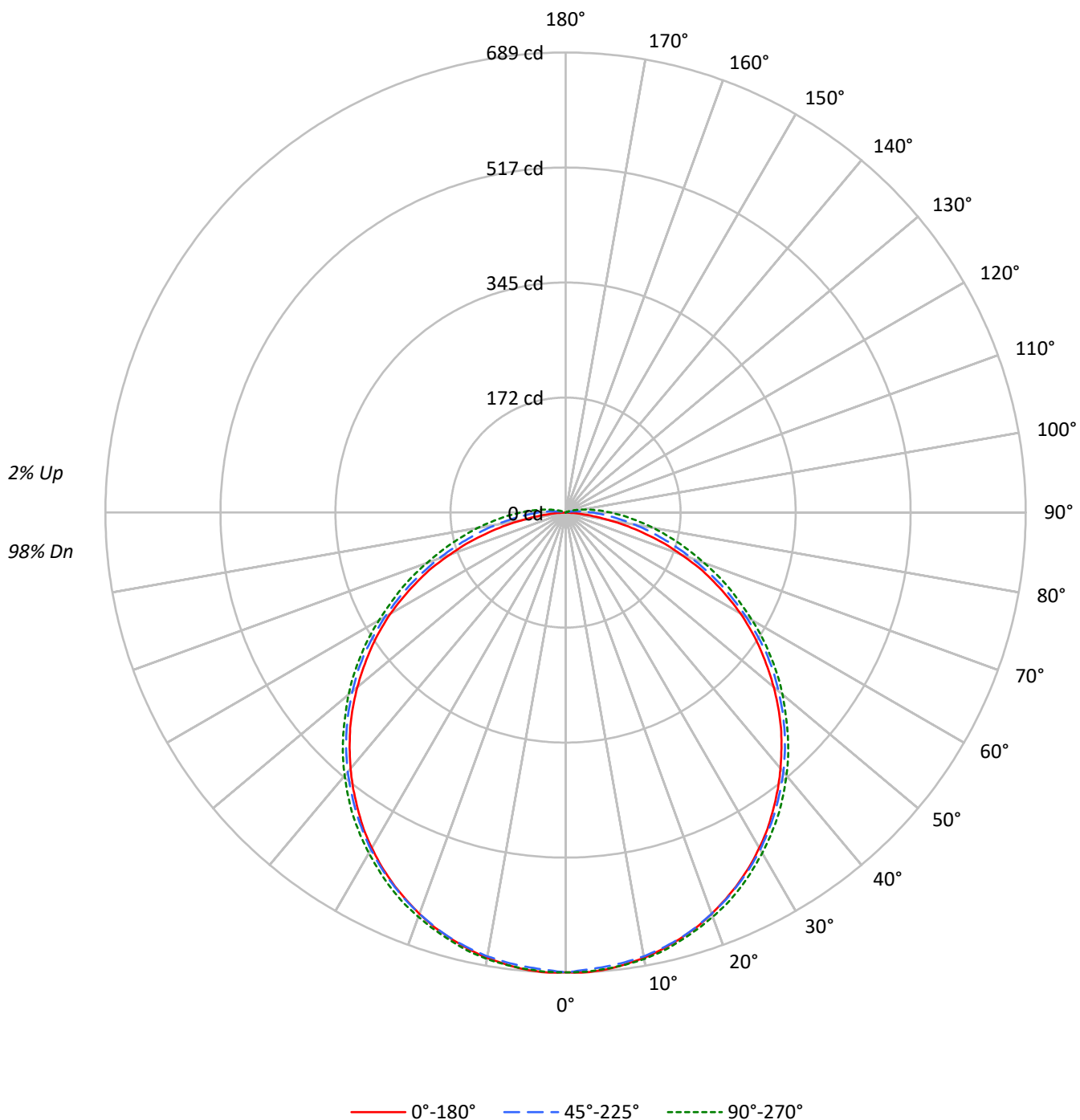
Input Watts (W): 23.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	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°	5559	5559	5559
5°	5528	5421	5440
10°	5471	5311	5331
15°	5404	5191	5200
20°	5333	5059	5073
25°	5252	4924	4944
30°	5160	4782	4797
35°	5049	4626	4652
40°	4933	4463	4483
45°	4807	4286	4300
50°	4650	4084	4103
55°	4478	3863	3886
60°	4274	3580	3632
65°	3964	3267	3381
70°	3536	2899	3089
75°	2948	2499	2824
80°	2112	2105	2580
85°	1015	1705	2350

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4807 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	65.2	3.1
10°-20°	186.9	9.0
20°-30°	283.6	13.6
30°-40°	342.9	16.5
40°-50°	357.8	17.2
50°-60°	327.2	15.7
60°-70°	255.0	12.2
70°-80°	159.5	7.7
80°-90°	72.5	3.5
90°-100°	24.3	1.2
100°-110°	6.1	0.3
110°-120°	1.0	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°	535.7	25.7
0°-40°	878.6	42.2
0°-60°	1563.6	75.1
0°-90°	2050.7	98.5
90°-120°	31.4	1.5
90°-150°	31.4	1.5
90°-180°	31.0	1.5
0°-180°	2082.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	689	689	689	689	689	
5°	687	686	683	686	686	65
15°	661	662	660	664	664	187
25°	612	613	614	619	620	282
35°	542	545	547	552	555	339
45°	456	460	464	468	471	351
55°	356	360	367	372	375	318
65°	245	249	258	268	272	242
75°	124	132	151	169	175	132
85°	21	40	68	90	98	27
90°	0	15	40	60	68	1
95°	0	4	21	38	44	0
105°	0	0	3	10	14	0
115°	0	0	1	2	3	0
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: HVL8-2-LD4-2LO-40-UNV-O-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	688.6	688.6	688.6	688.6	688.6
2.5°	689.4	688.4	685.4	688.4	688.3
5°	687.1	685.8	682.8	686.0	686.0
7.5°	682.6	682.1	679.3	683.1	683.1
10°	677.2	677.1	674.8	678.9	679.0
12.5°	669.8	670.4	668.3	672.2	672.7
15°	661.0	662.1	660.4	664.1	663.9
17.5°	651.4	652.1	650.8	655.0	654.8
20°	639.6	640.4	639.4	643.8	644.3
22.5°	626.4	627.6	627.4	631.9	633.2
25°	612.5	613.0	613.6	618.8	619.8
27.5°	597.0	597.9	599.0	603.7	604.7
30°	580.2	581.5	582.8	587.6	588.9
32.5°	562.3	563.6	565.2	571.6	572.2
35°	542.2	544.6	546.9	552.4	554.7
37.5°	522.1	525.1	527.2	533.1	534.9
40°	500.8	503.9	507.3	513.4	514.6
42.5°	478.5	482.1	486.2	491.7	493.6
45°	456.1	460.2	463.9	468.5	470.8
47.5°	432.0	436.0	440.6	445.8	447.2
50°	407.0	411.7	416.5	421.4	424.0
52.5°	381.3	387.0	392.5	397.7	400.1
55°	356.0	360.2	366.9	372.2	374.7
57.5°	329.7	333.3	339.3	348.0	349.3
60°	302.9	306.2	312.3	319.5	322.4
62.5°	273.4	277.7	284.2	293.3	295.9
65°	244.6	248.9	257.5	267.7	271.9
67.5°	216.9	218.3	229.4	240.1	246.9
70°	184.1	189.6	202.4	215.6	220.8
72.5°	155.8	161.4	175.5	190.9	197.4
75°	123.9	131.5	150.6	168.7	175.0
77.5°	95.8	104.2	127.9	146.1	153.4
80°	66.9	80.0	105.8	126.3	134.2
82.5°	42.0	58.3	85.9	107.3	114.3
85°	21.4	39.6	68.0	89.9	97.9
87.5°	5.7	25.6	52.9	73.9	82.0
90°	0.2	14.8	40.1	60.2	67.5
92.5°	0.2	8.3	29.9	47.9	55.4
95°	0.2	3.9	20.8	37.7	43.5
97.5°	0.2	1.6	14.3	28.4	34.3
100°	0.2	0.8	9.1	20.6	25.6
102.5°	0.3	0.5	5.7	14.8	18.8
105°	0.3	0.5	3.4	10.1	13.5
107.5°	0.3	0.5	1.9	6.8	9.3
110°	0.5	0.5	1.1	4.2	6.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.5	0.5	0.6	2.8	4.1
115°	0.5	0.5	0.6	1.8	2.6
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)