

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: P518017

Luminaire Tested: HVL8-4-LD4-1HI-35-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: P518017
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-1HI-35-UNV-O-EDD-90
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4283.0 lumens
Efficiency: N/A
Efficacy: 99.6 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

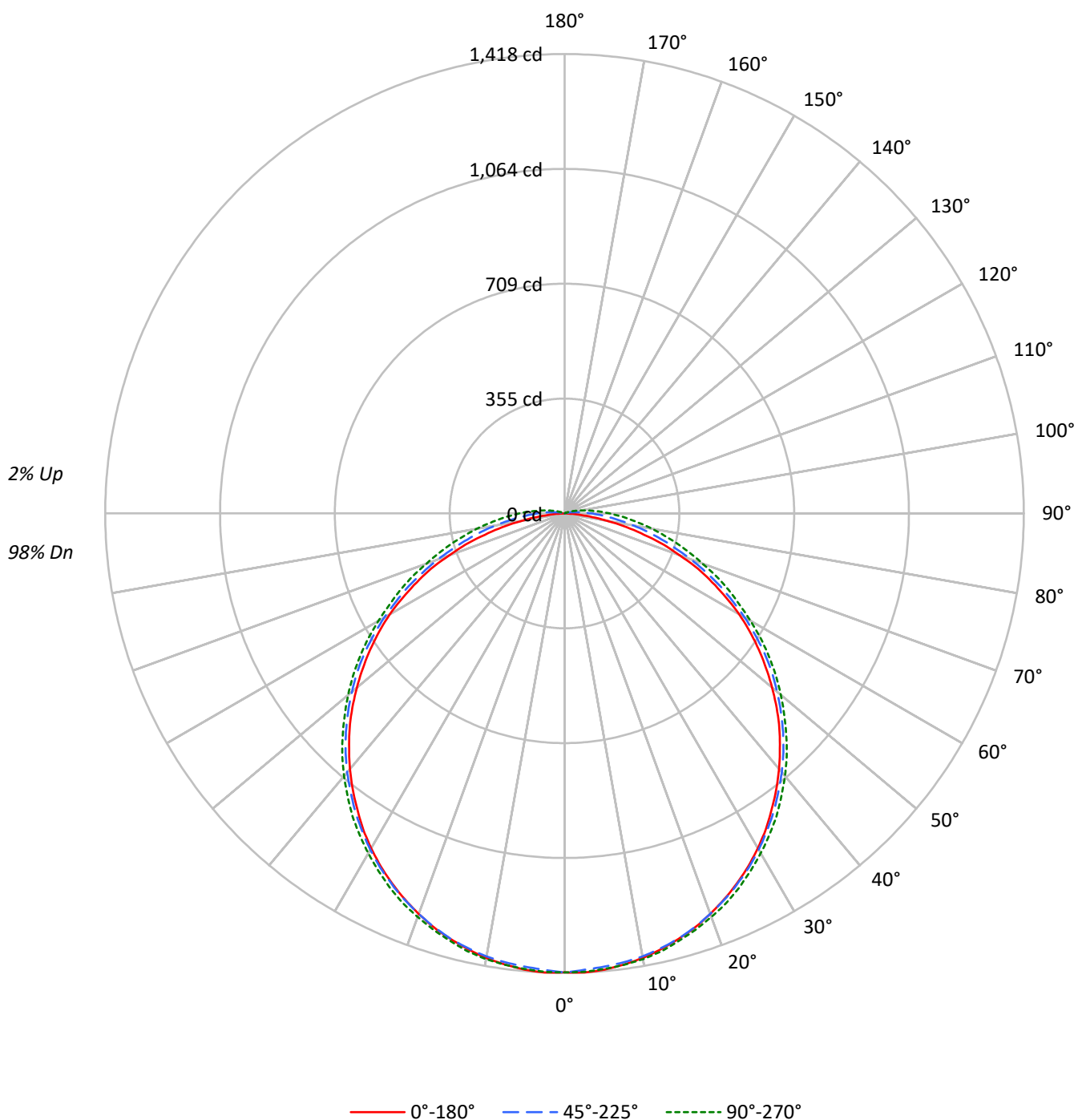
Input Watts (W): 43
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	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°	5718	5718	5718
5°	5707	5590	5596
10°	5669	5490	5484
15°	5620	5380	5349
20°	5567	5256	5218
25°	5504	5129	5086
30°	5432	4993	4934
35°	5340	4844	4785
40°	5245	4688	4611
45°	5142	4516	4422
50°	5009	4319	4220
55°	4864	4103	3997
60°	4692	3821	3736
65°	4412	3507	3477
70°	4010	3137	3177
75°	3439	2731	2904
80°	2587	2332	2655
85°	1383	1930	2418

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 5142 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	134.0	3.1
10°-20°	384.5	9.0
20°-30°	583.4	13.6
30°-40°	705.5	16.5
40°-50°	736.1	17.2
50°-60°	673.0	15.7
60°-70°	524.7	12.2
70°-80°	328.2	7.7
80°-90°	149.1	3.5
90°-100°	49.9	1.2
100°-110°	12.5	0.3
110°-120°	2.0	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°	1102.0	25.7
0°-40°	1807.5	42.2
0°-60°	3216.6	75.1
0°-90°	4218.5	98.5
90°-120°	64.5	1.5
90°-150°	64.5	1.5
90°-180°	64.0	1.5
0°-180°	4283.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1417	1417	1417	1417	1417	
5°	1414	1411	1404	1411	1411	134
15°	1360	1362	1358	1366	1366	384
25°	1260	1261	1262	1273	1275	581
35°	1115	1120	1125	1136	1141	698
45°	938	947	954	964	968	723
55°	732	741	755	766	771	654
65°	503	512	530	551	559	498
75°	255	270	310	347	360	272
85°	44	82	140	185	201	56
90°	0	30	82	124	139	2
95°	0	8	43	78	90	0
105°	1	1	7	21	28	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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CATALOG NUMBER: HVL8-4-LD4-1HI-35-UNV-O-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1416.6	1416.6	1416.6	1416.6	1416.6
2.5°	1418.2	1416.2	1409.9	1416.2	1415.9
5°	1413.6	1410.9	1404.5	1411.2	1411.2
7.5°	1404.2	1403.2	1397.5	1405.2	1405.2
10°	1393.2	1392.8	1388.2	1396.5	1396.9
12.5°	1377.8	1379.2	1374.8	1382.8	1383.8
15°	1359.8	1362.1	1358.5	1366.1	1365.8
17.5°	1340.1	1341.4	1338.8	1347.4	1347.1
20°	1315.7	1317.4	1315.4	1324.4	1325.4
22.5°	1288.7	1291.0	1290.7	1300.0	1302.7
25°	1259.9	1260.9	1262.3	1273.0	1275.0
27.5°	1228.2	1229.9	1232.2	1241.9	1243.9
30°	1193.5	1196.2	1198.8	1208.8	1211.5
32.5°	1156.8	1159.4	1162.8	1175.8	1177.1
35°	1115.3	1120.4	1125.0	1136.4	1141.1
37.5°	1073.9	1080.3	1084.6	1096.6	1100.3
40°	1030.2	1036.5	1043.6	1056.2	1058.6
42.5°	984.4	991.8	1000.1	1011.5	1015.5
45°	938.4	946.7	954.4	963.7	968.4
47.5°	888.6	897.0	906.3	917.0	920.0
50°	837.2	846.9	856.9	866.9	872.2
52.5°	784.4	796.1	807.5	818.1	823.2
55°	732.3	741.0	754.7	765.7	770.7
57.5°	678.2	685.6	697.9	716.0	718.6
60°	623.1	629.8	642.5	657.2	663.2
62.5°	562.3	571.4	584.7	603.4	608.8
65°	503.2	511.9	529.6	550.7	559.3
67.5°	446.1	449.1	471.9	493.9	507.9
70°	378.7	390.0	416.4	443.5	454.2
72.5°	320.6	331.9	361.0	392.7	406.1
75°	254.8	270.5	309.9	347.0	360.0
77.5°	197.0	214.4	263.1	300.5	315.6
80°	137.6	164.6	217.7	259.8	276.2
82.5°	86.5	119.9	176.7	220.7	235.1
85°	44.1	81.5	139.9	185.0	201.4
87.5°	11.7	52.8	108.9	151.9	168.6
90°	0.3	30.4	82.5	123.9	138.9
92.5°	0.3	17.0	61.4	98.5	113.9
95°	0.3	8.0	42.7	77.5	89.5
97.5°	0.3	3.3	29.4	58.4	70.5
100°	0.3	1.7	18.7	42.4	52.8
102.5°	0.7	1.0	11.7	30.4	38.7
105°	0.7	1.0	7.0	20.7	27.7
107.5°	0.7	1.0	4.0	14.0	19.0
110°	1.0	1.0	2.3	8.7	12.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.0	1.0	1.3	5.7	8.3
115°	1.0	1.0	1.3	3.7	5.3
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)