

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: P518002

Luminaire Tested: HVL8-2-LD4-3STD-35-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: P518002
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-3STD-35-UNV-O-EDD
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4170.0 lumens
Efficiency: N/A
Efficacy: 87.2 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

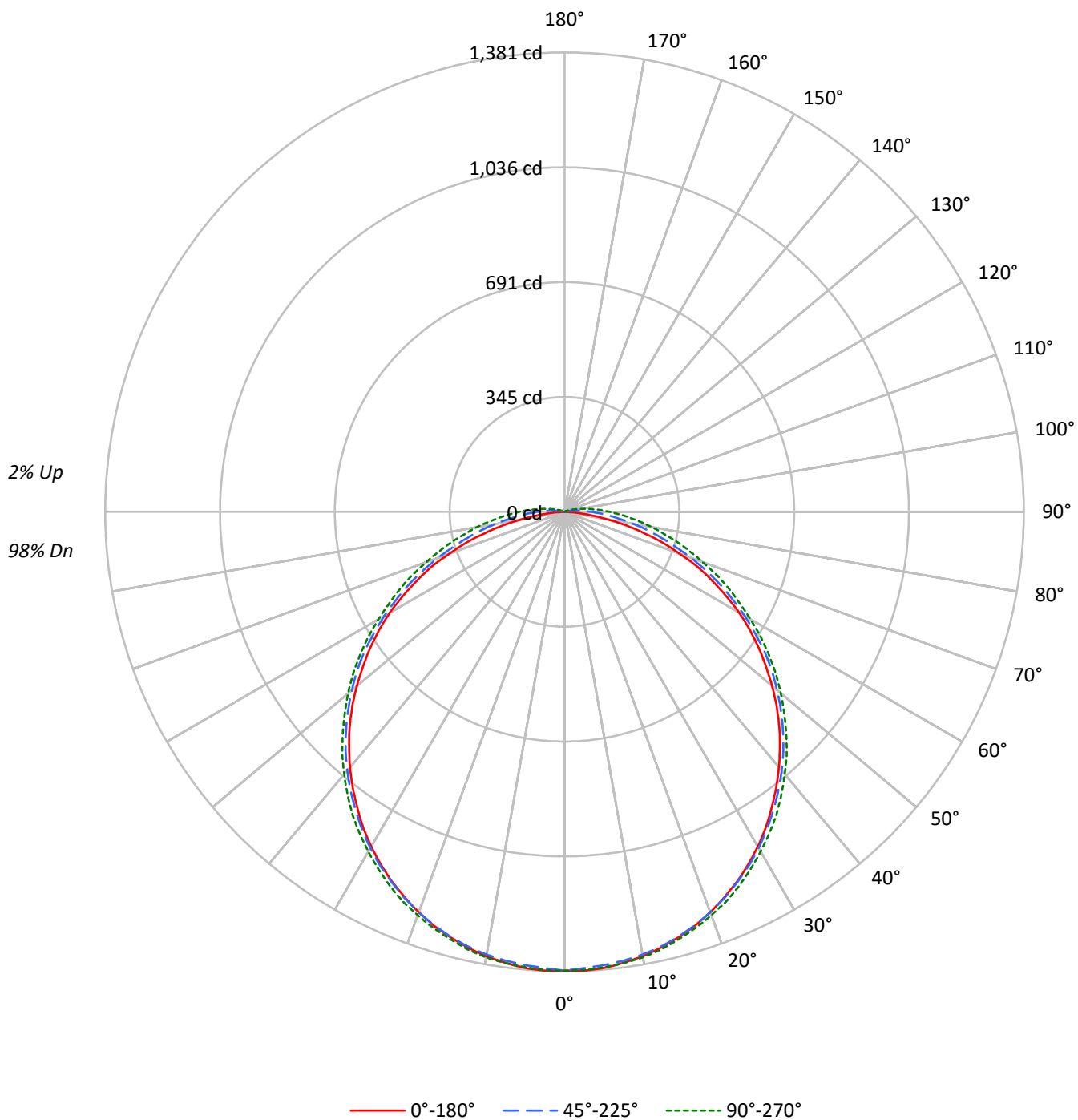
Input Watts (W): 47.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	11134	11134	11134
5°	11072	10858	10896
10°	10958	10637	10678
15°	10823	10397	10416
20°	10681	10133	10161
25°	10518	9863	9902
30°	10335	9577	9609
35°	10112	9265	9318
40°	9879	8939	8977
45°	9628	8585	8612
50°	9312	8180	8217
55°	8968	7737	7782
60°	8560	7171	7275
65°	7941	6542	6772
70°	7081	5807	6187
75°	5903	5006	5655
80°	4230	4217	5170
85°	2035	3415	4708

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 9628 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	130.5	3.1
10°-20°	374.4	9.0
20°-30°	568.0	13.6
30°-40°	686.9	16.5
40°-50°	716.7	17.2
50°-60°	655.3	15.7
60°-70°	510.8	12.2
70°-80°	319.5	7.7
80°-90°	145.1	3.5
90°-100°	48.6	1.2
100°-110°	12.2	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°	1072.9	25.7
0°-40°	1759.8	42.2
0°-60°	3131.7	75.1
0°-90°	4107.2	98.5
90°-120°	62.8	1.5
90°-150°	62.8	1.5
90°-180°	63.0	1.5
0°-180°	4170.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1379	1379	1379	1379	1379	
5°	1376	1374	1368	1374	1374	131
15°	1324	1326	1323	1330	1330	374
25°	1227	1228	1229	1239	1241	565
35°	1086	1091	1095	1106	1111	680
45°	914	922	929	938	943	704
55°	713	722	735	746	750	637
65°	490	498	516	536	545	485
75°	248	263	302	338	350	264
85°	43	79	136	180	196	54
90°	0	30	80	121	135	2
95°	0	8	42	75	87	0
105°	1	1	7	20	27	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: HVL8-2-LD4-3STD-35-UNV-O-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1379.2	1379.2	1379.2	1379.2	1379.2
2.5°	1380.8	1378.9	1372.7	1378.9	1378.5
5°	1376.3	1373.7	1367.5	1374.0	1374.0
7.5°	1367.2	1366.2	1360.7	1368.1	1368.1
10°	1356.4	1356.1	1351.5	1359.7	1360.0
12.5°	1341.5	1342.8	1338.5	1346.3	1347.3
15°	1323.9	1326.2	1322.6	1330.1	1329.8
17.5°	1304.7	1306.0	1303.4	1311.9	1311.6
20°	1281.0	1282.6	1280.7	1289.4	1290.4
22.5°	1254.7	1256.9	1256.6	1265.7	1268.3
25°	1226.7	1227.7	1229.0	1239.4	1241.3
27.5°	1195.8	1197.4	1199.7	1209.1	1211.1
30°	1162.0	1164.6	1167.2	1177.0	1179.6
32.5°	1126.2	1128.8	1132.1	1144.8	1146.1
35°	1085.9	1090.8	1095.3	1106.4	1111.0
37.5°	1045.6	1051.8	1056.0	1067.7	1071.3
40°	1003.0	1009.2	1016.0	1028.4	1030.6
42.5°	958.5	965.6	973.8	984.8	988.7
45°	913.6	921.7	929.2	938.3	942.9
47.5°	865.2	873.3	882.4	892.8	895.7
50°	815.1	824.5	834.3	844.0	849.2
52.5°	763.7	775.1	786.2	796.6	801.4
55°	713.0	721.5	734.8	745.5	750.4
57.5°	660.3	667.5	679.5	697.1	699.7
60°	606.7	613.2	625.5	639.8	645.7
62.5°	547.5	556.3	569.3	587.5	592.7
65°	490.0	498.4	515.6	536.1	544.6
67.5°	434.4	437.3	459.4	480.9	494.5
70°	368.7	379.7	405.4	431.8	442.2
72.5°	312.1	323.2	351.5	382.3	395.4
75°	248.1	263.4	301.7	337.8	350.5
77.5°	191.8	208.7	256.2	292.6	307.2
80°	134.0	160.3	212.0	252.9	268.9
82.5°	84.2	116.7	172.0	214.9	228.9
85°	42.9	79.3	136.2	180.1	196.1
87.5°	11.4	51.4	106.0	147.9	164.2
90°	0.3	29.6	80.3	120.6	135.3
92.5°	0.3	16.6	59.8	95.9	110.9
95°	0.3	7.8	41.6	75.4	87.1
97.5°	0.3	3.3	28.6	56.9	68.6
100°	0.3	1.6	18.2	41.3	51.4
102.5°	0.7	1.0	11.4	29.6	37.7
105°	0.7	1.0	6.8	20.2	27.0
107.5°	0.7	1.0	3.9	13.7	18.5
110°	1.0	1.0	2.3	8.5	12.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.0	1.0	1.3	5.5	8.1
115°	1.0	1.0	1.3	3.6	5.2
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)