

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P311438

Luminaire Tested: **24FCZ2-45HE-UNV-L82765-S-CA08-W2A-U-4000K**

Issue Date: 3/3/2020

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.

Test Information

Test Method: LM-79-08
Report Number: P311438
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-1)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 24FCZ2-45HE-UNV-L82765-S-CA08-W2A-U-4000K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.08" ACRYLIC SHEET
Light Source: (336) 4000K TUNABLE CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER
Luminaire Equipment:

<u>Sample No.</u>	<u>Condition</u>	<u>Description</u>
AS-5443-1	Good	WHITE TWIN R-EVOLVE FLOOD
AS-5443-2	Good	REFLECTOR
AS-5443-3	Good	DRIVER
AS-5443-4	Good	UPPER MODULE
AS-5443-5	Good	LENS
AS-5443-6	Good	DRIVER 2
AS-5443-7	Good	TRIM RING

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4301.0 lumens
Efficiency: N/A
Efficacy: 125.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.35
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

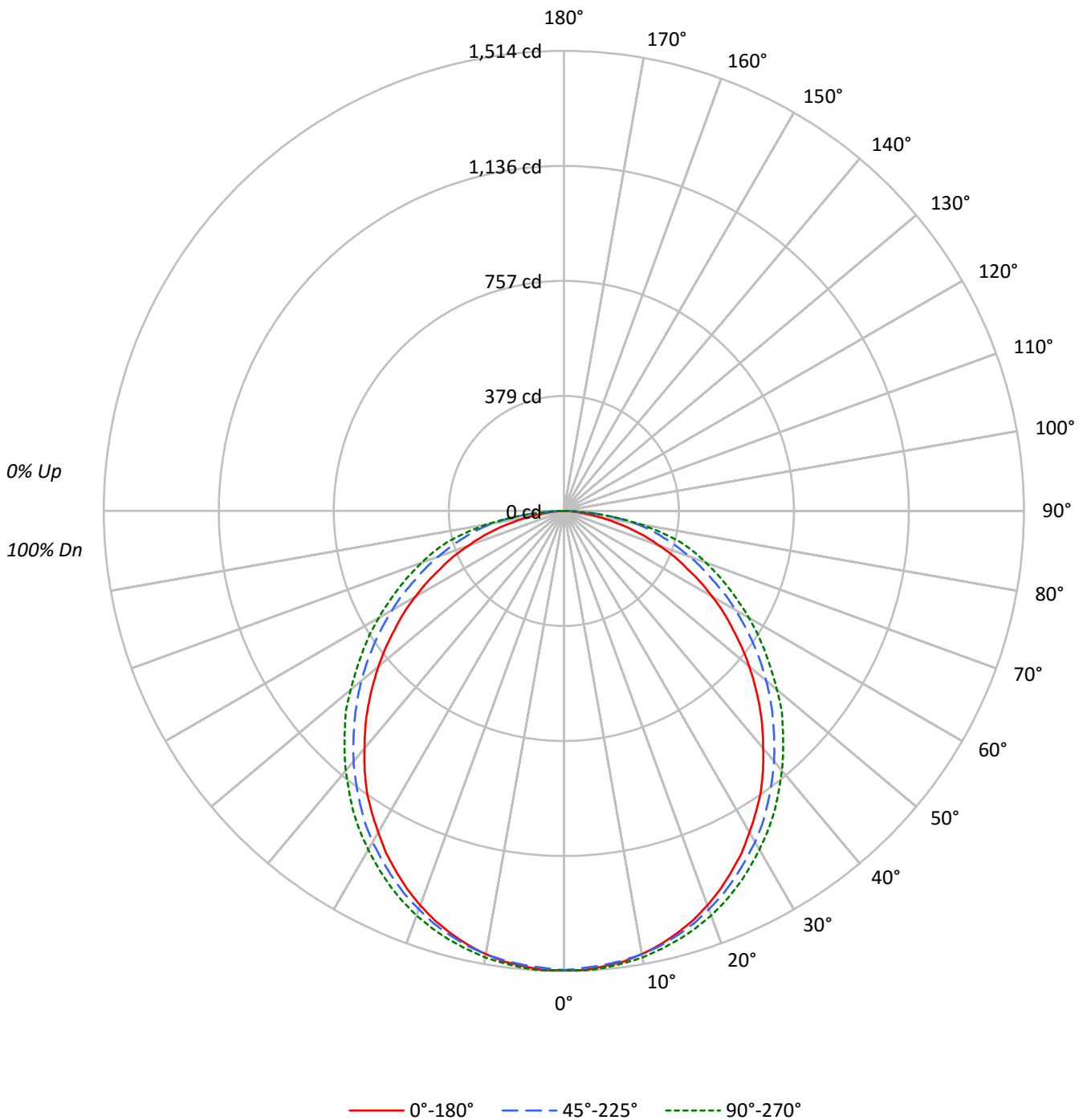
Input Watts (W): 34.2
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	108	103	99	95	106	101	97	93	97	93	90	93	90	88	89	87	85	83
2	98	90	83	77	96	88	81	76	84	79	74	81	76	72	78	74	71	69
3	89	79	70	64	87	77	69	63	74	67	62	71	66	61	69	64	60	58
4	82	70	61	54	80	68	60	54	66	59	53	63	57	52	61	56	51	49
5	75	62	53	46	73	61	53	46	59	51	46	57	50	45	55	49	45	42
6	70	56	47	40	68	55	47	40	53	46	40	52	45	40	50	44	39	37
7	64	51	42	36	63	50	42	36	48	41	35	47	40	35	46	39	35	33
8	60	46	38	32	58	46	37	32	44	37	32	43	36	31	42	36	31	29
9	56	43	34	29	55	42	34	29	41	34	28	40	33	28	39	33	28	26
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2033	2033	2033
5°	2031	2026	2039
10°	2023	2023	2038
15°	2004	2013	2034
20°	1978	1997	2028
25°	1941	1977	2016
30°	1897	1955	1999
35°	1856	1923	1984
40°	1792	1891	1961
45°	1734	1854	1939
50°	1667	1819	1916
55°	1593	1785	1897
60°	1518	1757	1893
65°	1422	1727	1905
70°	1317	1736	1956
75°	1179	1769	2067
80°	953	1874	2022
85°	716	1646	1602



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	143.0	3.3
10°-20°	408.7	9.5
20°-30°	614.4	14.3
30°-40°	731.9	17.0
40°-50°	749.0	17.4
50°-60°	674.3	15.7
60°-70°	529.6	12.3
70°-80°	343.7	8.0
80°-90°	106.3	2.5
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	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°	1166.2	27.1
0°-40°	1898.0	44.1
0°-60°	3321.4	77.2
0°-90°	4301.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4301.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1511	1511	1511	1511	1511	
5°	1504	1507	1500	1508	1510	143
15°	1439	1443	1445	1458	1460	406
25°	1307	1318	1332	1354	1358	602
35°	1130	1144	1171	1200	1208	705
45°	911	933	974	1011	1019	703
55°	679	709	761	801	809	609
65°	447	481	542	587	598	445
75°	227	270	340	387	398	240
85°	46	86	107	104	104	56
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1511.0	1511.0	1511.0	1511.0	1511.0
2.5°	1512.3	1512.3	1505.5	1512.3	1513.7
5°	1504.1	1506.9	1500.0	1508.2	1509.6
7.5°	1495.9	1495.9	1491.8	1500.0	1501.4
10°	1480.9	1482.3	1480.9	1490.5	1491.8
12.5°	1461.8	1464.5	1465.9	1475.4	1476.8
15°	1438.6	1442.7	1445.4	1457.7	1460.4
17.5°	1412.6	1416.7	1423.5	1437.2	1439.9
20°	1381.2	1386.6	1394.8	1412.6	1416.7
22.5°	1347.0	1352.5	1366.2	1382.6	1389.4
25°	1307.4	1318.3	1332.0	1353.9	1358.0
27.5°	1267.8	1277.4	1295.1	1318.3	1323.8
30°	1221.3	1236.4	1258.2	1281.5	1286.9
32.5°	1176.3	1191.3	1217.2	1241.8	1248.7
35°	1129.8	1143.5	1170.8	1199.5	1207.7
37.5°	1076.5	1094.3	1124.3	1153.0	1161.2
40°	1020.5	1042.4	1076.5	1106.6	1116.2
42.5°	967.2	990.5	1024.6	1057.4	1068.3
45°	911.2	933.1	974.1	1011.0	1019.2
47.5°	853.8	878.4	922.2	959.0	972.7
50°	796.5	822.4	868.9	907.1	915.3
52.5°	739.1	766.4	815.6	856.6	860.7
55°	679.0	709.0	760.9	800.6	808.8
57.5°	624.3	650.3	706.3	747.3	756.9
60°	564.2	592.9	653.0	691.3	703.6
62.5°	506.8	536.9	599.7	638.0	648.9
65°	446.7	480.9	542.4	587.4	598.4
67.5°	394.8	427.6	493.2	536.9	547.8
70°	334.7	371.6	441.3	486.4	497.3
72.5°	282.8	321.0	390.7	434.4	450.8
75°	226.8	270.5	340.2	386.6	397.6
77.5°	172.1	222.7	293.7	329.2	329.2
80°	123.0	176.2	241.8	258.2	260.9
82.5°	80.6	132.5	179.0	177.6	177.6
85°	46.4	86.1	106.6	103.8	103.8
87.5°	17.8	35.5	38.3	38.3	36.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)