

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: P311457

Luminaire Tested: **24FCZ2-45HE-UNV-L82765-S-CP125-W2A-U-4500K**

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: P311457
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-CP125-W2A-U-4500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.125" POLYCARB SHEET
Light Source: (336) 4500K 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

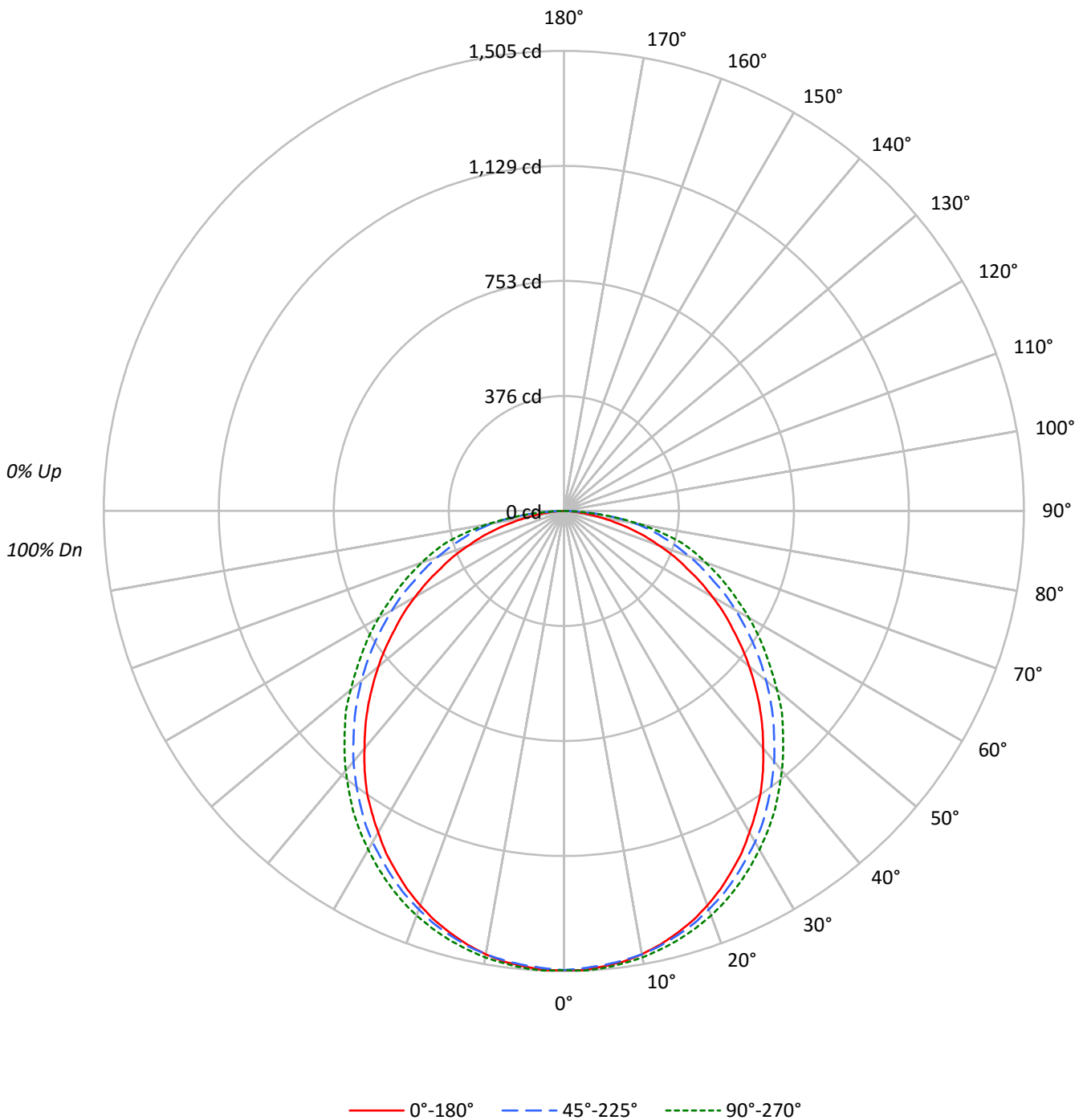
Lumens per Lamp: N/A
Luminaire Lumens: 4276.0 lumens
Efficiency: N/A
Efficacy: 124.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.35
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 34.4
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°	2021	2021	2021
5°	2020	2014	2027
10°	2012	2012	2026
15°	1992	2002	2022
20°	1966	1986	2017
25°	1930	1966	2004
30°	1886	1943	1988
35°	1845	1912	1972
40°	1782	1880	1949
45°	1724	1843	1928
50°	1657	1808	1905
55°	1583	1775	1886
60°	1509	1747	1882
65°	1414	1717	1894
70°	1309	1726	1945
75°	1172	1758	2054
80°	947	1863	2010
85°	713	1635	1593



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	142.2	3.3
10°-20°	406.4	9.5
20°-30°	610.8	14.3
30°-40°	727.6	17.0
40°-50°	744.7	17.4
50°-60°	670.4	15.7
60°-70°	526.5	12.3
70°-80°	341.7	8.0
80°-90°	105.7	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°	1159.4	27.1
0°-40°	1887.0	44.1
0°-60°	3302.1	77.2
0°-90°	4276.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4276.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1502	1502	1502	1502	1502	
5°	1495	1498	1491	1500	1501	142
15°	1430	1434	1437	1449	1452	403
25°	1300	1311	1324	1346	1350	599
35°	1123	1137	1164	1192	1201	701
45°	906	928	968	1005	1013	698
55°	675	705	756	796	804	605
65°	444	478	539	584	595	442
75°	226	269	338	384	395	239
85°	46	86	106	103	103	56
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1502.2	1502.2	1502.2	1502.2	1502.2
2.5°	1503.5	1503.5	1496.8	1503.5	1504.9
5°	1495.4	1498.1	1491.3	1499.5	1500.8
7.5°	1487.2	1487.2	1483.2	1491.3	1492.7
10°	1472.3	1473.7	1472.3	1481.8	1483.2
12.5°	1453.3	1456.0	1457.4	1466.9	1468.2
15°	1430.2	1434.3	1437.0	1449.2	1451.9
17.5°	1404.4	1408.5	1415.3	1428.8	1431.6
20°	1373.2	1378.6	1386.7	1404.4	1408.5
22.5°	1339.2	1344.6	1358.2	1374.5	1381.3
25°	1299.8	1310.7	1324.3	1346.0	1350.1
27.5°	1260.4	1269.9	1287.6	1310.7	1316.1
30°	1214.2	1229.2	1250.9	1274.0	1279.4
32.5°	1169.4	1184.4	1210.2	1234.6	1241.4
35°	1123.2	1136.8	1164.0	1192.5	1200.7
37.5°	1070.3	1087.9	1117.8	1146.3	1154.5
40°	1014.6	1036.3	1070.3	1100.2	1109.7
42.5°	961.6	984.7	1018.7	1051.3	1062.1
45°	905.9	927.7	968.4	1005.1	1013.2
47.5°	848.9	873.3	916.8	953.5	967.0
50°	791.8	817.6	863.8	901.9	910.0
52.5°	734.8	762.0	810.9	851.6	855.7
55°	675.0	704.9	756.5	795.9	804.1
57.5°	620.7	646.5	702.2	742.9	752.5
60°	560.9	589.5	649.2	687.3	699.5
62.5°	503.9	533.8	596.3	634.3	645.2
65°	444.1	478.1	539.2	584.0	594.9
67.5°	392.5	425.1	490.3	533.8	544.6
70°	332.8	369.4	438.7	483.5	494.4
72.5°	281.2	319.2	388.4	431.9	448.2
75°	225.5	268.9	338.2	384.4	395.2
77.5°	171.1	221.4	292.0	327.3	327.3
80°	122.2	175.2	240.4	256.7	259.4
82.5°	80.1	131.7	177.9	176.6	176.6
85°	46.2	85.6	105.9	103.2	103.2
87.5°	17.7	35.3	38.0	38.0	36.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)