

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: P311466

Luminaire Tested: **24FCZ2-45HE-UNV-L82765-S-CP187-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: P311466
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-CP187-W2A-U-4500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" 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

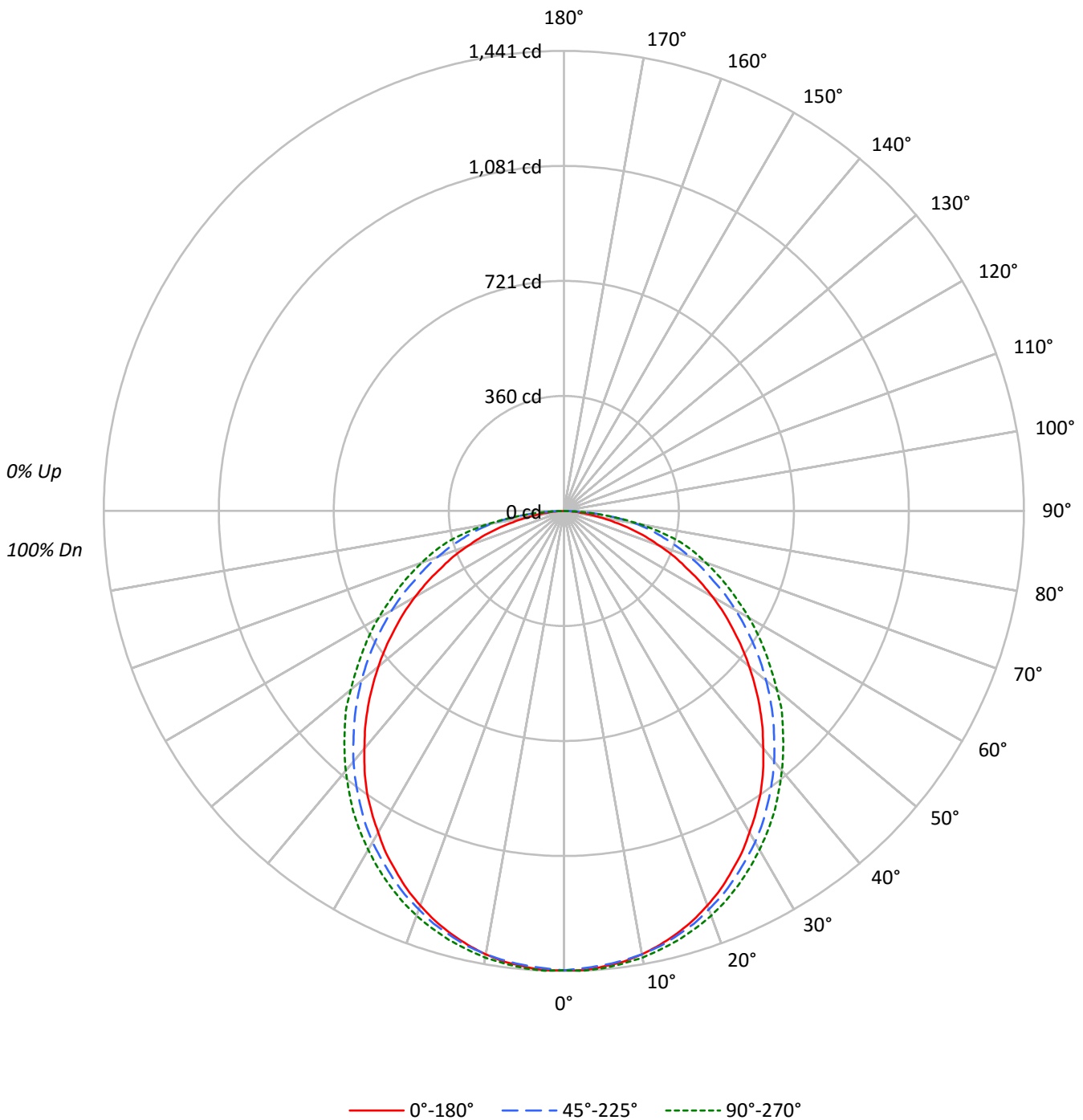
Lumens per Lamp: N/A
Luminaire Lumens: 4095.0 lumens
Efficiency: N/A
Efficacy: 119.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.35
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

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°	1936	1936	1936
5°	1934	1929	1941
10°	1926	1926	1941
15°	1908	1917	1937
20°	1883	1901	1931
25°	1848	1883	1919
30°	1807	1861	1904
35°	1767	1831	1889
40°	1707	1800	1867
45°	1651	1765	1846
50°	1587	1732	1824
55°	1517	1700	1806
60°	1446	1673	1803
65°	1354	1644	1814
70°	1254	1653	1863
75°	1122	1684	1968
80°	907	1784	1925
85°	682	1567	1527



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	136.2	3.3
10°-20°	389.2	9.5
20°-30°	585.0	14.3
30°-40°	696.8	17.0
40°-50°	713.2	17.4
50°-60°	642.0	15.7
60°-70°	504.2	12.3
70°-80°	327.2	8.0
80°-90°	101.2	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°	1110.3	27.1
0°-40°	1807.1	44.1
0°-60°	3162.3	77.2
0°-90°	4095.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4095.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1439	1439	1439	1439	1439	
5°	1432	1435	1428	1436	1437	136
15°	1370	1374	1376	1388	1390	386
25°	1245	1255	1268	1289	1293	573
35°	1076	1089	1115	1142	1150	671
45°	868	888	927	962	970	669
55°	646	675	724	762	770	580
65°	425	458	516	559	570	423
75°	216	258	324	368	378	228
85°	44	82	102	99	99	53
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1438.6	1438.6	1438.6	1438.6	1438.6
2.5°	1439.9	1439.9	1433.4	1439.9	1441.2
5°	1432.1	1434.7	1428.2	1436.0	1437.3
7.5°	1424.3	1424.3	1420.4	1428.2	1429.5
10°	1410.0	1411.3	1410.0	1419.1	1420.4
12.5°	1391.8	1394.4	1395.7	1404.8	1406.1
15°	1369.7	1373.6	1376.2	1387.9	1390.5
17.5°	1344.9	1348.9	1355.4	1368.4	1371.0
20°	1315.0	1320.2	1328.0	1344.9	1348.9
22.5°	1282.5	1287.7	1300.7	1316.3	1322.8
25°	1244.8	1255.2	1268.2	1289.0	1292.9
27.5°	1207.1	1216.2	1233.1	1255.2	1260.4
30°	1162.8	1177.2	1198.0	1220.1	1225.3
32.5°	1119.9	1134.2	1158.9	1182.4	1188.9
35°	1075.7	1088.7	1114.7	1142.0	1149.8
37.5°	1025.0	1041.9	1070.5	1097.8	1105.6
40°	971.6	992.5	1025.0	1053.6	1062.7
42.5°	920.9	943.0	975.5	1006.8	1017.2
45°	867.6	888.4	927.4	962.5	970.3
47.5°	813.0	836.4	878.0	913.1	926.1
50°	758.3	783.0	827.3	863.7	871.5
52.5°	703.7	729.7	776.5	815.6	819.5
55°	646.5	675.1	724.5	762.2	770.0
57.5°	594.4	619.1	672.5	711.5	720.6
60°	537.2	564.5	621.7	658.2	669.9
62.5°	482.6	511.2	571.0	607.4	617.8
65°	425.3	457.9	516.4	559.3	569.7
67.5°	375.9	407.1	469.6	511.2	521.6
70°	318.7	353.8	420.1	463.1	473.5
72.5°	269.2	305.7	372.0	413.6	429.2
75°	215.9	257.5	323.9	368.1	378.5
77.5°	163.9	212.0	279.7	313.5	313.5
80°	117.1	167.8	230.2	245.8	248.4
82.5°	76.7	126.2	170.4	169.1	169.1
85°	44.2	81.9	101.5	98.9	98.9
87.5°	16.9	33.8	36.4	36.4	35.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)