

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: P311514

Luminaire Tested: **24FCZ2-45-UNV-L82765-S-CP187-W2A-U-5700K**

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: P311514
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: 24FCZ2-45-UNV-L82765-S-CP187-W2A-U-5700K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB SHEET
Light Source: (168) 5700K 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: 4247.0 lumens
Efficiency: N/A
Efficacy: 109.7 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

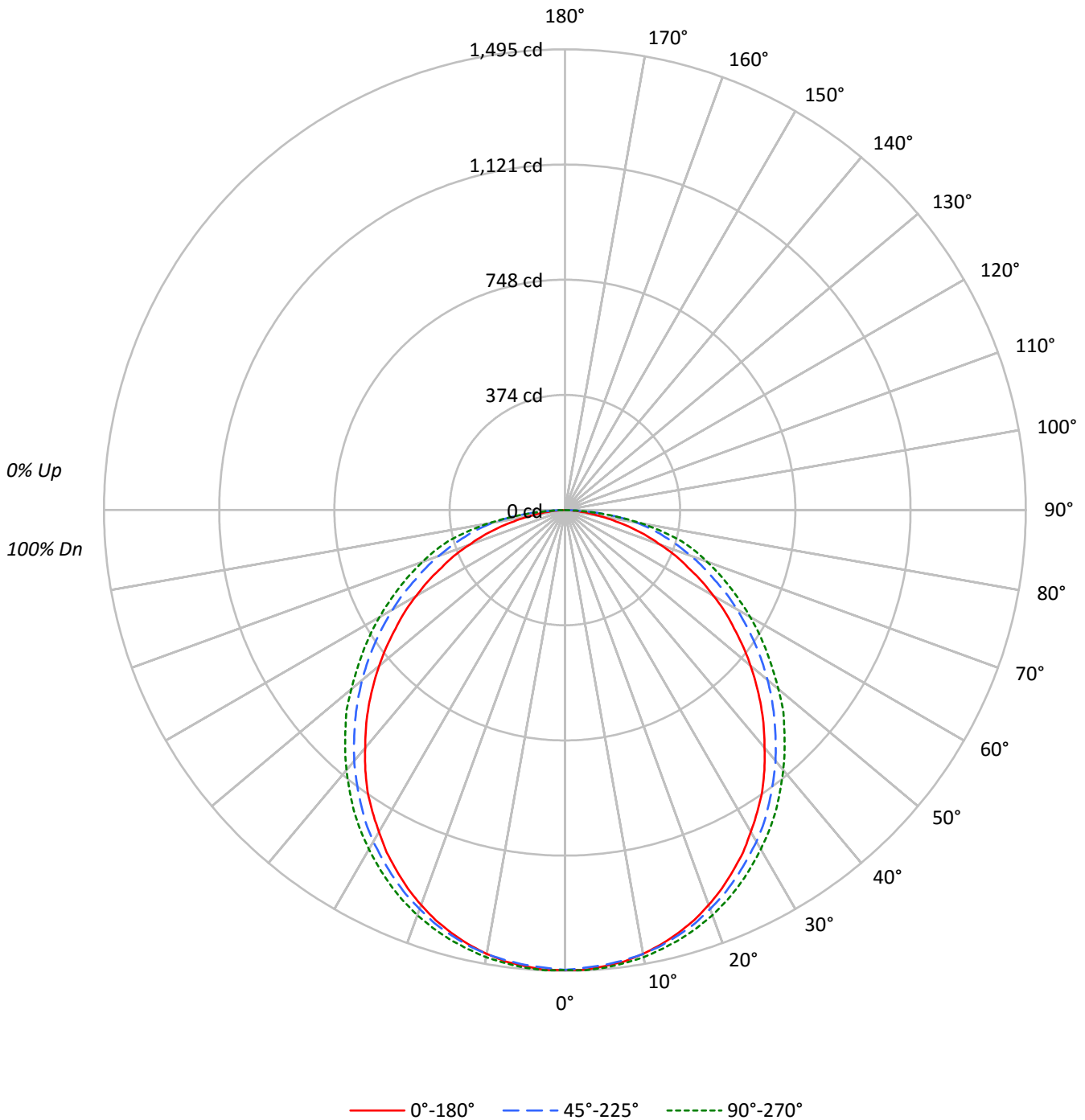
Input Watts (W): 38.7
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	2007	2007	2007
5°	2006	2001	2013
10°	1998	1998	2013
15°	1979	1988	2009
20°	1953	1972	2003
25°	1917	1953	1991
30°	1874	1930	1974
35°	1832	1899	1959
40°	1770	1867	1936
45°	1712	1830	1915
50°	1646	1796	1892
55°	1573	1763	1873
60°	1499	1735	1869
65°	1404	1705	1881
70°	1300	1714	1932
75°	1164	1746	2041
80°	941	1850	1997
85°	709	1624	1582



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	141.2	3.3
10°-20°	403.6	9.5
20°-30°	606.7	14.3
30°-40°	722.7	17.0
40°-50°	739.6	17.4
50°-60°	665.9	15.7
60°-70°	522.9	12.3
70°-80°	339.4	8.0
80°-90°	105.0	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°	1151.5	27.1
0°-40°	1874.2	44.1
0°-60°	3279.7	77.2
0°-90°	4247.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4247.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1492	1492	1492	1492	1492	
5°	1485	1488	1481	1489	1491	141
15°	1420	1424	1427	1439	1442	401
25°	1291	1302	1315	1337	1341	595
35°	1116	1129	1156	1184	1192	696
45°	900	921	962	998	1006	694
55°	670	700	751	790	799	601
65°	441	475	536	580	591	439
75°	224	267	336	382	393	237
85°	46	85	105	102	102	55
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1492.0	1492.0	1492.0	1492.0	1492.0
2.5°	1493.3	1493.3	1486.6	1493.3	1494.7
5°	1485.3	1488.0	1481.2	1489.3	1490.6
7.5°	1477.2	1477.2	1473.1	1481.2	1482.6
10°	1462.3	1463.7	1462.3	1471.8	1473.1
12.5°	1443.4	1446.1	1447.5	1456.9	1458.3
15°	1420.5	1424.5	1427.2	1439.4	1442.1
17.5°	1394.9	1398.9	1405.7	1419.2	1421.9
20°	1363.8	1369.2	1377.3	1394.9	1398.9
22.5°	1330.1	1335.5	1349.0	1365.2	1371.9
25°	1291.0	1301.8	1315.3	1336.9	1340.9
27.5°	1251.9	1261.3	1278.9	1301.8	1307.2
30°	1206.0	1220.8	1242.4	1265.4	1270.8
32.5°	1161.5	1176.3	1202.0	1226.2	1233.0
35°	1115.6	1129.1	1156.1	1184.4	1192.5
37.5°	1063.0	1080.6	1110.2	1138.6	1146.7
40°	1007.7	1029.3	1063.0	1092.7	1102.1
42.5°	955.1	978.0	1011.8	1044.1	1054.9
45°	899.8	921.4	961.8	998.3	1006.4
47.5°	843.1	867.4	910.6	947.0	960.5
50°	786.5	812.1	858.0	895.7	903.8
52.5°	729.8	756.8	805.4	845.8	849.9
55°	670.5	700.1	751.4	790.5	798.6
57.5°	616.5	642.1	697.4	737.9	747.3
60°	557.1	585.5	644.8	682.6	694.7
62.5°	500.5	530.2	592.2	630.0	640.8
65°	441.1	474.8	535.6	580.1	590.9
67.5°	389.9	422.2	487.0	530.2	541.0
70°	330.5	366.9	435.7	480.2	491.0
72.5°	279.2	317.0	385.8	429.0	445.2
75°	223.9	267.1	335.9	381.8	392.6
77.5°	170.0	219.9	290.0	325.1	325.1
80°	121.4	174.0	238.8	255.0	257.7
82.5°	79.6	130.9	176.7	175.4	175.4
85°	45.9	85.0	105.2	102.5	102.5
87.5°	17.5	35.1	37.8	37.8	36.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)