

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: P314332

Luminaire Tested: **24FCZ2-45HE-UNV-L83050-S-CP187-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: P314332
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-L83050-S-CP187-W2A-U-4000K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB 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: 4233.0 lumens
Efficiency: N/A
Efficacy: 122.3 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

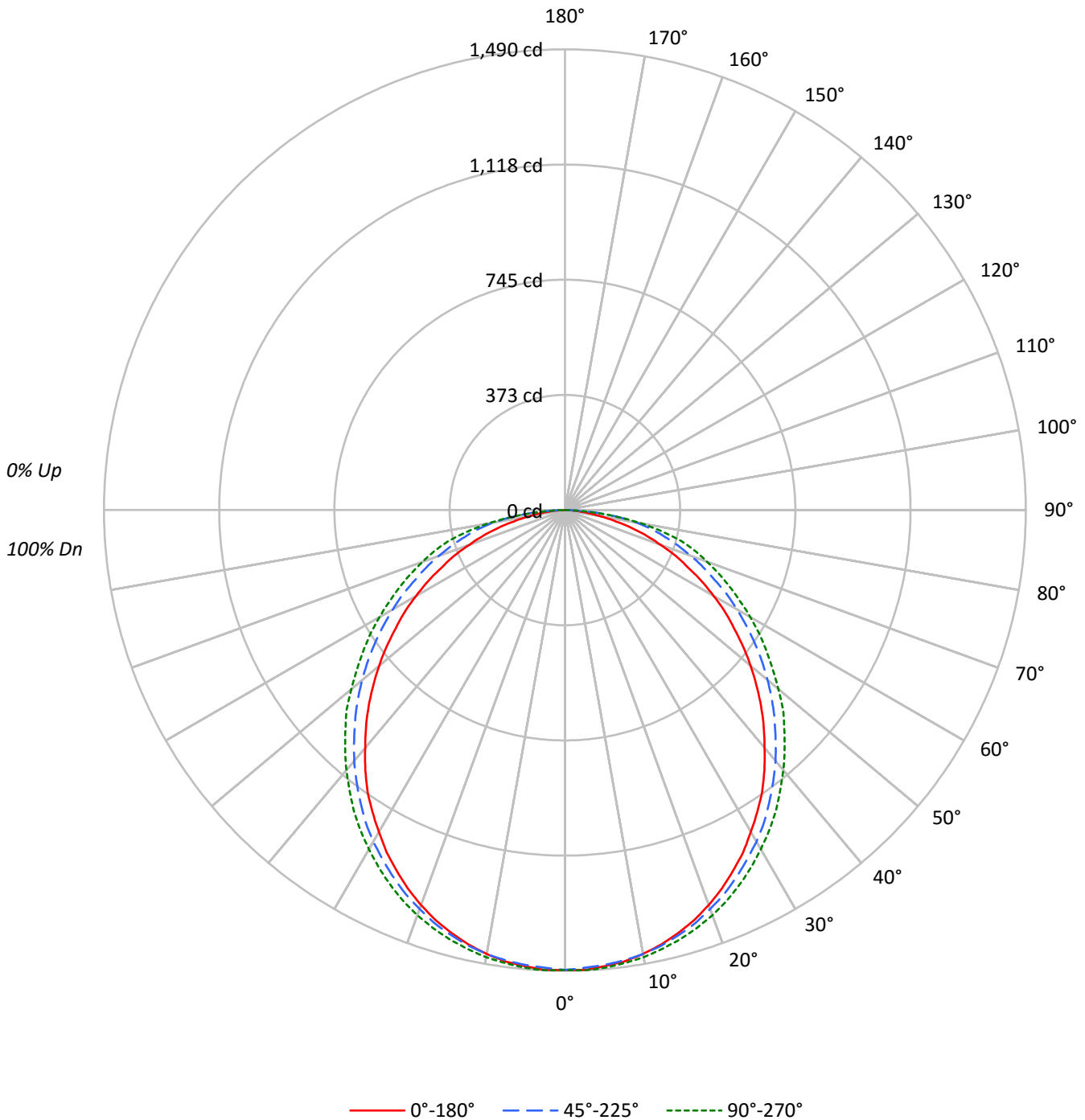
Input Watts (W): 34.6
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	2001	2001	2001
5°	1999	1994	2007
10°	1991	1991	2006
15°	1972	1981	2002
20°	1946	1966	1996
25°	1910	1946	1984
30°	1867	1924	1968
35°	1826	1893	1952
40°	1764	1861	1929
45°	1706	1824	1909
50°	1641	1790	1886
55°	1567	1757	1867
60°	1494	1729	1863
65°	1400	1699	1875
70°	1296	1709	1925
75°	1160	1740	2034
80°	938	1844	1990
85°	706	1619	1578



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	140.8	3.3
10°-20°	402.3	9.5
20°-30°	604.7	14.3
30°-40°	720.3	17.0
40°-50°	737.2	17.4
50°-60°	663.7	15.7
60°-70°	521.2	12.3
70°-80°	338.3	8.0
80°-90°	104.6	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°	1147.7	27.1
0°-40°	1868.0	44.1
0°-60°	3268.9	77.2
0°-90°	4233.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4233.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1487	1487	1487	1487	1487	
5°	1480	1483	1476	1484	1486	141
15°	1416	1420	1422	1435	1437	399
25°	1287	1298	1311	1332	1336	593
35°	1112	1125	1152	1180	1189	694
45°	897	918	959	995	1003	691
55°	668	698	749	788	796	599
65°	440	473	534	578	589	438
75°	223	266	335	380	391	236
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°	1487.1	1487.1	1487.1	1487.1	1487.1
2.5°	1488.4	1488.4	1481.7	1488.4	1489.8
5°	1480.4	1483.0	1476.3	1484.4	1485.7
7.5°	1472.3	1472.3	1468.3	1476.3	1477.7
10°	1457.5	1458.8	1457.5	1466.9	1468.3
12.5°	1438.7	1441.4	1442.7	1452.1	1453.5
15°	1415.8	1419.9	1422.5	1434.6	1437.3
17.5°	1390.3	1394.3	1401.0	1414.5	1417.2
20°	1359.3	1364.7	1372.8	1390.3	1394.3
22.5°	1325.7	1331.1	1344.6	1360.7	1367.4
25°	1286.7	1297.5	1310.9	1332.5	1336.5
27.5°	1247.7	1257.2	1274.6	1297.5	1302.9
30°	1202.0	1216.8	1238.3	1261.2	1266.6
32.5°	1157.7	1172.5	1198.0	1222.2	1228.9
35°	1111.9	1125.4	1152.3	1180.5	1188.6
37.5°	1059.5	1077.0	1106.6	1134.8	1142.9
40°	1004.4	1025.9	1059.5	1089.1	1098.5
42.5°	951.9	974.8	1008.4	1040.7	1051.4
45°	896.8	918.3	958.7	995.0	1003.0
47.5°	840.3	864.6	907.6	943.9	957.3
50°	783.9	809.4	855.1	892.8	900.9
52.5°	727.4	754.3	802.7	843.0	847.1
55°	668.2	697.8	748.9	787.9	796.0
57.5°	614.5	640.0	695.1	735.5	744.9
60°	555.3	583.5	642.7	680.3	692.4
62.5°	498.8	528.4	590.3	627.9	638.7
65°	439.7	473.3	533.8	578.2	588.9
67.5°	388.6	420.8	485.4	528.4	539.2
70°	329.4	365.7	434.3	478.7	489.4
72.5°	278.3	316.0	384.5	427.6	443.7
75°	223.2	266.2	334.8	380.5	391.3
77.5°	169.4	219.2	289.1	324.0	324.0
80°	121.0	173.4	238.0	254.1	256.8
82.5°	79.3	130.4	176.1	174.8	174.8
85°	45.7	84.7	104.9	102.2	102.2
87.5°	17.5	35.0	37.6	37.6	36.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)