

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: P311470

Luminaire Tested: **24FCZ2-45HE-UNV-L82765-S-CP187-W2A-U-6500K**

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: P311470
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-6500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB SHEET
Light Source: (336) 6500K 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: 4214.0 lumens
Efficiency: N/A
Efficacy: 119.4 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

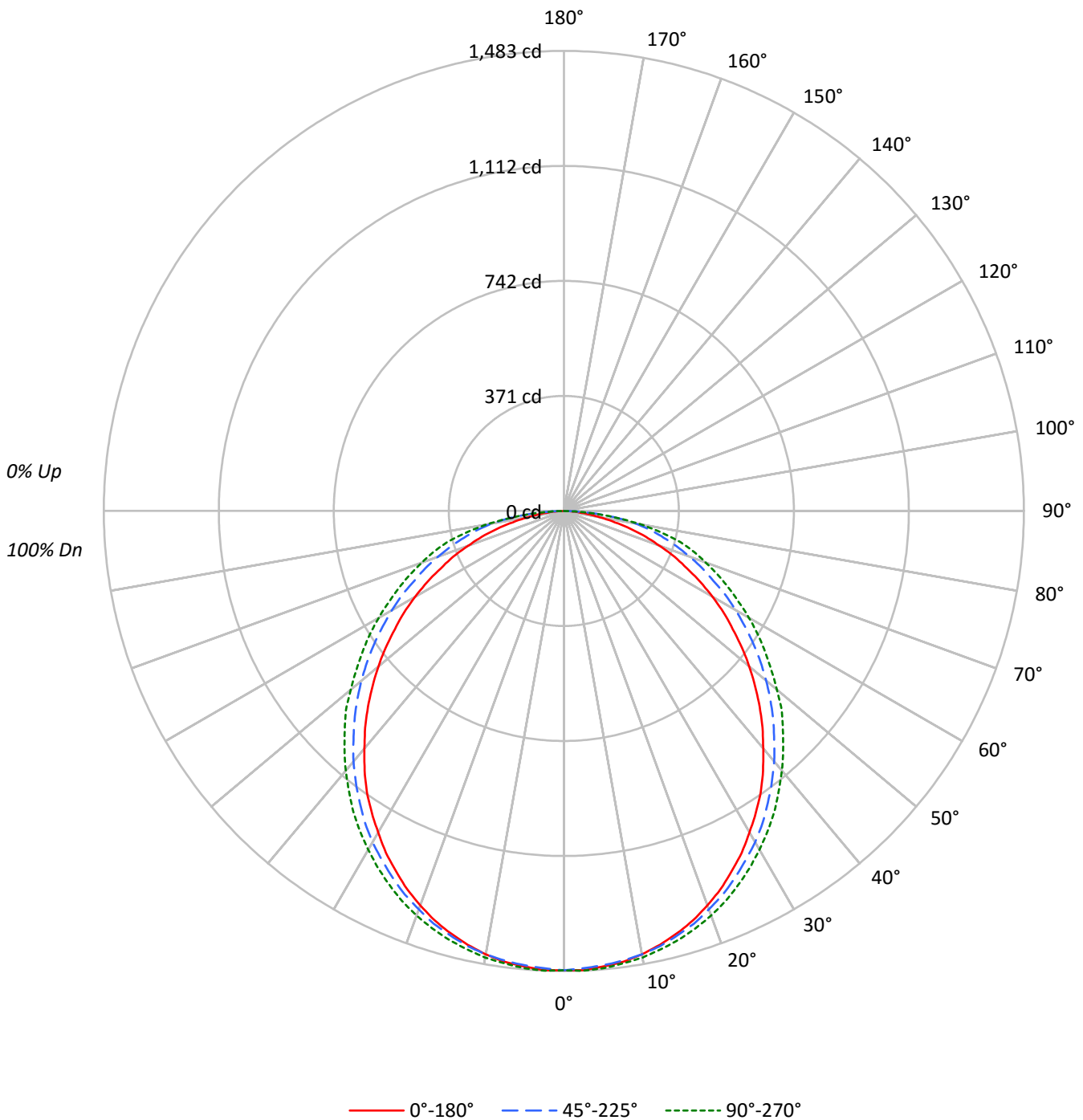
Input Watts (W): 35.3
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	1992	1992	1992
5°	1990	1985	1998
10°	1982	1982	1997
15°	1963	1973	1993
20°	1938	1957	1987
25°	1902	1938	1975
30°	1859	1915	1959
35°	1818	1884	1944
40°	1756	1853	1921
45°	1699	1816	1900
50°	1634	1782	1877
55°	1560	1749	1859
60°	1488	1722	1855
65°	1394	1692	1867
70°	1290	1701	1917
75°	1155	1733	2025
80°	934	1836	1981
85°	702	1612	1570



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	140.2	3.3
10°-20°	400.5	9.5
20°-30°	602.0	14.3
30°-40°	717.1	17.0
40°-50°	733.9	17.4
50°-60°	660.7	15.7
60°-70°	518.9	12.3
70°-80°	336.8	8.0
80°-90°	104.1	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°	1142.6	27.1
0°-40°	1859.7	44.1
0°-60°	3254.2	77.2
0°-90°	4214.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4214.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1480	1480	1480	1480	1480	
5°	1474	1476	1470	1478	1479	140
15°	1410	1414	1416	1428	1431	397
25°	1281	1292	1305	1326	1330	590
35°	1107	1120	1147	1175	1183	691
45°	893	914	954	990	998	688
55°	665	695	746	784	792	596
65°	438	471	531	576	586	436
75°	222	265	333	379	390	235
85°	46	84	104	102	102	55
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1480.4	1480.4	1480.4	1480.4	1480.4
2.5°	1481.7	1481.7	1475.1	1481.7	1483.1
5°	1473.7	1476.4	1469.7	1477.7	1479.1
7.5°	1465.7	1465.7	1461.7	1469.7	1471.0
10°	1451.0	1452.3	1451.0	1460.3	1461.7
12.5°	1432.2	1434.9	1436.2	1445.6	1446.9
15°	1409.5	1413.5	1416.2	1428.2	1430.9
17.5°	1384.0	1388.0	1394.7	1408.1	1410.8
20°	1353.2	1358.6	1366.6	1384.0	1388.0
22.5°	1319.8	1325.1	1338.5	1354.6	1361.3
25°	1281.0	1291.7	1305.1	1326.5	1330.5
27.5°	1242.1	1251.5	1268.9	1291.7	1297.0
30°	1196.6	1211.4	1232.8	1255.5	1260.9
32.5°	1152.5	1167.2	1192.6	1216.7	1223.4
35°	1107.0	1120.3	1147.1	1175.2	1183.3
37.5°	1054.8	1072.2	1101.6	1129.7	1137.7
40°	999.9	1021.3	1054.8	1084.2	1093.6
42.5°	947.7	970.4	1003.9	1036.0	1046.7
45°	892.8	914.2	954.4	990.5	998.5
47.5°	836.6	860.7	903.5	939.6	953.0
50°	780.4	805.8	851.3	888.8	896.8
52.5°	724.1	750.9	799.1	839.3	843.3
55°	665.2	694.7	745.6	784.4	792.4
57.5°	611.7	637.1	692.0	732.2	741.5
60°	552.8	580.9	639.8	677.3	689.3
62.5°	496.6	526.0	587.6	625.1	635.8
65°	437.7	471.2	531.4	575.6	586.3
67.5°	386.8	419.0	483.2	526.0	536.7
70°	327.9	364.1	432.3	476.5	487.2
72.5°	277.1	314.6	382.8	425.7	441.7
75°	222.2	265.0	333.3	378.8	389.5
77.5°	168.7	218.2	287.8	322.6	322.6
80°	120.5	172.7	236.9	253.0	255.7
82.5°	79.0	129.8	175.3	174.0	174.0
85°	45.5	84.3	104.4	101.7	101.7
87.5°	17.4	34.8	37.5	37.5	36.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)