

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: P310787

Luminaire Tested: **24FCZ2-45HE-UNV-L82765-CP187-W2A-U-2700K**

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: P310787
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-15)
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-CP187-W2A-U-2700K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.187" POLYCARB SHEET
Light Source: (336) 2700K 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: 3520.0 lumens
Efficiency: N/A
Efficacy: 104.1 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.29 / 1.38
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

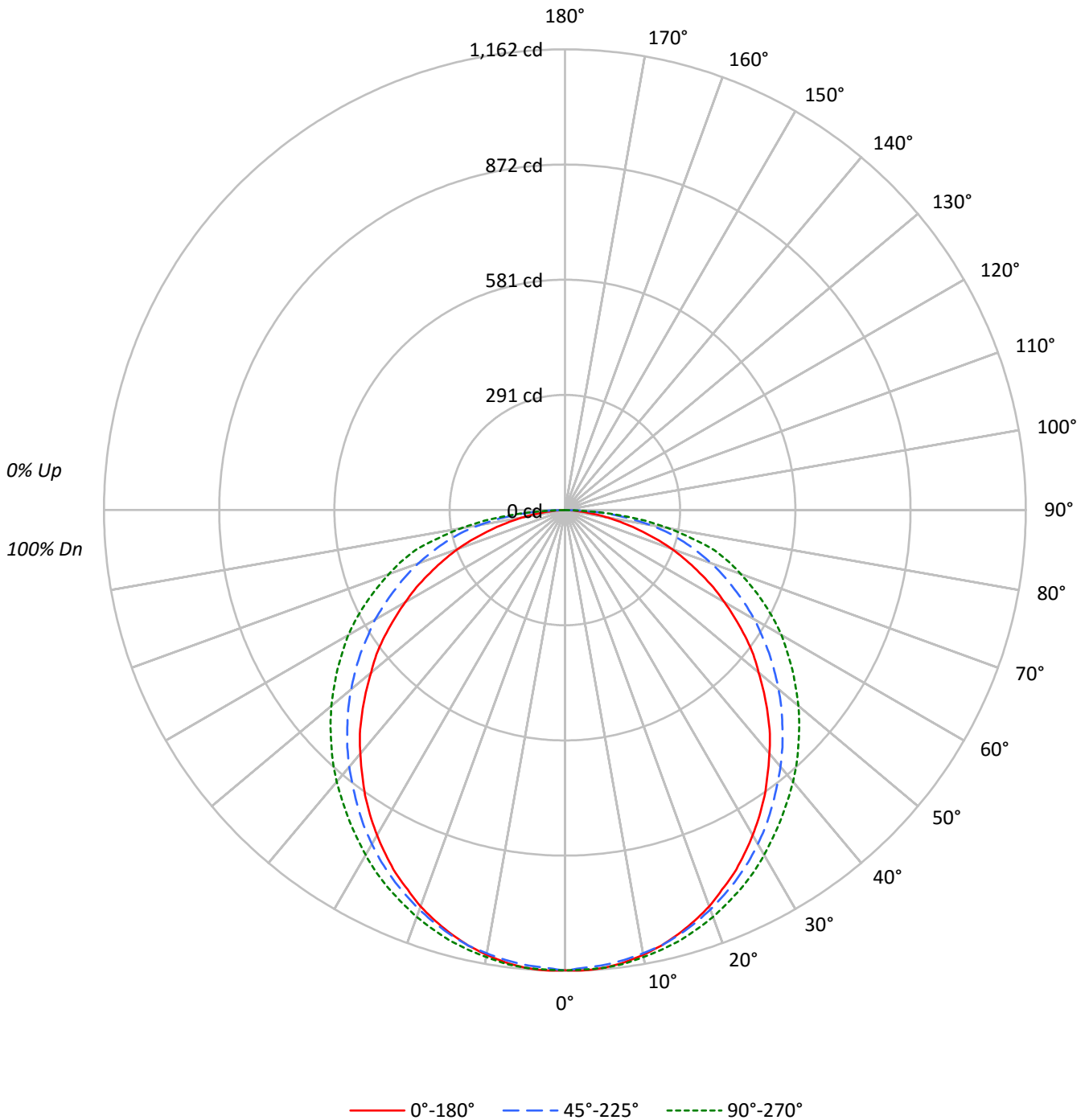
Input Watts (W): 33.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	98	94	105	100	96	92	96	92	89	92	89	87	88	86	84	82
2	98	89	81	75	95	87	80	74	83	78	73	80	75	71	77	73	69	67
3	89	77	69	62	86	76	68	61	73	66	60	70	64	59	67	62	58	56
4	81	68	59	52	79	67	58	52	64	57	51	62	56	50	60	54	50	47
5	74	61	52	45	72	60	51	44	58	50	44	56	49	43	54	48	43	41
6	69	55	46	39	67	54	45	39	52	44	38	50	43	38	49	42	38	36
7	64	50	41	34	62	49	40	34	47	39	34	46	39	34	44	38	33	31
8	59	45	37	31	57	45	36	30	43	36	30	42	35	30	41	34	30	28
9	55	41	33	27	54	41	33	27	40	32	27	39	32	27	38	31	27	25
10	52	38	30	25	50	38	30	25	37	30	25	36	29	25	35	29	24	23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1562	1562	1562
5°	1565	1555	1565
10°	1556	1551	1564
15°	1542	1545	1565
20°	1523	1535	1564
25°	1500	1524	1562
30°	1471	1511	1560
35°	1442	1496	1561
40°	1409	1485	1571
45°	1376	1476	1584
50°	1335	1472	1609
55°	1301	1474	1641
60°	1251	1486	1697
65°	1194	1502	1759
70°	1130	1548	1856
75°	1008	1615	2028
80°	859	1710	2072
85°	613	1695	1984



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	109.9	3.1
10°-20°	314.1	8.9
20°-30°	474.5	13.5
30°-40°	571.8	16.2
40°-50°	600.4	17.1
50°-60°	561.7	16.0
60°-70°	463.8	13.2
70°-80°	316.1	9.0
80°-90°	107.8	3.1
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°	898.5	25.5
0°-40°	1470.3	41.8
0°-60°	2632.3	74.8
0°-90°	3520.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3520.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1161	1161	1161	1161	1161	
5°	1158	1157	1152	1158	1158	110
15°	1107	1108	1110	1121	1124	312
25°	1010	1015	1027	1046	1052	465
35°	878	888	911	941	951	549
45°	723	738	776	818	833	558
55°	555	577	628	680	700	495
65°	375	406	472	531	552	372
75°	194	238	311	369	390	207
85°	40	78	110	124	128	50
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1160.9	1160.9	1160.9	1160.9	1160.9
2.5°	1162.0	1160.9	1155.0	1160.9	1159.7
5°	1158.5	1157.4	1151.5	1158.5	1158.5
7.5°	1150.4	1150.4	1144.5	1152.7	1153.9
10°	1138.7	1138.7	1135.2	1144.5	1144.5
12.5°	1124.7	1124.7	1124.7	1134.0	1135.2
15°	1107.1	1108.3	1109.5	1121.2	1123.5
17.5°	1086.1	1088.5	1092.0	1106.0	1108.3
20°	1063.9	1066.3	1072.1	1088.5	1092.0
22.5°	1035.9	1041.7	1049.9	1068.6	1072.1
25°	1010.2	1014.9	1026.6	1046.4	1052.3
27.5°	978.7	985.7	1000.9	1021.9	1030.1
30°	947.1	954.2	972.8	997.4	1004.4
32.5°	913.3	923.8	943.6	969.3	977.5
35°	878.2	887.6	910.9	941.3	950.6
37.5°	839.7	852.5	878.2	910.9	922.6
40°	802.3	816.3	845.5	880.6	894.6
42.5°	765.0	779.0	811.7	851.4	865.4
45°	722.9	738.1	775.5	817.5	832.7
47.5°	680.9	699.6	740.4	784.8	801.2
50°	637.7	658.7	703.1	749.8	768.5
52.5°	599.1	619.0	665.7	715.9	733.4
55°	554.7	576.9	628.3	679.7	699.6
57.5°	509.2	533.7	588.6	644.7	664.5
60°	464.8	491.7	552.4	608.5	630.7
62.5°	421.6	448.5	511.5	569.9	592.1
65°	374.9	406.4	471.8	531.4	552.4
67.5°	330.5	364.4	433.3	491.7	512.7
70°	287.3	320.0	393.6	450.8	471.8
72.5°	240.6	278.0	351.5	411.1	433.3
75°	193.9	238.2	310.7	369.0	390.1
77.5°	150.7	196.2	268.6	316.5	327.0
80°	110.9	157.7	220.7	254.6	267.4
82.5°	71.2	118.0	168.2	192.7	203.2
85°	39.7	78.2	109.8	123.8	128.5
87.5°	16.4	33.9	44.4	50.2	50.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)