

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: P311372

Luminaire Tested: **24FCZ2-40HE-UNV-L82765-S-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: P311372
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: 24FCZ2-40HE-UNV-L82765-S-CP187-W2A-U-2700K
Description: 2'X4' TROFFER LED MODULE, SMOOTH 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: 3359.0 lumens
Efficiency: N/A
Efficacy: 110.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.27 / 1.35
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

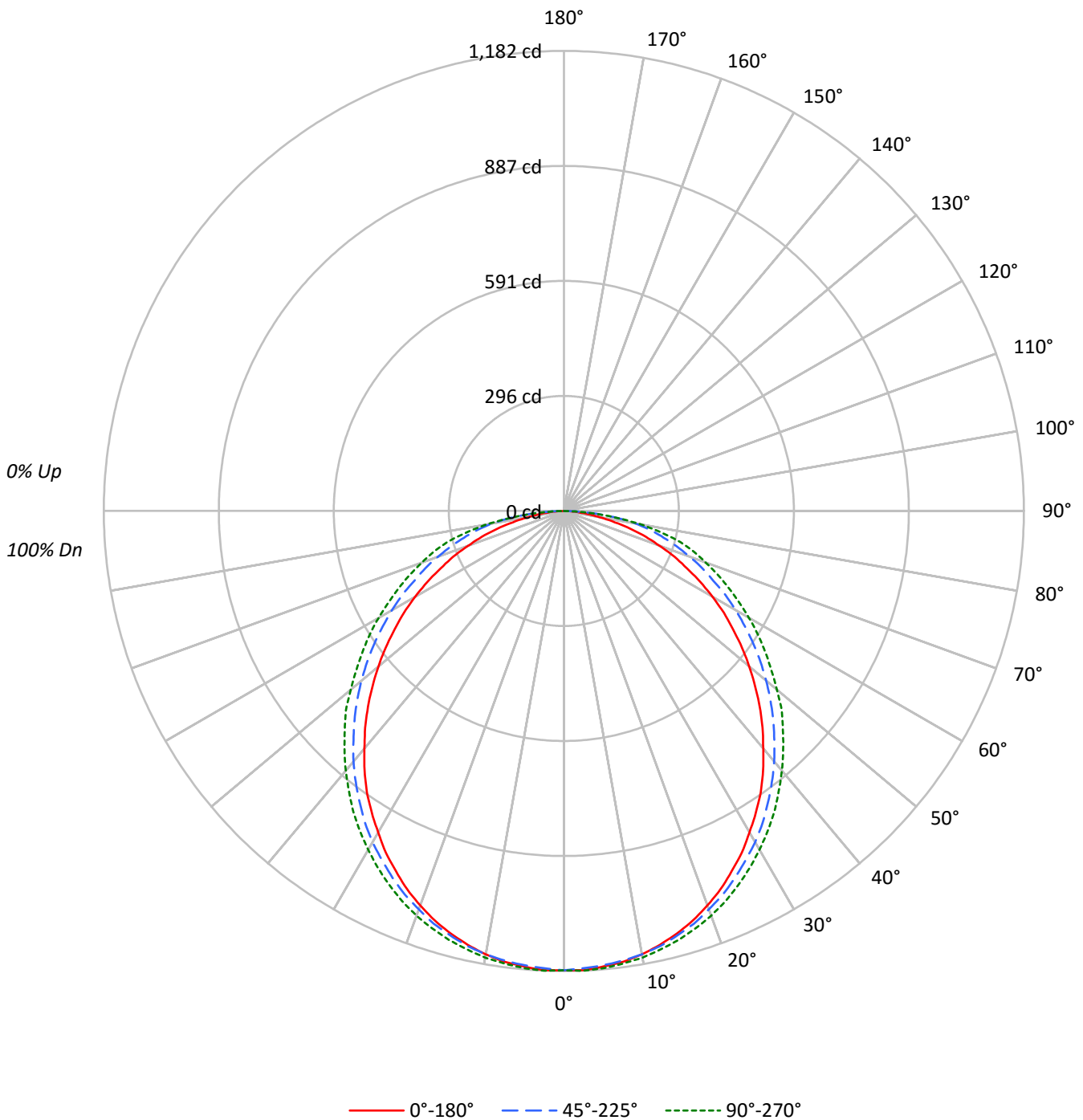
Input Watts (W): 30.4
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	1588	1588	1588
5°	1587	1582	1592
10°	1580	1580	1592
15°	1565	1572	1589
20°	1545	1560	1584
25°	1516	1544	1574
30°	1482	1527	1562
35°	1449	1502	1549
40°	1400	1477	1531
45°	1354	1447	1514
50°	1302	1420	1496
55°	1244	1394	1482
60°	1186	1372	1479
65°	1111	1349	1488
70°	1028	1356	1528
75°	921	1381	1614
80°	744	1463	1579
85°	560	1284	1252



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	111.7	3.3
10°-20°	319.2	9.5
20°-30°	479.8	14.3
30°-40°	571.6	17.0
40°-50°	585.0	17.4
50°-60°	526.7	15.7
60°-70°	413.6	12.3
70°-80°	268.4	8.0
80°-90°	83.0	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°	910.8	27.1
0°-40°	1482.3	44.1
0°-60°	2594.0	77.2
0°-90°	3359.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3359.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1180	1180	1180	1180	1180	
5°	1175	1177	1172	1178	1179	112
15°	1124	1127	1129	1138	1141	317
25°	1021	1030	1040	1057	1060	470
35°	882	893	914	937	943	550
45°	712	729	761	790	796	549
55°	530	554	594	625	632	475
65°	349	376	424	459	467	347
75°	177	211	266	302	310	187
85°	36	67	83	81	81	44
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1180.0	1180.0	1180.0	1180.0	1180.0
2.5°	1181.1	1181.1	1175.8	1181.1	1182.2
5°	1174.7	1176.8	1171.5	1177.9	1179.0
7.5°	1168.3	1168.3	1165.1	1171.5	1172.6
10°	1156.6	1157.6	1156.6	1164.0	1165.1
12.5°	1141.6	1143.8	1144.8	1152.3	1153.4
15°	1123.5	1126.7	1128.8	1138.4	1140.6
17.5°	1103.2	1106.4	1111.8	1122.4	1124.6
20°	1078.7	1082.9	1089.3	1103.2	1106.4
22.5°	1052.0	1056.3	1066.9	1079.7	1085.1
25°	1021.1	1029.6	1040.3	1057.3	1060.5
27.5°	990.1	997.6	1011.5	1029.6	1033.9
30°	953.8	965.6	982.7	1000.8	1005.1
32.5°	918.6	930.4	950.6	969.9	975.2
35°	882.4	893.0	914.4	936.8	943.2
37.5°	840.8	854.6	878.1	900.5	906.9
40°	797.0	814.1	840.8	864.2	871.7
42.5°	755.4	773.5	800.2	825.8	834.3
45°	711.7	728.7	760.7	789.5	795.9
47.5°	666.8	686.0	720.2	749.0	759.7
50°	622.0	642.3	678.6	708.4	714.9
52.5°	577.2	598.6	637.0	669.0	672.2
55°	530.3	553.7	594.3	625.2	631.6
57.5°	487.6	507.9	551.6	583.6	591.1
60°	440.6	463.1	510.0	539.9	549.5
62.5°	395.8	419.3	468.4	498.3	506.8
65°	348.9	375.6	423.6	458.8	467.3
67.5°	308.3	334.0	385.2	419.3	427.8
70°	261.4	290.2	344.6	379.8	388.4
72.5°	220.9	250.7	305.1	339.3	352.1
75°	177.1	211.3	265.7	301.9	310.5
77.5°	134.4	173.9	229.4	257.1	257.1
80°	96.0	137.6	188.8	201.7	203.8
82.5°	62.9	103.5	139.8	138.7	138.7
85°	36.3	67.2	83.2	81.1	81.1
87.5°	13.9	27.7	29.9	29.9	28.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)