

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: P310700

Luminaire Tested: **24FCZ2-40HE-UNV-L82765-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: P310700
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: 24FCZ2-40HE-UNV-L82765-CP187-W2A-U-4000K
Description: 2'X4' TROFFER LED MODULE, RIBBED 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: 3478.0 lumens
Efficiency: N/A
Efficacy: 112.9 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

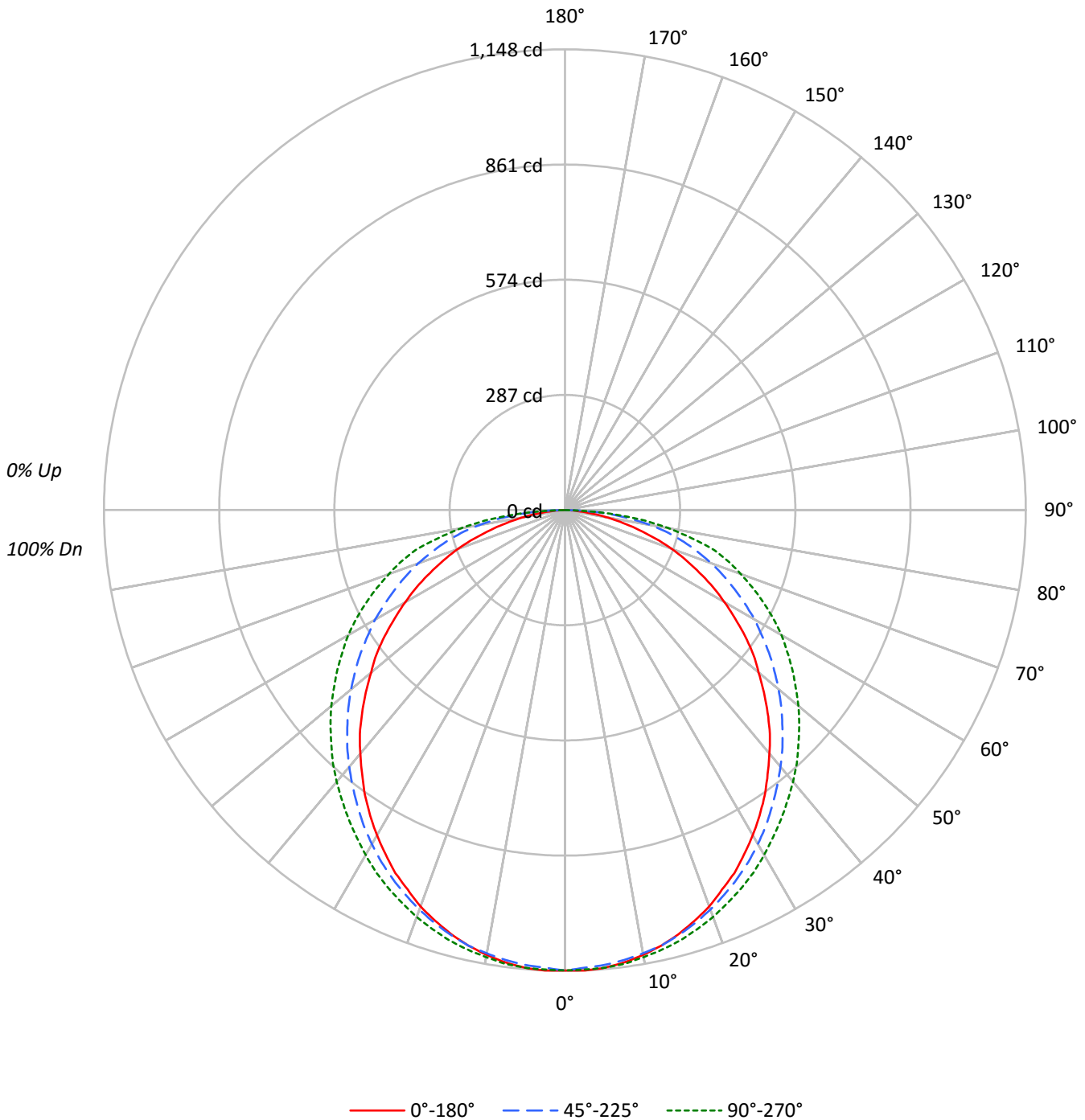
Input Watts (W): 30.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	100	100	100	100	100		
	1	108	103	98	94	105	100	96	92	96	92	89	92	89	87	88	86	84	82	82	82	82	82	82		
	2	98	89	81	75	95	87	80	74	83	78	73	80	75	71	77	73	69	67	67	67	67	67	67		
	3	89	77	69	62	86	76	68	61	73	66	60	70	64	59	67	62	58	56	56	56	56	56	56		
	4	81	68	59	52	79	67	58	52	64	57	51	62	56	50	60	54	50	47	47	47	47	47	47		
	5	74	61	52	45	72	60	51	44	58	50	44	56	49	43	54	48	43	41	41	41	41	41	41		
	6	69	55	46	39	67	54	45	39	52	44	38	50	43	38	49	42	38	36	36	36	36	36	36		
	7	64	50	41	34	62	49	40	34	47	39	34	46	39	34	44	38	33	31	31	31	31	31	31		
	8	59	45	37	31	57	45	36	30	43	36	30	42	35	30	41	34	30	28	28	28	28	28	28		
	9	55	41	33	27	54	41	33	27	40	32	27	39	32	27	38	31	27	25	25	25	25	25	25		
	10	52	38	30	25	50	38	30	25	37	30	25	36	29	25	35	29	24	23	23	23	23	23	23		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1543	1543	1543
5°	1546	1537	1546
10°	1537	1532	1545
15°	1524	1527	1546
20°	1505	1517	1545
25°	1482	1506	1544
30°	1454	1493	1542
35°	1425	1478	1543
40°	1392	1467	1552
45°	1359	1458	1566
50°	1319	1454	1589
55°	1286	1456	1621
60°	1236	1469	1677
65°	1179	1484	1738
70°	1117	1530	1834
75°	996	1595	2004
80°	849	1690	2048
85°	605	1675	1959



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	108.6	3.1
10°-20°	310.4	8.9
20°-30°	468.8	13.5
30°-40°	565.0	16.2
40°-50°	593.2	17.1
50°-60°	554.9	16.0
60°-70°	458.3	13.2
70°-80°	312.3	9.0
80°-90°	106.5	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°	887.8	25.5
0°-40°	1452.8	41.8
0°-60°	2600.9	74.8
0°-90°	3478.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3478.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1147	1147	1147	1147	1147	
5°	1145	1144	1138	1145	1145	109
15°	1094	1095	1096	1108	1110	308
25°	998	1003	1014	1034	1040	459
35°	868	877	900	930	939	542
45°	714	729	766	808	823	551
55°	548	570	621	672	691	489
65°	370	402	466	525	546	367
75°	192	235	307	365	385	204
85°	39	77	108	122	127	49
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1147.0	1147.0	1147.0	1147.0	1147.0
2.5°	1148.2	1147.0	1141.2	1147.0	1145.9
5°	1144.7	1143.6	1137.8	1144.7	1144.7
7.5°	1136.6	1136.6	1130.9	1138.9	1140.1
10°	1125.1	1125.1	1121.6	1130.9	1130.9
12.5°	1111.2	1111.2	1111.2	1120.5	1121.6
15°	1093.9	1095.1	1096.2	1107.8	1110.1
17.5°	1073.2	1075.5	1078.9	1092.8	1095.1
20°	1051.2	1053.5	1059.3	1075.5	1078.9
22.5°	1023.5	1029.3	1037.4	1055.9	1059.3
25°	998.2	1002.8	1014.3	1033.9	1039.7
27.5°	967.0	973.9	988.9	1009.7	1017.8
30°	935.8	942.8	961.2	985.5	992.4
32.5°	902.4	912.8	932.4	957.8	965.8
35°	867.8	877.0	900.1	930.1	939.3
37.5°	829.7	842.4	867.8	900.1	911.6
40°	792.8	806.6	835.5	870.1	883.9
42.5°	755.8	769.7	802.0	841.2	855.1
45°	714.3	729.3	766.2	807.8	822.8
47.5°	672.7	691.2	731.6	775.4	791.6
50°	630.1	650.8	694.7	740.8	759.3
52.5°	592.0	611.6	657.7	707.4	724.7
55°	548.1	570.0	620.8	671.6	691.2
57.5°	503.1	527.3	581.6	637.0	656.6
60°	459.3	485.8	545.8	601.2	623.1
62.5°	416.6	443.1	505.4	563.1	585.0
65°	370.4	401.6	466.2	525.0	545.8
67.5°	326.6	360.0	428.1	485.8	506.6
70°	283.9	316.2	388.9	445.4	466.2
72.5°	237.7	274.6	347.3	406.2	428.1
75°	191.6	235.4	306.9	364.6	385.4
77.5°	148.9	193.9	265.4	312.7	323.1
80°	109.6	155.8	218.1	251.6	264.3
82.5°	70.4	116.5	166.2	190.4	200.8
85°	39.2	77.3	108.5	122.3	126.9
87.5°	16.2	33.5	43.8	49.6	49.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)