

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: P313382

Luminaire Tested: **24FCZ2-70HE-UNV-L83050-HRP-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: P313382
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1808-918-20)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 24FCZ2-70HE-UNV-L83050-HRP-CP187-W2A-U-4000K
Description: 2'X4' TROFFER LED MODULE, HIGH EFFICIENCY RND PERF. 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: 4920.0 lumens
Efficiency: N/A
Efficacy: 83.4 lumens/watt
Spacing Criteria (0/90/45): 1.24 / 1.3 / 1.4
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

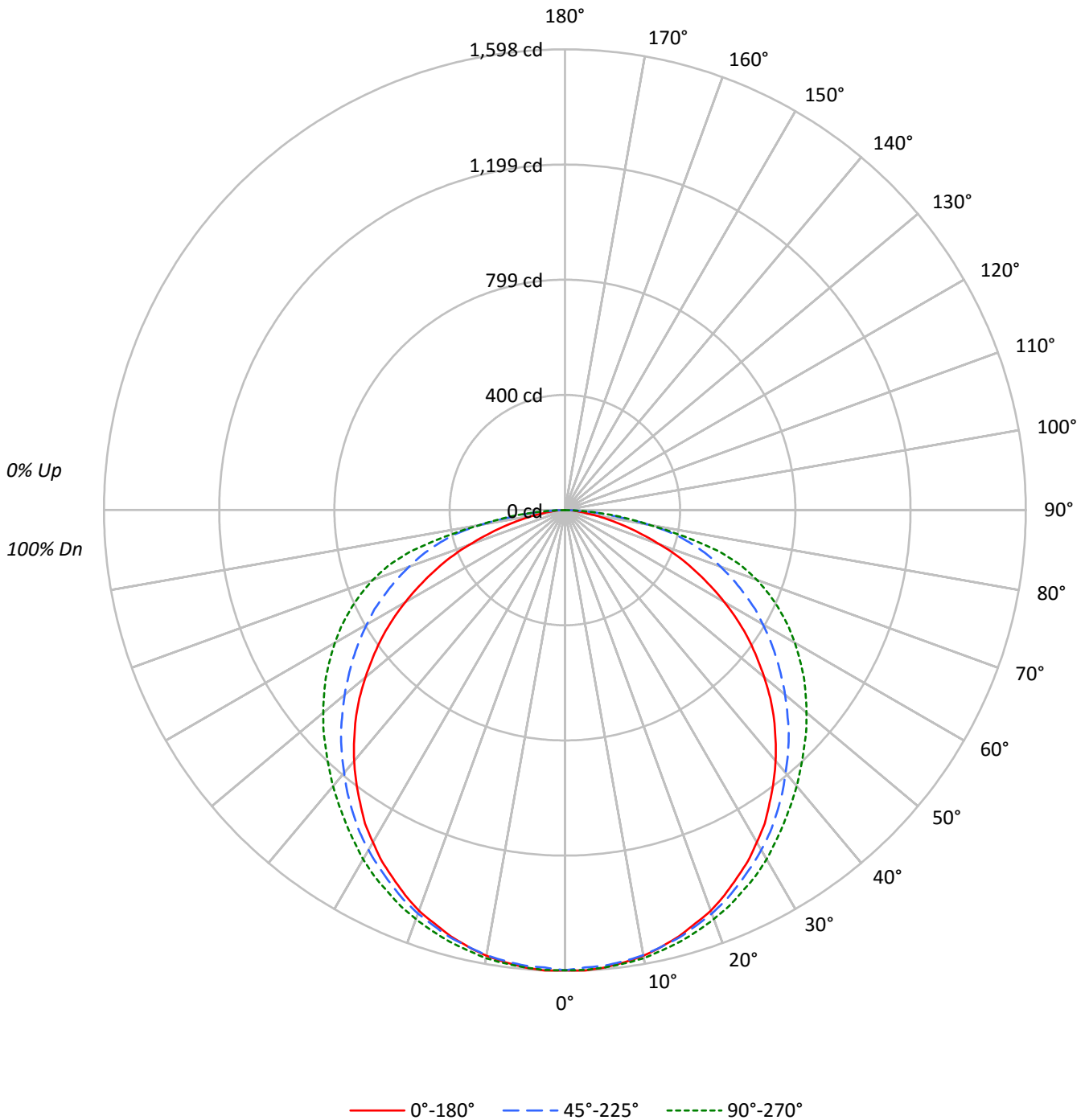
Input Watts (W): 59
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	101	96	93	96	93	90	92	90	87	89	86	84	82
2	98	89	82	76	95	87	80	75	83	78	73	80	75	71	77	73	70	67
3	89	78	69	62	86	76	68	62	73	66	61	70	64	59	68	63	58	56
4	81	68	59	52	79	67	59	52	65	57	51	62	56	50	60	54	50	48
5	74	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43	41
6	69	55	46	39	67	54	45	39	52	44	38	50	43	38	49	42	38	36
7	63	50	41	34	62	49	40	34	47	39	34	46	39	34	44	38	33	31
8	59	45	36	30	57	44	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	24	35	29	24	23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2148	2148	2148
5°	2150	2142	2150
10°	2144	2142	2156
15°	2132	2137	2158
20°	2118	2132	2162
25°	2092	2122	2165
30°	2067	2115	2173
35°	2033	2104	2175
40°	1997	2091	2196
45°	1952	2089	2230
50°	1888	2087	2289
55°	1822	2102	2372
60°	1718	2134	2478
65°	1587	2184	2616
70°	1386	2261	2788
75°	1124	2377	2881
80°	830	2330	2330
85°	636	1717	1939



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	151.2	3.1
10°-20°	434.2	8.8
20°-30°	661.1	13.4
30°-40°	802.7	16.3
40°-50°	848.1	17.2
50°-60°	800.2	16.3
60°-70°	665.4	13.5
70°-80°	437.7	8.9
80°-90°	119.3	2.4
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°	1246.5	25.3
0°-40°	2049.3	41.7
0°-60°	3697.5	75.2
0°-90°	4920.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4920.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1596	1596	1596	1596	1596	
5°	1592	1592	1586	1592	1592	151
15°	1530	1532	1534	1549	1549	432
25°	1409	1417	1430	1454	1458	650
35°	1238	1252	1281	1314	1324	775
45°	1026	1046	1098	1151	1172	790
55°	776	810	896	980	1011	692
65°	498	556	686	787	822	493
75°	216	315	457	542	554	233
85°	41	91	111	124	126	50
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1596.3	1596.3	1596.3	1596.3	1596.3
2.5°	1598.4	1596.3	1588.1	1596.3	1596.3
5°	1592.2	1592.2	1586.0	1592.2	1592.2
7.5°	1581.9	1581.9	1577.8	1586.0	1586.0
10°	1569.5	1569.5	1567.5	1577.8	1577.8
12.5°	1551.0	1553.0	1551.0	1563.3	1563.3
15°	1530.4	1532.4	1534.5	1548.9	1548.9
17.5°	1503.6	1507.7	1511.8	1528.3	1530.4
20°	1478.9	1481.0	1489.2	1507.7	1509.8
22.5°	1445.9	1452.1	1462.4	1481.0	1487.1
25°	1408.9	1417.1	1429.5	1454.2	1458.3
27.5°	1373.8	1380.0	1396.5	1423.3	1431.5
30°	1330.6	1340.9	1361.5	1388.3	1398.6
32.5°	1289.4	1299.7	1324.4	1353.2	1361.5
35°	1237.9	1252.3	1281.2	1314.1	1324.4
37.5°	1188.5	1202.9	1237.9	1275.0	1287.3
40°	1137.0	1153.5	1190.5	1233.8	1250.3
42.5°	1081.4	1104.0	1145.2	1192.6	1211.1
45°	1025.8	1046.3	1097.8	1151.4	1172.0
47.5°	966.0	990.7	1046.3	1110.2	1134.9
50°	902.2	933.1	996.9	1066.9	1093.7
52.5°	838.3	873.3	945.4	1023.7	1052.5
55°	776.5	809.5	896.0	980.4	1011.3
57.5°	708.6	749.7	844.5	935.1	966.0
60°	638.5	683.8	793.0	887.7	920.7
62.5°	568.5	620.0	743.6	838.3	873.3
65°	498.5	556.1	685.9	786.8	821.8
67.5°	430.5	494.3	632.3	733.3	768.3
70°	352.2	432.5	574.7	673.5	708.6
72.5°	280.1	372.8	519.1	611.7	642.6
75°	216.3	315.1	457.3	541.7	554.1
77.5°	158.6	257.5	393.4	422.2	424.3
80°	107.1	206.0	300.7	296.6	300.7
82.5°	70.0	154.5	189.5	212.2	214.2
85°	41.2	90.6	111.2	123.6	125.6
87.5°	20.6	30.9	39.1	41.2	45.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)