

Scaled data based on original data using  
LM-66-11 Electrical and Photometric Measurements of Single-Ended Compact  
Fluorescent Lamps

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: SHAPER

Report Number: 20059A

Luminaire Tested: **688-CF2/32**

Issue Date: 3/3/2020

**Test Information**

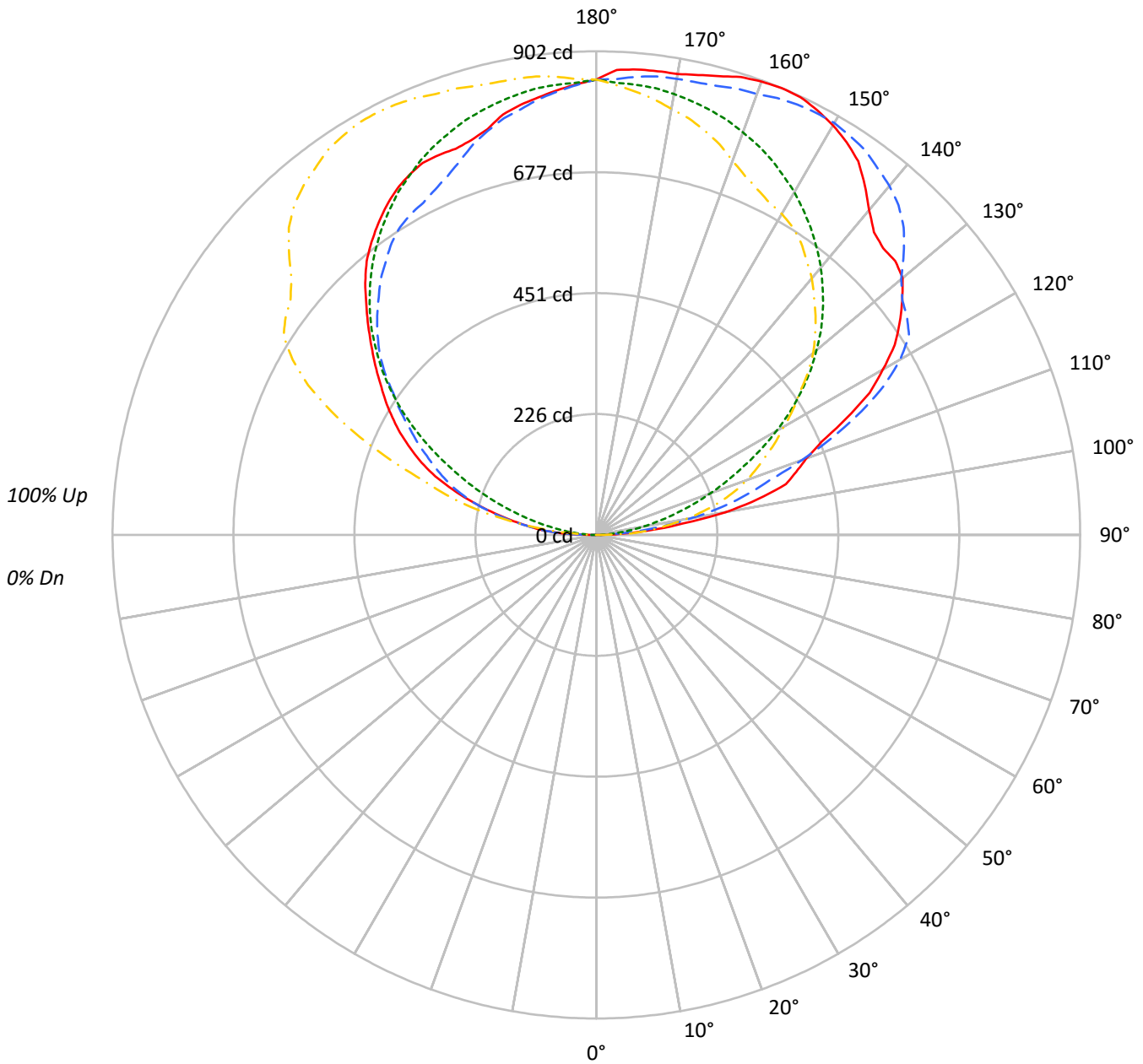
Test Method: LM-66-11  
Report Number: 20059A  
Test Lab:  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: SHAPER  
Catalog Number: 688-CF2/32  
Description: WITH WHITE INTERIOR AND NO LENS  
  
Light Source: TWO 32 WATT CPFL LAMPS. LUMEN RATING = 4800 LMS.  
  
Ballast/Driver: -

**Summary**

Lumens per Lamp: 4800 (1 lamp)  
Luminaire Lumens: 2957.8 lumens  
Efficiency: 61.6%  
Efficacy: -  
N/A  
Luminous Opening: Point Source (0' x 0' x 0')  
CIE Type: Indirect  
  
Input Watts (W): 0  
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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CATALOG NUMBER: 688-CF2/32

### Luminous Intensity Polar Plot



— 0°-180°    - - 45°-225°    - - - 90°-270°    - - - 135°-315°



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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	59	59	59	59	50	50	50	50	34	34	34	20	20	20	6	6	6	0
1	53	51	49	47	46	44	42	40	30	29	28	17	17	16	5	5	5	0
2	49	44	41	38	41	38	35	33	26	24	23	15	14	13	5	5	4	0
3	44	39	35	32	38	33	30	27	23	21	19	13	12	11	4	4	4	0
4	40	34	30	26	34	29	26	23	20	18	16	12	11	10	4	3	3	0
5	37	30	26	22	31	26	22	19	18	16	14	10	9	8	3	3	3	0
6	34	27	22	19	29	23	19	17	16	14	12	9	8	7	3	3	2	0
7	31	24	20	17	26	21	17	14	14	12	10	8	7	6	3	2	2	0
8	29	22	17	14	24	19	15	13	13	11	9	8	6	5	2	2	2	0
9	27	20	15	13	23	17	13	11	12	9	8	7	6	5	2	2	2	0
10	25	18	14	11	21	15	12	10	11	8	7	6	5	4	2	2	1	0

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
95°	Luminaire represents a point source (luminous area is zero).			
100°	No luminance values can be calculated.			
105°				
110°				
115°				
120°				
125°				
130°				
135°				
140°				
145°				
150°				
155°				
160°				
165°				
170°				
175°				



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 CATALOG NUMBER: 688-CF2/32

**ZONAL LUMENS:**

Zone	Lumens	% Fixture	% Lamp
0°-10°	0.0	0.0	0.0
10°-20°	0.0	0.0	0.0
20°-30°	0.0	0.0	0.0
30°-40°	0.0	0.0	0.0
40°-50°	0.0	0.0	0.0
50°-60°	0.0	0.0	0.0
60°-70°	0.0	0.0	0.0
70°-80°	0.0	0.0	0.0
80°-90°	0.0	0.0	0.0
90°-100°	88.7	3.0	1.8
100°-110°	268.8	9.1	5.6
110°-120°	416.3	14.1	8.7
120°-130°	508.0	17.2	10.6
130°-140°	517.5	17.5	10.8
140°-150°	471.8	16.0	9.8
150°-160°	371.2	12.5	7.7
160°-170°	234.9	7.9	4.9
170°-180°	80.8	2.7	1.7
0°-30°	0.0	0.0	0.0
0°-40°	0.0	0.0	0.0
0°-60°	0.0	0.0	0.0
0°-90°	0.0	0.0	0.0
90°-120°	773.7	26.2	16.1
90°-150°	2271.0	76.8	47.3
90°-180°	2958.0	100.0	61.6
0°-180°	2957.8	100.0	61.6

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
90°	0	0	0	0	0	
95°	102	36	100	36	102	118
105°	366	152	241	152	366	369
115°	514	303	382	303	514	510
125°	690	466	491	466	690	616
135°	756	598	606	598	756	589
145°	851	698	709	698	851	529
155°	901	772	766	772	901	415
165°	886	820	784	820	886	252
175°	871	843	833	843	871	83
180°	849	849	849	849	849	



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 CATALOG NUMBER: 688-CF2/32

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	44.2	42.0	25.5	12.2	14.3	49.2	62.5	57.2	60.0	57.2	62.5
95°	102.4	106.4	75.2	41.7	36.1	85.9	99.2	101.8	100.4	101.8	99.2
97.5°	164.0	178.0	124.8	69.7	60.2	132.0	130.9	126.9	130.1	126.9	130.9
100°	244.9	270.6	181.3	104.3	88.4	172.3	168.7	160.3	163.6	160.3	168.7
102.5°	309.0	345.3	238.9	151.3	118.8	207.2	204.7	193.5	201.4	193.5	204.7
105°	365.9	406.4	289.9	202.9	152.1	240.9	239.9	232.4	240.6	232.4	239.9
107.5°	390.4	434.9	338.5	249.9	187.9	268.6	270.6	268.3	280.6	268.3	270.6
110°	416.1	467.6	406.9	302.8	225.5	299.6	297.8	305.3	319.5	305.3	297.8
112.5°	454.3	528.4	477.7	351.0	263.5	330.5	323.7	334.9	353.2	334.9	323.7
115°	514.4	598.3	545.4	404.7	303.4	360.0	348.9	361.9	382.4	361.9	348.9
117.5°	574.1	653.2	605.8	467.6	346.4	386.7	377.4	389.9	412.2	389.9	377.4
120°	617.0	697.6	654.0	529.2	387.8	412.2	403.6	416.6	439.3	416.6	403.6
122.5°	659.4	734.6	691.1	587.8	428.2	436.0	434.6	442.5	466.2	442.5	434.6
125°	690.4	759.3	707.2	634.2	466.2	460.8	462.6	472.0	491.4	472.0	462.6
127.5°	718.8	780.0	718.8	673.4	502.9	484.5	497.2	500.4	519.4	500.4	497.2
130°	745.1	788.5	741.8	706.1	535.7	507.2	527.7	530.9	547.1	530.9	527.7
132.5°	756.1	786.8	777.0	736.1	568.4	530.2	553.3	561.9	576.6	561.9	553.3
135°	756.1	789.0	810.5	758.8	597.5	547.9	577.8	594.6	606.5	594.6	577.8
137.5°	765.8	806.2	833.9	777.3	624.7	564.8	600.8	624.8	637.8	624.8	600.8
140°	791.0	836.7	849.7	791.5	651.0	582.4	624.8	649.7	666.2	649.7	624.8
142.5°	822.0	865.6	861.6	803.3	674.8	604.0	644.3	672.0	688.5	672.0	644.3
145°	850.9	883.6	874.9	814.8	697.5	627.0	665.5	694.4	709.1	694.4	665.5
147.5°	868.4	896.1	881.4	823.7	718.1	651.2	681.0	712.6	728.1	712.6	681.0
150°	882.1	905.5	887.1	833.9	738.3	676.7	691.4	731.6	744.3	731.6	691.4
152.5°	892.6	913.0	887.5	840.0	754.9	698.6	698.6	746.1	756.5	746.1	698.6
155°	900.8	915.5	885.6	847.2	772.2	720.1	710.9	750.8	765.8	750.8	710.9
157.5°	902.3	913.0	881.7	853.7	786.6	738.9	724.6	752.9	767.0	752.9	724.6
160°	899.8	909.1	875.3	859.8	799.0	757.6	742.5	759.1	766.3	759.1	742.5
162.5°	895.4	900.1	872.7	866.3	811.2	774.2	763.8	771.3	772.3	771.3	763.8
165°	885.6	890.3	866.9	868.4	820.0	787.8	780.6	789.0	783.8	789.0	780.6
167.5°	878.6	882.1	864.4	870.2	828.1	803.0	795.7	806.9	803.3	806.9	795.7
170°	872.7	876.6	863.7	871.3	834.9	815.2	806.5	819.2	814.5	819.2	806.5
172.5°	872.4	874.1	862.4	867.4	840.5	826.0	819.9	829.9	823.2	829.9	819.9
175°	871.3	871.3	857.9	863.7	842.9	835.4	830.2	840.7	832.7	840.7	830.2
177.5°	868.1	866.9	850.9	858.4	844.1	844.4	840.0	850.1	841.4	850.1	840.0
180°	849.3	849.3	849.3	849.3	849.3	849.3	849.3	849.3	849.3	849.3	849.3



TEST NUMBER: 20059A  
 CATALOG NUMBER: 688-CF2/32

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	49.2	14.3	12.2	25.5	42.0	44.2
95°	85.9	36.1	41.7	75.2	106.4	102.4
97.5°	132.0	60.2	69.7	124.8	178.0	164.0
100°	172.3	88.4	104.3	181.3	270.6	244.9
102.5°	207.2	118.8	151.3	238.9	345.3	309.0
105°	240.9	152.1	202.9	289.9	406.4	365.9
107.5°	268.6	187.9	249.9	338.5	434.9	390.4
110°	299.6	225.5	302.8	406.9	467.6	416.1
112.5°	330.5	263.5	351.0	477.7	528.4	454.3
115°	360.0	303.4	404.7	545.4	598.3	514.4
117.5°	386.7	346.4	467.6	605.8	653.2	574.1
120°	412.2	387.8	529.2	654.0	697.6	617.0
122.5°	436.0	428.2	587.8	691.1	734.6	659.4
125°	460.8	466.2	634.2	707.2	759.3	690.4
127.5°	484.5	502.9	673.4	718.8	780.0	718.8
130°	507.2	535.7	706.1	741.8	788.5	745.1
132.5°	530.2	568.4	736.1	777.0	786.8	756.1
135°	547.9	597.5	758.8	810.5	789.0	756.1
137.5°	564.8	624.7	777.3	833.9	806.2	765.8
140°	582.4	651.0	791.5	849.7	836.7	791.0
142.5°	604.0	674.8	803.3	861.6	865.6	822.0
145°	627.0	697.5	814.8	874.9	883.6	850.9
147.5°	651.2	718.1	823.7	881.4	896.1	868.4
150°	676.7	738.3	833.9	887.1	905.5	882.1
152.5°	698.6	754.9	840.0	887.5	913.0	892.6
155°	720.1	772.2	847.2	885.6	915.5	900.8
157.5°	738.9	786.6	853.7	881.7	913.0	902.3
160°	757.6	799.0	859.8	875.3	909.1	899.8
162.5°	774.2	811.2	866.3	872.7	900.1	895.4
165°	787.8	820.0	868.4	866.9	890.3	885.6
167.5°	803.0	828.1	870.2	864.4	882.1	878.6
170°	815.2	834.9	871.3	863.7	876.6	872.7
172.5°	826.0	840.5	867.4	862.4	874.1	872.4
175°	835.4	842.9	863.7	857.9	871.3	871.3
177.5°	844.4	844.1	858.4	850.9	866.9	868.1
180°	849.3	849.3	849.3	849.3	849.3	849.3

(END OF REPORT)