

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: 766665

Luminaire Tested: **QDDCPP28xxxx**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: 766665
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: QDDCPP28xxxx
Description: FAIL-SAFE CLEAR DECORATIVE
Light Source: #036 -PHILIPS PL-C 15mm/28W/27 32 AT 120 VOLTS 1600 LUMENS
Ballast/Driver: ONE ROBERTSON #028C

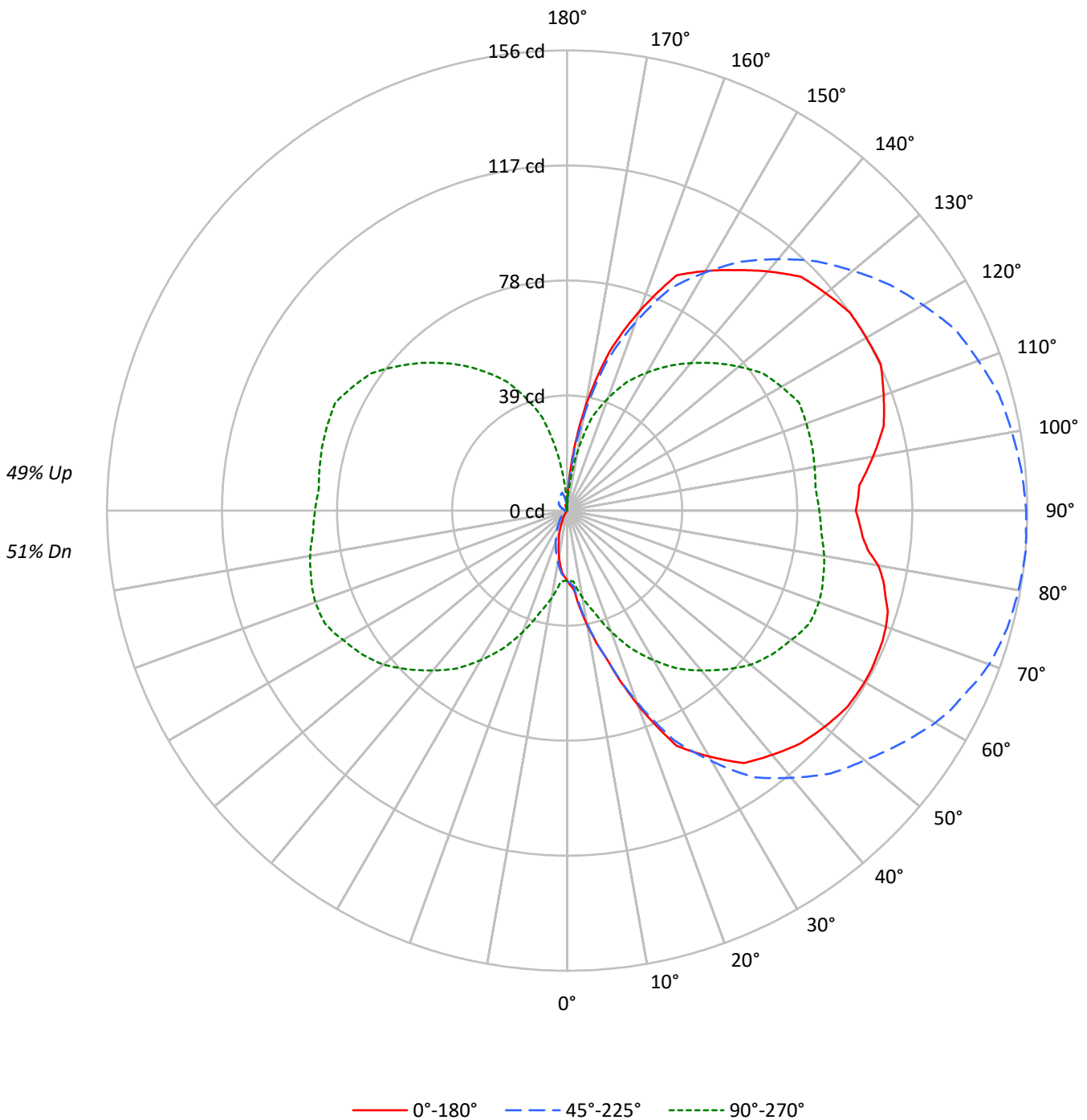
Summary

Lumens per Lamp: 1600 (1 lamp)
Luminaire Lumens: 836.8 lumens
Efficiency: 52.3%
Efficacy: 29.9 lumens/watt
Spacing Criteria (0/90/45): 2.74 / 3.34 / 3.02
Luminous Opening: Point Source (0' x 0' x 0')
CIE Type: General Diffuse

Input Watts (W): 28
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	56	56	56	56	52	52	52	52	44	44	44	36	36	36	30	30	30	27
1	48	45	42	39	44	41	39	36	34	32	30	28	26	25	22	21	20	17
2	43	38	34	30	39	35	31	28	29	26	23	23	21	19	18	16	15	12
3	39	32	28	24	35	30	25	22	24	21	18	20	17	15	15	13	11	9
4	35	28	23	19	32	26	21	18	21	18	15	17	14	12	13	11	9	7
5	32	25	20	16	29	23	18	15	19	15	12	15	12	10	11	9	7	6
6	29	22	17	14	26	20	16	12	16	13	10	13	10	8	10	8	6	5
7	27	20	15	12	24	18	14	11	15	11	9	12	9	7	9	7	5	4
8	25	18	13	10	23	16	12	9	13	10	8	11	8	6	8	6	5	3
9	23	16	12	9	21	15	11	8	12	9	7	10	7	5	8	5	4	3
10	21	15	10	8	19	13	10	7	11	8	6	9	6	5	7	5	4	2

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	Luminaire represents a point source (luminous area is zero).		
5°	No luminance values can be calculated.		
10°			
15°			
20°			
25°			
30°			
35°			
40°			
45°			
50°			
55°			
60°			
65°			
70°			
75°			
80°			
85°			



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	45°	90°	135°	180°	Flux
0°-10°	2.5	0.3	0.2	0°	24	24	24	24	24	
10°-20°	9.9	1.2	0.6	5°	27	26	24	21	21	3
20°-30°	21.8	2.6	1.4	15°	52	52	36	14	11	16
30°-40°	36.4	4.4	2.3	25°	88	86	52	8	4	38
40°-50°	51.0	6.1	3.2	35°	104	110	65	5	1	64
50°-60°	64.3	7.7	4.0	45°	112	126	76	2	0	86
60°-70°	75.0	9.0	4.7	55°	116	138	85	1	0	104
70°-80°	81.0	9.7	5.1	65°	116	148	91	1	0	115
80°-90°	82.1	9.8	5.1	75°	112	154	90	1	0	118
90°-100°	81.6	9.8	5.1	85°	100	156	86	0	0	83
100°-110°	79.5	9.5	5.0	90°	98	156	86	0	0	54
110°-120°	73.5	8.8	4.6	95°	100	155	84	1	0	83
120°-130°	62.8	7.5	3.9	105°	111	152	86	1	0	116
130°-140°	49.1	5.9	3.1	115°	117	145	87	2	0	115
140°-150°	34.6	4.1	2.2	125°	117	134	81	3	0	104
150°-160°	20.5	2.5	1.3	135°	112	120	71	4	0	85
160°-170°	8.1	1.0	0.5	145°	100	103	60	4	0	63
170°-180°	0.9	0.1	0.1	155°	88	83	48	5	1	38
0°-30°	34.1	4.1	2.1	165°	56	53	33	6	2	15
0°-40°	70.5	8.4	4.4	175°	15	13	8	2	0	2
0°-60°	185.9	22.2	11.6	180°	0	0	0	0	0	
0°-90°	424.0	50.7	26.5							
90°-120°	234.6	28.0	14.7							
90°-150°	381.1	45.5	23.8							
90°-180°	411.0	49.1	25.7							
0°-180°	836.8	100.0	52.3							



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7
5°	27.0	27.0	27.9	26.7	27.4	25.7	26.4	25.2	24.9	24.2	24.1
15°	52.1	54.7	51.9	53.4	53.6	52.1	50.8	46.8	43.5	38.2	35.8
25°	88.0	85.9	85.4	86.5	84.7	85.9	81.3	75.2	65.9	57.2	51.6
35°	104.5	104.8	106.1	107.8	109.3	110.4	106.8	98.9	84.2	71.5	65.4
45°	111.7	111.7	114.0	118.8	122.6	126.1	123.9	113.6	98.1	82.7	76.1
50°	114.0	114.2	118.0	123.3	127.9	131.7	130.2	119.0	102.5	87.8	81.3
55°	116.0	116.2	121.3	127.6	133.3	137.9	134.8	124.1	106.5	91.1	84.9
60°	116.4	117.2	123.8	132.3	138.4	144.0	141.7	130.0	111.1	93.9	87.7
62.5°	116.4	117.3	124.9	133.7	140.7	146.5	144.4	132.3	113.1	95.8	89.3
65°	116.0	117.5	125.9	135.0	142.6	148.2	146.8	134.2	114.0	96.6	90.6
67.5°	115.7	117.2	126.1	136.3	144.4	150.5	149.0	135.8	115.2	97.1	90.8
70°	115.0	116.5	126.2	137.0	146.2	152.3	150.6	137.1	115.9	97.2	90.8
72.5°	114.0	115.9	127.2	137.8	147.7	153.4	152.1	137.9	116.4	97.2	90.5
75°	111.7	114.0	125.1	138.4	148.5	154.4	153.3	138.6	116.7	96.9	89.8
77.5°	109.8	111.7	123.8	138.4	148.5	154.9	154.1	139.4	116.7	96.6	89.2
80°	107.1	108.9	122.1	138.3	148.8	155.4	154.8	139.9	116.7	96.1	88.5
82.5°	102.8	104.7	120.6	138.1	148.8	155.7	155.3	140.3	116.9	95.6	87.5
85°	100.5	103.2	119.5	137.9	149.0	156.1	155.6	140.4	116.5	94.6	86.5
87.5°	99.2	101.2	119.0	137.6	148.7	155.7	155.3	140.3	116.0	93.9	86.0
90°	97.9	100.0	118.8	137.5	148.3	155.6	155.3	140.3	115.7	93.4	85.5
95°	99.5	101.4	118.7	136.8	147.3	154.6	154.4	139.9	115.5	93.3	84.5
105°	111.1	111.9	122.1	135.6	145.2	151.6	151.5	138.1	115.4	94.6	85.9
115°	117.3	118.0	124.6	132.8	139.3	145.2	144.2	133.7	113.6	94.8	86.7
125°	117.0	117.2	120.8	125.6	130.4	133.5	132.0	123.1	105.3	86.7	81.1
135°	112.1	111.6	112.1	115.2	116.5	119.5	116.7	109.3	93.9	77.8	70.7
145°	99.5	99.7	100.4	100.9	102.2	103.0	101.7	94.3	82.1	65.8	59.8
155°	88.0	85.9	85.5	85.2	83.9	83.2	81.7	75.5	65.3	54.4	48.1
165°	56.0	50.6	52.9	54.6	56.0	52.7	51.9	47.8	43.2	34.4	32.8
175°	15.2	13.5	11.4	12.9	12.5	12.7	14.5	13.0	10.7	10.5	7.6
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7
5°	23.6	22.9	22.4	21.4	21.4	21.1	20.8	20.9	19.9	20.8
15°	33.0	27.0	21.8	17.1	14.5	13.3	12.2	11.4	11.5	10.9
25°	46.5	36.8	25.9	15.2	8.2	6.3	5.1	4.4	4.3	4.0
35°	59.5	46.8	30.5	15.3	4.6	2.3	1.3	0.8	0.5	0.7
45°	70.7	55.5	35.9	16.5	2.5	0.0	0.0	0.0	0.0	0.0
50°	76.0	59.5	37.7	16.6	1.8	0.0	0.0	0.0	0.0	0.0
55°	79.4	62.3	38.6	16.3	1.3	0.0	0.0	0.0	0.0	0.0
60°	81.6	63.9	38.1	15.5	1.0	0.0	0.0	0.0	0.0	0.0
62.5°	83.2	64.3	37.7	14.8	1.0	0.0	0.0	0.0	0.0	0.0
65°	85.0	64.6	37.2	14.3	0.8	0.0	0.0	0.0	0.0	0.0
67.5°	85.7	64.9	36.6	13.5	0.8	0.0	0.0	0.0	0.0	0.0
70°	85.9	64.9	35.9	12.9	0.8	0.0	0.0	0.0	0.0	0.0
72.5°	85.7	64.6	35.3	12.0	0.7	0.0	0.0	0.0	0.0	0.0
75°	85.2	63.5	34.6	11.4	0.7	0.0	0.0	0.0	0.0	0.0
77.5°	84.2	62.6	33.6	10.9	0.7	0.0	0.0	0.0	0.0	0.0
80°	83.4	61.5	32.6	10.2	0.7	0.0	0.0	0.0	0.0	0.0
82.5°	82.6	60.8	31.8	10.1	0.5	0.0	0.0	0.0	0.0	0.0
85°	81.6	60.0	31.3	9.7	0.5	0.0	0.0	0.0	0.0	0.0
87.5°	81.1	59.8	31.1	9.7	0.5	0.0	0.0	0.0	0.0	0.0
90°	80.8	59.7	31.3	10.1	0.5	0.0	0.0	0.0	0.0	0.0
95°	80.1	60.0	32.1	10.4	0.7	0.0	0.0	0.0	0.0	0.0
105°	80.4	63.6	36.3	13.0	1.0	0.0	0.0	0.0	0.0	0.0
115°	79.9	64.4	39.7	16.8	2.0	0.0	0.0	0.0	0.0	0.0
125°	74.7	59.7	40.4	19.3	3.3	0.0	0.0	0.0	0.0	0.0
135°	65.6	52.4	36.1	18.5	4.0	0.0	0.0	0.0	0.0	0.0
145°	53.4	42.4	30.0	16.3	4.4	0.3	0.0	0.0	0.0	0.0
155°	43.0	33.0	24.2	14.0	5.4	2.1	1.8	1.5	0.8	0.7
165°	28.5	22.9	16.3	10.7	6.3	4.0	3.3	2.8	2.1	2.0
175°	7.3	7.1	4.1	3.0	1.8	0.8	0.8	0.3	0.3	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)