

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: 766689

Luminaire Tested: **QDBW-28xxxx**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: 766689
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: QDBW-28xxxx
Description: FAIL-SAFE WHITE BRICK
Light Source: #038 - PHILIPS PL-C 15mm/28W/27 1600 LUMENS
TOTAL INPUT WATTS = 31 AT 120 VOLTS
Ballast/Driver: ONE ROBERTSON #028C

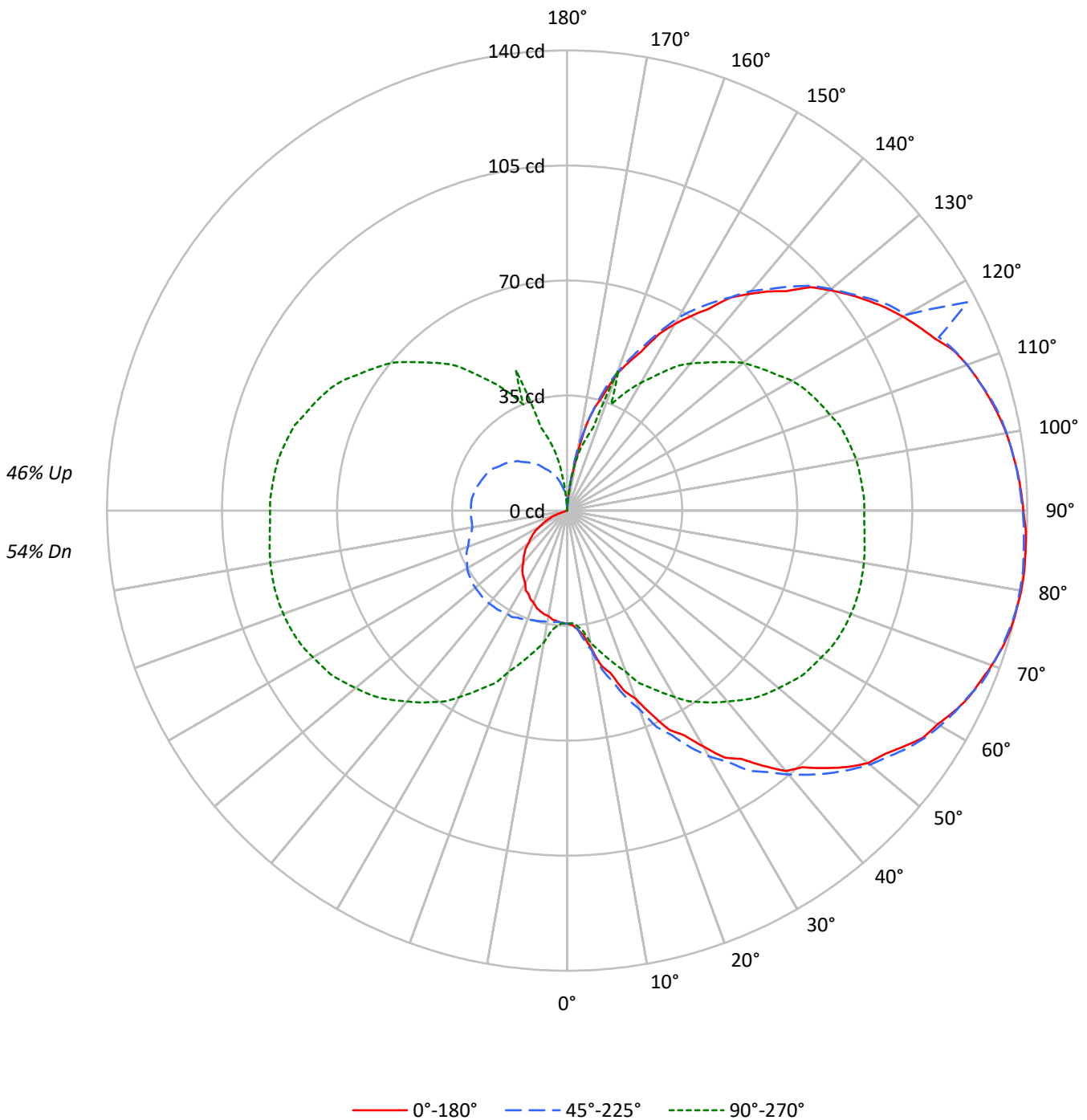
Summary

Lumens per Lamp: 1600 (1 lamp)
Luminaire Lumens: 866.3 lumens
Efficiency: 54.1%
Efficacy: 30.9 lumens/watt
Spacing Criteria (0/90/45): 2.44 / 2.79 / 2.72
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	59	59	59	59	54	54	54	54	46	46	46	39	39	39	32	32	32	29
1	51	47	44	41	46	43	41	38	36	34	32	30	28	27	24	23	22	19
2	45	40	35	31	41	36	32	29	30	27	24	25	22	20	20	18	16	14
3	40	34	29	25	37	31	27	23	26	22	19	21	18	16	17	14	13	10
4	37	29	24	20	33	27	22	19	22	19	16	18	15	13	14	12	10	8
5	33	26	21	17	30	24	19	15	20	16	13	16	13	11	13	10	8	6
6	30	23	18	14	28	21	16	13	17	14	11	14	11	9	11	9	7	5
7	28	20	16	12	26	19	14	11	16	12	9	13	10	8	10	8	6	4
8	26	18	14	10	24	17	13	10	14	11	8	12	9	7	9	7	5	4
9	24	17	12	9	22	15	11	8	13	9	7	11	8	6	8	6	5	3
10	22	15	11	8	20	14	10	7	12	9	6	10	7	5	8	6	4	3

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°	3.5	0.4	0.2	0°	34	34	34	34	34	
10°-20°	12.7	1.5	0.8	5°	36	36	35	34	34	4
20°-30°	25.7	3.0	1.6	15°	51	54	46	35	32	15
30°-40°	41.1	4.7	2.6	25°	74	75	59	36	28	34
40°-50°	56.9	6.6	3.6	35°	92	97	71	37	24	59
50°-60°	70.9	8.2	4.4	45°	111	113	81	37	18	86
60°-70°	81.3	9.4	5.1	55°	125	126	87	36	13	112
70°-80°	86.9	10.0	5.4	65°	135	134	91	34	6	133
80°-90°	89.1	10.3	5.6	75°	140	139	92	31	0	147
90°-100°	87.9	10.2	5.5	85°	140	139	91	29	0	114
100°-110°	82.6	9.5	5.2	90°	139	139	90	29	0	76
110°-120°	73.2	8.5	4.6	95°	138	137	90	29	0	112
120°-130°	59.3	6.9	3.7	105°	133	133	88	28	0	141
130°-140°	44.1	5.1	2.8	115°	124	125	82	27	0	123
140°-150°	28.8	3.3	1.8	125°	112	112	74	24	0	100
150°-160°	15.6	1.8	1.0	135°	94	96	64	21	0	74
160°-170°	5.9	0.7	0.4	145°	75	77	52	17	0	48
170°-180°	0.6	0.1	0.0	155°	53	55	38	14	0	25
0°-30°	41.9	4.8	2.6	165°	32	33	23	10	0	9
0°-40°	83.0	9.6	5.2	175°	5	4	5	4	0	1
0°-60°	210.8	24.3	13.2	180°	0	0	0	0	0	
0°-90°	468.1	54.0	29.3							
90°-120°	243.8	28.1	15.2							
90°-150°	376.0	43.4	23.5							
90°-180°	398.0	45.9	24.9							
0°-180°	866.3	100.0	54.1							



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4	34.4
2.5°	34.8	34.6	34.6	34.5	34.3	34.3	34.2	34.0	34.2
5°	36.3	36.3	36.2	36.0	35.2	34.8	34.0	33.8	33.8
7.5°	38.2	39.3	39.7	38.7	36.9	35.7	34.2	33.5	33.5
10°	42.8	43.2	43.3	41.8	40.7	37.4	34.3	33.1	32.6
12.5°	48.4	47.7	49.7	46.4	43.3	39.0	34.5	32.3	32.3
15°	51.2	53.9	54.0	51.1	46.1	41.1	34.8	31.8	31.7
17.5°	57.4	59.1	59.6	55.4	49.2	43.0	34.9	31.0	31.0
20°	60.9	64.3	64.3	59.5	52.2	44.9	35.4	30.3	29.8
22.5°	67.1	69.5	71.3	63.5	56.7	47.2	35.7	29.2	29.2
25°	73.6	74.5	75.4	69.4	59.3	48.7	35.9	28.3	27.9
27.5°	77.0	81.0	81.2	73.7	62.4	51.2	36.5	27.6	27.3
30°	82.9	85.7	86.3	77.3	65.5	52.8	36.3	26.4	25.5
32.5°	89.1	89.3	90.5	82.0	68.8	54.8	36.5	24.8	24.5
35°	92.2	93.9	96.6	86.6	71.1	56.4	36.8	23.9	23.6
37.5°	97.8	98.3	100.3	90.0	73.6	58.2	36.8	22.8	22.4
40°	103.4	103.5	104.8	93.3	75.8	59.5	36.9	21.7	20.8
42.5°	105.9	107.3	109.0	97.2	78.2	60.7	36.9	20.0	19.6
45°	110.8	111.0	113.0	100.9	80.6	62.1	36.8	18.9	18.3
47.5°	115.5	114.4	116.7	103.7	82.4	63.3	36.6	17.9	17.1
50°	119.5	117.7	120.3	106.2	84.0	64.3	36.5	16.6	15.2
52.5°	121.7	121.4	123.0	109.3	85.7	65.0	36.3	15.1	14.0
55°	125.1	123.3	126.2	111.9	87.4	65.7	35.9	13.5	12.7
57.5°	128.5	125.7	128.9	113.9	88.3	66.4	35.6	12.3	11.5
60°	130.1	128.1	131.0	115.8	89.3	66.8	35.1	10.7	9.3
62.5°	132.6	130.2	132.9	117.7	90.4	67.1	34.3	9.2	8.1
65°	134.7	132.1	134.4	119.1	91.1	67.2	33.8	7.8	6.5
67.5°	136.0	133.4	136.6	120.5	91.6	67.2	33.1	5.9	5.0
70°	137.5	134.6	137.7	121.4	91.9	67.2	32.1	4.7	2.8
72.5°	138.8	135.7	138.6	122.0	92.1	66.9	31.4	0.0	0.0
75°	139.7	136.3	139.3	122.6	92.1	66.6	30.6	0.0	0.0
77.5°	140.0	136.6	139.9	123.0	91.9	66.1	29.8	0.0	0.0
80°	140.3	136.8	139.9	123.0	91.7	65.8	29.3	0.0	0.0
82.5°	140.3	136.8	139.9	122.6	91.3	65.5	29.2	0.0	0.0
85°	140.0	136.5	139.4	122.5	90.8	65.4	29.3	0.0	0.0
87.5°	139.7	136.0	139.1	121.9	90.5	65.4	29.3	0.0	0.0
90°	138.8	135.2	138.6	121.6	90.4	65.4	29.3	0.0	0.0
92.5°	138.2	134.4	138.0	121.2	90.4	65.4	29.3	0.0	0.0
95°	137.5	133.8	137.4	120.9	90.0	65.2	29.3	0.0	0.0
97.5°	136.6	133.0	136.6	120.3	89.7	64.9	29.2	0.0	0.0
100°	135.7	131.8	135.8	119.7	89.3	64.4	28.9	0.0	0.0
102.5°	134.4	130.7	134.7	118.6	88.5	64.0	28.6	0.0	0.0
105°	132.9	129.3	133.2	117.2	87.7	63.3	28.4	0.0	0.0
107.5°	131.3	127.8	131.2	116.0	86.8	62.4	27.9	0.0	0.0
110°	129.5	126.1	129.6	114.3	85.1	61.5	27.6	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	127.3	123.6	127.5	112.1	83.8	60.7	27.2	0.0	0.0
115°	123.6	121.9	124.8	109.4	82.4	59.6	26.9	0.0	0.0
117.5°	120.8	119.4	137.2	107.4	80.9	57.9	26.2	0.0	0.0
120°	118.0	116.7	119.1	104.9	79.0	56.7	25.8	0.0	0.0
122.5°	114.9	113.6	116.3	101.7	76.4	55.3	24.8	0.0	0.0
125°	111.5	109.8	112.4	98.9	74.2	53.7	24.2	0.0	0.0
127.5°	108.0	106.3	108.4	95.3	72.0	52.3	23.6	0.0	0.0
130°	104.3	102.8	104.8	92.1	69.9	50.0	22.8	0.0	0.0
132.5°	100.6	98.9	101.2	88.8	66.9	48.0	22.0	0.0	0.0
135°	94.4	94.9	96.4	84.5	63.8	46.1	21.3	0.0	0.0
137.5°	90.4	90.5	91.4	80.9	61.0	43.9	20.0	0.0	0.0
140°	86.0	85.1	87.2	76.1	58.4	42.1	19.2	0.0	0.0
142.5°	81.7	80.4	81.8	72.2	55.6	39.4	18.3	0.0	0.0
145°	74.8	75.4	77.3	68.2	51.7	37.3	17.4	0.0	0.0
147.5°	70.2	71.7	72.7	62.9	48.0	34.9	16.6	0.0	0.0
150°	65.5	66.8	67.8	58.5	44.9	32.1	15.4	0.0	0.0
152.5°	60.5	60.4	61.6	54.2	41.6	29.7	14.3	0.0	0.0
155°	53.4	55.0	55.3	48.7	38.3	27.5	13.5	0.0	0.0
157.5°	48.7	49.4	50.0	44.1	34.9	24.4	12.4	0.0	0.0
160°	44.1	43.8	44.6	39.4	45.5	22.0	11.6	0.0	0.0
162.5°	36.9	38.3	39.4	33.8	26.5	19.7	10.7	0.0	0.0
165°	32.3	32.8	32.6	29.0	23.1	17.2	9.5	0.0	0.0
167.5°	26.4	26.2	26.2	24.2	19.6	14.4	8.1	0.0	0.0
170°	15.8	18.9	20.0	18.6	15.5	11.2	7.0	0.0	0.0
172.5°	9.9	11.2	12.0	12.1	10.2	7.9	5.7	0.0	0.0
175°	5.0	4.3	3.9	4.0	4.7	4.8	4.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.5	1.9	1.2	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)