

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: 766688

Luminaire Tested: **QDBC-28xxxx**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: 766688
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: QDBC-28xxxx
Description: FAIL-SAFE CLEAR BRICK
Light Source: #038 - PHILIPS PL-C 15mm/28W/27 1600 LUMENS
TOTAL INPUT WATTS = 31 AT 120 VOLTS
Ballast/Driver: ONE ROBERTSON #028C

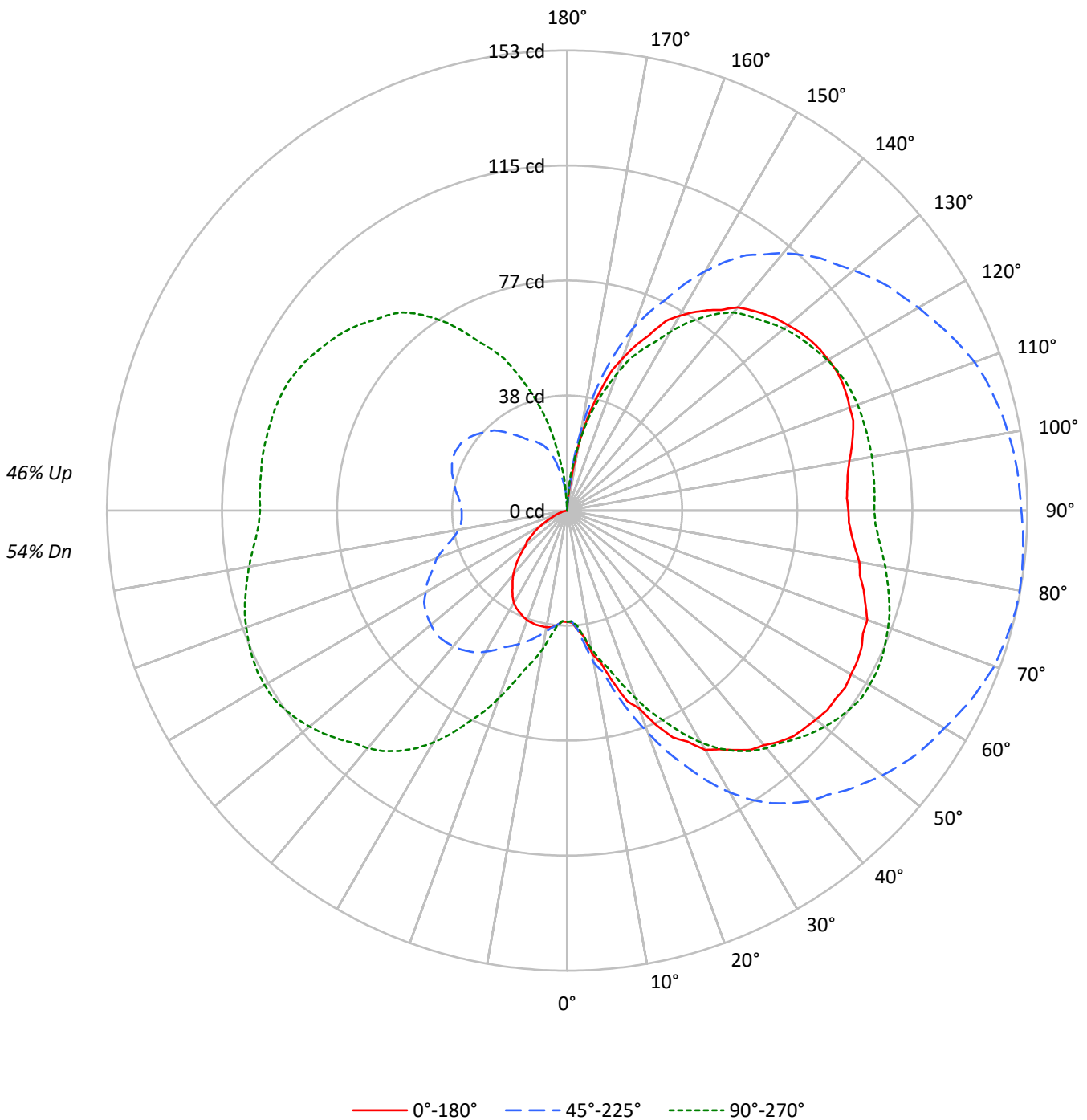
Summary

Lumens per Lamp: 1600 (1 lamp)
Luminaire Lumens: 1012.5 lumens
Efficiency: 63.3%
Efficacy: 36.2 lumens/watt
Spacing Criteria (0/90/45): 2.26 / 3.1 / 2.85
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	68	68	68	68	63	63	63	63	54	54	54	46	46	46	38	38	38	34
1	59	55	52	48	55	51	48	45	43	40	38	35	34	32	29	27	26	22
2	53	47	41	37	48	43	38	34	36	32	29	29	27	24	23	21	19	16
3	47	40	34	30	43	37	32	27	31	27	23	25	22	19	20	17	15	13
4	43	35	29	24	39	32	26	22	27	22	19	22	18	16	17	14	12	10
5	39	30	24	20	36	28	23	19	23	19	16	19	16	13	15	12	10	8
6	36	27	21	17	33	25	20	16	21	16	13	17	13	11	13	11	9	7
7	33	24	18	14	30	22	17	13	19	14	11	15	12	9	12	9	7	6
8	30	22	16	12	28	20	15	12	17	13	10	14	10	8	11	8	6	5
9	28	20	14	11	26	18	13	10	15	11	9	13	9	7	10	7	6	4
10	26	18	13	10	24	17	12	9	14	10	8	12	8	6	9	7	5	4

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°	3.9	0.4	0.2	0°	37	37	37	37	37	
10°-20°	15.4	1.5	1.0	5°	40	40	38	38	38	4
20°-30°	32.9	3.3	2.1	15°	59	63	55	44	39	17
30°-40°	52.9	5.2	3.3	25°	83	94	78	50	37	38
40°-50°	70.5	7.0	4.4	35°	97	119	98	57	32	61
50°-60°	84.9	8.4	5.3	45°	106	132	107	60	23	82
60°-70°	93.4	9.2	5.8	55°	109	142	115	58	14	98
70°-80°	95.8	9.5	6.0	65°	108	148	116	50	6	107
80°-90°	94.9	9.4	5.9	75°	102	152	111	40	2	108
90°-100°	93.9	9.3	5.9	85°	95	152	104	35	0	78
100°-110°	91.1	9.0	5.7	90°	94	151	102	35	0	51
110°-120°	83.9	8.3	5.2	95°	94	150	102	36	0	77
120°-130°	71.6	7.1	4.5	105°	98	147	103	39	0	104
130°-140°	56.2	5.6	3.5	115°	101	140	102	42	0	100
140°-150°	39.2	3.9	2.5	125°	99	130	97	41	0	88
150°-160°	22.3	2.2	1.4	135°	92	119	90	37	0	72
160°-170°	8.7	0.9	0.5	145°	81	104	78	31	0	51
170°-180°	0.9	0.1	0.1	155°	64	77	59	26	0	30
0°-30°	52.2	5.2	3.3	165°	40	48	36	19	0	12
0°-40°	105.1	10.4	6.6	175°	5	5	10	7	0	1
0°-60°	260.5	25.7	16.3	180°	0	0	0	0	0	
0°-90°	544.6	53.8	34.0							
90°-120°	268.9	26.6	16.8							
90°-150°	436.0	43.1	27.3							
90°-180°	468.0	46.2	29.3							
0°-180°	1012.5	100.0	63.3							



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
2.5°	37.3	37.1	36.9	36.8	36.8	36.8	36.8	36.8	36.9
5°	39.7	39.9	39.6	38.8	38.5	38.0	38.2	38.0	38.2
7.5°	42.2	43.6	44.9	43.0	42.1	40.8	39.3	39.0	39.1
10°	48.4	49.4	51.4	47.3	46.7	44.4	40.8	39.6	39.4
12.5°	51.9	54.0	55.0	54.0	50.8	47.3	42.5	39.7	39.4
15°	59.0	60.9	63.0	61.0	54.8	51.7	44.2	40.1	39.4
17.5°	66.4	67.8	70.8	68.2	60.5	56.2	45.8	39.7	39.1
20°	69.9	74.8	78.7	75.6	66.3	60.5	47.3	39.7	38.8
22.5°	77.0	81.3	86.6	83.1	72.3	63.6	48.7	39.4	38.2
25°	83.2	87.2	93.9	90.0	77.6	67.5	50.1	38.3	37.3
27.5°	86.6	93.5	101.5	97.5	83.7	71.7	52.3	37.7	36.6
30°	91.9	98.4	108.2	102.6	89.1	75.8	54.2	36.6	35.4
32.5°	94.1	102.6	114.1	109.0	93.8	79.6	56.0	35.4	33.8
35°	97.2	105.6	118.8	114.1	97.6	83.2	57.1	33.7	31.7
37.5°	100.3	107.7	122.6	118.6	100.8	86.6	58.2	32.1	29.8
40°	101.8	110.2	126.1	122.3	103.1	89.9	58.8	30.7	27.9
42.5°	104.3	111.9	128.2	125.6	104.9	93.0	59.5	29.0	25.5
45°	106.2	114.3	131.5	128.9	107.4	95.9	59.8	26.9	23.3
47.5°	107.1	116.4	134.1	132.0	109.8	98.0	59.8	24.8	20.5
50°	108.0	118.4	136.9	135.2	111.8	100.4	59.1	22.5	18.0
52.5°	109.0	120.0	139.3	138.0	113.5	101.8	58.4	20.2	16.8
55°	109.0	121.1	141.6	139.9	114.9	103.2	57.6	17.7	14.3
57.5°	109.6	122.5	143.3	142.5	116.0	104.3	56.4	15.5	12.4
60°	109.0	123.0	144.8	144.1	116.1	104.2	54.3	12.9	10.2
62.5°	108.7	123.4	146.5	145.8	116.1	104.0	52.5	10.7	8.1
65°	108.0	123.6	148.4	147.3	115.5	103.2	50.1	8.5	6.2
67.5°	106.5	123.4	149.7	148.3	114.6	101.8	47.8	6.8	4.7
70°	106.2	123.6	151.2	149.2	113.6	100.3	46.1	5.3	3.7
72.5°	104.0	122.8	151.7	149.3	112.4	97.6	43.2	3.6	2.2
75°	102.1	122.6	152.3	149.2	110.8	95.6	40.4	2.6	1.9
77.5°	99.7	122.3	152.8	148.7	109.1	93.0	38.2	0.0	0.0
80°	98.7	122.3	152.8	148.4	107.4	90.7	36.6	0.0	0.0
82.5°	96.6	122.3	152.6	147.3	105.6	89.1	35.7	0.0	0.0
85°	95.0	122.3	152.1	146.2	103.9	87.7	35.2	0.0	0.0
87.5°	93.8	122.3	151.7	145.3	102.6	87.1	35.1	0.0	0.0
90°	93.5	122.0	151.0	144.5	102.1	87.2	35.1	0.0	0.0
92.5°	93.1	121.9	150.6	144.4	102.3	87.6	35.4	0.0	0.0
95°	93.5	121.4	150.3	143.9	102.5	88.0	35.9	0.0	0.0
97.5°	94.1	120.8	149.7	143.3	102.6	88.6	36.6	0.0	0.0
100°	95.3	120.0	148.9	142.7	102.9	89.6	37.6	0.0	0.0
102.5°	96.9	119.4	148.1	142.0	102.9	90.7	38.3	0.0	0.0
105°	98.4	118.6	146.9	140.8	102.9	91.6	39.1	0.0	0.0
107.5°	99.7	118.3	145.8	139.7	102.9	92.2	40.1	0.0	0.0
110°	100.0	117.8	144.2	138.2	102.8	92.5	40.8	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°	100.6	117.4	142.0	136.5	102.5	92.7	41.4	0.0	0.0
115°	100.9	116.7	139.7	134.4	102.0	91.9	41.8	0.0	0.0
117.5°	100.9	115.5	137.2	132.7	101.1	91.1	42.1	0.0	0.0
120°	100.3	113.9	134.9	130.2	100.0	89.9	41.9	0.0	0.0
122.5°	99.7	112.1	132.3	127.5	98.6	88.3	41.8	0.0	0.0
125°	98.7	110.1	130.2	125.0	97.2	86.3	41.1	0.0	0.0
127.5°	97.5	107.9	127.3	122.5	95.8	83.8	40.4	0.0	0.0
130°	95.9	105.6	124.3	119.5	94.1	80.9	39.4	0.0	0.0
132.5°	94.4	102.9	121.2	116.6	92.1	77.5	38.3	0.0	0.0
135°	92.5	100.9	118.8	113.3	89.9	74.1	37.1	0.0	0.0
137.5°	90.4	98.6	115.3	110.7	88.2	70.9	36.2	0.0	0.0
140°	88.2	95.6	111.8	107.9	86.0	66.9	34.5	0.0	0.0
142.5°	84.1	92.5	107.3	103.5	82.6	62.7	32.6	0.0	0.0
145°	81.3	89.1	103.7	98.1	78.4	58.5	30.9	0.0	0.0
147.5°	78.2	85.1	98.1	92.2	73.9	55.6	29.2	0.0	0.0
150°	74.8	80.6	91.9	85.7	68.6	51.9	27.5	0.0	0.0
152.5°	71.1	76.5	85.1	78.6	63.2	48.1	26.2	0.0	0.0
155°	64.3	72.0	77.3	71.3	59.0	44.7	25.5	0.0	0.0
157.5°	59.3	65.7	71.4	63.5	54.6	40.8	24.2	0.0	0.0
160°	53.7	58.4	64.9	59.6	48.4	37.7	23.1	0.0	0.0
162.5°	48.4	50.9	56.4	51.7	42.4	33.1	21.4	0.0	0.0
165°	39.7	43.2	47.5	43.9	36.3	29.8	18.8	0.0	0.0
167.5°	32.0	33.7	37.7	35.7	30.1	24.8	16.0	0.0	0.0
170°	22.4	22.2	27.8	26.5	22.7	20.0	12.1	0.0	0.0
172.5°	11.2	14.3	16.8	18.2	15.4	13.4	9.8	0.0	0.0
175°	4.7	4.2	4.7	6.4	10.2	7.9	7.1	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.2	1.1	2.8	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)