

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: METALUX

Report Number: A1616677D001

Luminaire Tested: **22CZRK-LD4-24-UNV-L840-CD1-U**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: A1616677D001
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (A1616677D001)
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 22CZRK-LD4-24-UNV-L840-CD1-U
Description: 2X2 CRUZE LED RETROFIT, 2400 lum, 40K, U
Light Source: 7S7P CCT:4000K CRI:80
PCB_L-PL-A94-03-A-V2.0E lumens3030E©
Ballast/Driver: OSRAM
OPTOTRONIC OTI 30

Summary

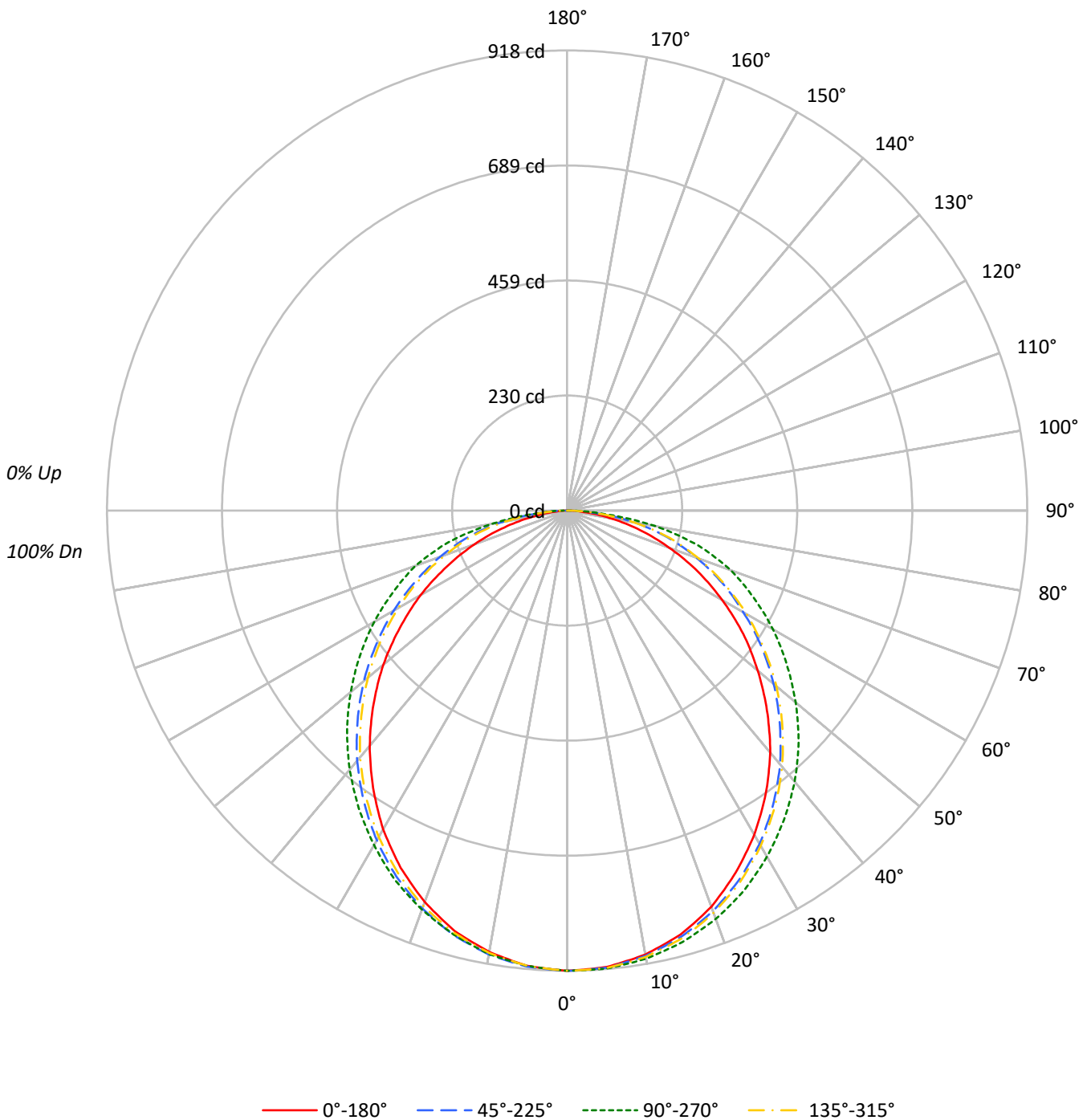
Lumens per Lamp: 2638.539 (1 lamp)
Luminaire Lumens: 2638.5 lumens
Efficiency: 100.0%
Efficacy: 115.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.27 / 1.36
Luminous Opening: Rectangular w/ Sides (W: 2' x L: 2' x H: 0.1')
CIE Type: Direct

Input Watts (W): 22.947
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	99	95	106	101	97	93	97	93	90	93	90	88	89	87	85	83
2	98	90	83	77	96	88	81	76	84	79	74	81	76	72	78	74	71	68
3	89	79	70	64	87	77	69	63	74	67	62	71	65	61	69	64	60	57
4	82	69	61	54	79	68	60	53	66	58	53	63	57	52	61	56	51	49
5	75	62	53	46	73	61	52	46	59	51	45	57	50	45	55	49	44	42
6	69	56	47	40	67	55	46	40	53	45	40	51	45	39	50	44	39	37
7	64	51	42	35	63	50	41	35	48	41	35	47	40	35	45	39	35	33
8	60	46	38	32	58	45	37	32	44	37	31	43	36	31	42	36	31	29
9	56	42	34	28	55	42	34	28	41	33	28	40	33	28	39	32	28	26
10	52	39	31	26	51	39	31	26	38	31	26	37	30	25	36	30	25	24

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	2471	2471	2471	2471
5°	2458	2466	2452	2452
10°	2436	2458	2421	2433
15°	2406	2449	2386	2406
20°	2366	2438	2336	2383
25°	2311	2425	2281	2359
30°	2255	2409	2217	2327
35°	2192	2393	2142	2300
40°	2125	2381	2065	2275
45°	2043	2367	1980	2250
50°	1961	2351	1891	2228
55°	1878	2342	1782	2210
60°	1769	2350	1672	2201
65°	1654	2359	1523	2197
70°	1501	2399	1365	2227
75°	1320	2384	1137	2156
80°	1053	2156	815	1830
85°	652	1326	428	1061



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	90°	180°	270°	360°	Flux
0°-10°	86.8	3.3	3.3	0°	918	918	918	918	918	
10°-20°	247.6	9.4	9.4	5°	914	917	912	912	914	87
20°-30°	372.4	14.1	14.1	15°	875	891	868	875	875	247
30°-40°	445.1	16.9	16.9	25°	796	836	786	813	796	367
40°-50°	459.6	17.4	17.4	35°	690	754	675	725	690	432
50°-60°	418.9	15.9	15.9	45°	564	653	546	621	564	435
60°-70°	333.1	12.6	12.6	55°	429	535	407	505	429	383
70°-80°	212.6	8.1	8.1	65°	288	410	265	382	288	285
80°-90°	62.5	2.4	2.4	75°	151	272	130	246	151	160
90°-100°	0.0	0.0	0.0	85°	33	68	22	54	33	43
100°-110°	0.0	0.0	0.0	90°	3	2	2	1	3	
110°-120°	0.0	0.0	0.0							
120°-130°	0.0	0.0	0.0							
130°-140°	0.0	0.0	0.0							
140°-150°	0.0	0.0	0.0							
150°-160°	0.0	0.0	0.0							
160°-170°	0.0	0.0	0.0							
170°-180°	0.0	0.0	0.0							
0°-30°	706.8	26.8	26.8							
0°-40°	1151.9	43.7	43.7							
0°-60°	2030.4	77.0	77.0							
0°-90°	2638.5	100.0	100.0							
90°-120°	0.0	0.0	0.0							
90°-150°	0.0	0.0	0.0							
90°-180°	0.0	0.0	0.0							
0°-180°	2638.5	100.0	100.0							



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CANDELA DISTRIBUTION (FULL):

	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°
0°	918.1	918.1	918.1	918.1	918.1	918.1	918.1	918.1	918.1	918.1	918.1
5°	913.8	915.8	914.8	916.9	915.8	915.8	911.7	912.7	913.8	911.7	911.7
10°	899.2	901.3	902.3	907.5	904.4	903.4	894.0	898.2	900.3	898.2	898.2
15°	875.3	878.5	881.6	890.9	886.8	880.5	868.1	873.3	879.5	875.3	875.3
20°	841.1	846.3	854.6	867.0	858.7	849.4	830.7	838.0	851.5	847.3	845.2
25°	796.4	805.8	819.3	835.9	824.5	809.9	786.0	796.4	815.1	813.0	806.8
30°	746.6	758.0	777.7	797.5	781.9	763.2	734.1	747.6	771.5	770.5	763.2
35°	690.5	705.0	727.9	753.8	735.2	709.2	674.9	691.5	723.7	724.8	714.4
40°	630.3	646.9	674.9	706.1	683.2	651.1	612.6	632.4	670.8	674.9	661.4
45°	563.8	582.5	616.8	653.1	626.1	588.8	546.2	569.0	613.7	620.9	602.2
50°	496.3	518.1	557.6	595.0	566.9	523.3	478.7	503.6	555.5	563.8	543.1
55°	428.8	451.7	495.3	534.8	502.6	454.8	407.0	435.1	494.3	504.6	482.8
60°	357.2	382.1	429.9	474.5	439.2	387.3	337.5	367.6	432.0	444.4	418.5
65°	287.6	315.7	366.5	410.2	371.7	319.8	264.8	299.0	367.6	382.1	356.2
70°	217.0	248.2	300.1	346.8	307.4	250.2	197.3	233.6	305.3	321.9	290.7
75°	150.6	183.8	232.6	272.1	239.9	184.8	129.8	169.3	240.9	246.1	227.4
80°	87.2	124.6	149.5	178.6	151.6	119.4	67.5	108.0	155.8	151.6	147.4
85°	33.2	53.0	58.1	67.5	59.2	48.8	21.8	43.6	60.2	54.0	51.9
90°	3.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	1.0	2.1



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CANDELA DISTRIBUTION (continued):

	330°	360°
0°	<i>918.1</i>	<i>918.1</i>
5°	911.7	913.8
10°	894.0	899.2
15°	868.1	875.3
20°	833.8	841.1
25°	789.2	796.4
30°	740.4	746.6
35°	683.2	690.5
40°	623.0	630.3
45°	559.7	563.8
50°	494.3	496.3
55°	425.7	428.8
60°	359.3	357.2
65°	292.8	287.6
70°	225.3	217.0
75°	162.0	150.6
80°	101.8	87.2
85°	41.5	33.2
90°	2.1	3.1

(END OF REPORT)