

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: P685613

Luminaire Tested: **4CZL-16-UNV-FUL-L840-CD-U**

Issue Date: 05/10/2023



Test Information

Test Method: LM-79-08
Report Number: P685613
Test Lab: INNOVATION CENTER(G3)
Issue Date: 05/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 4CZL-16-UNV-FUL-L840-CD-U
Description: METALUX CRUZE LINEAR 4FT FROSTED LENS MODEL WITH UPLIGHT @80 CRI and 4000K
Light Source: (588) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

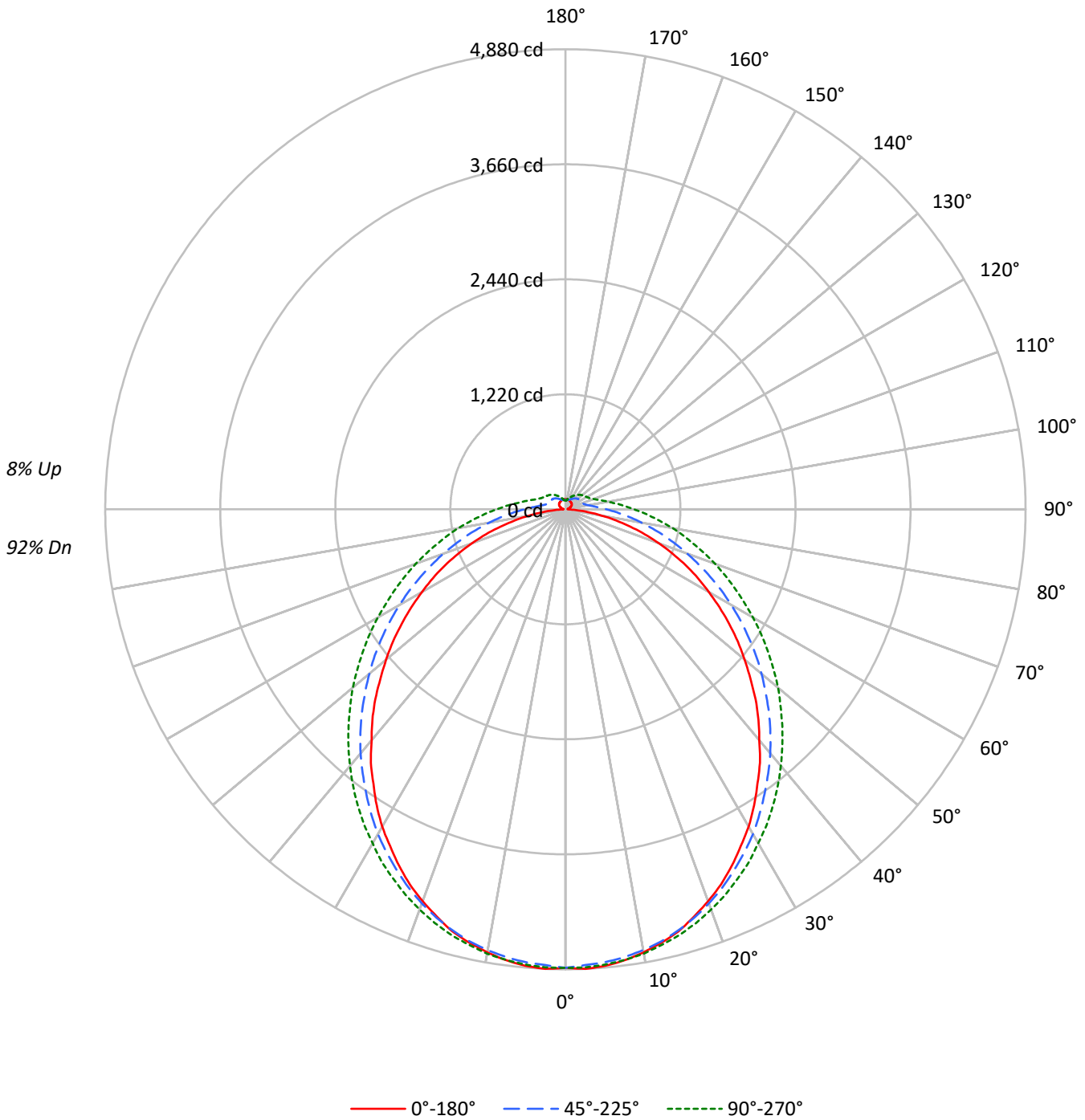
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 15174.7 lumens
Efficiency: N/A
Efficacy: 147.3 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.25 / 1.34
Luminous Opening: Rectangular w/ Sides (W: 0.83' x L: 4' x H: 0.17')
CIE Type: Direct

Input Watts (W): 103
Input Voltage (V): 120
Input Current (A_{in}): 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				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	50	30	10	0
RCR																					
0	117	117	117	117	113	113	113	113	107	107	107	100	100	100	95	95	95	95	95	95	95
1	106	101	96	92	102	98	93	90	92	88	85	87	84	81	82	79	77	77	77	77	75
2	96	87	80	74	93	85	78	73	80	74	70	75	71	67	71	68	64	64	64	64	62
3	87	77	68	61	84	74	67	60	70	64	58	66	61	56	63	58	54	54	54	54	52
4	80	68	59	52	77	66	58	51	62	55	50	59	53	48	56	51	47	47	47	47	44
5	74	61	51	45	71	59	50	44	56	49	43	53	47	42	50	45	41	41	41	41	38
6	68	54	45	39	65	53	45	38	50	43	38	48	42	37	46	40	36	36	36	36	33
7	63	49	41	34	61	48	40	34	46	39	33	44	37	32	42	36	32	32	32	32	30
8	59	45	37	31	57	44	36	30	42	35	30	40	34	29	38	33	28	28	28	28	26
9	55	41	33	28	53	40	33	27	39	32	27	37	31	26	35	30	26	26	26	26	24
10	51	38	30	25	50	37	30	25	36	29	24	34	28	24	33	27	23	23	23	23	22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	15708	15708	15708
5°	15701	15405	15447
10°	15535	15114	15160
15°	15327	14786	14834
20°	14977	14396	14475
25°	14588	13951	14089
30°	14153	13500	13671
35°	13603	12968	13269
40°	13027	12460	12826
45°	12504	11904	12376
50°	11876	11334	11942
55°	11262	10744	11465
60°	10576	10120	11019
65°	9893	9474	10599
70°	8916	8843	10282
75°	7709	8248	10000
80°	6000	7774	10071
85°	3501	7550	10371



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	460.1	3.0
10°-20°	1309.1	8.6
20°-30°	1954.8	12.9
30°-40°	2310.9	15.2
40°-50°	2354.8	15.5
50°-60°	2123.3	14.0
60°-70°	1680.1	11.1
70°-80°	1135.4	7.5
80°-90°	635.0	4.2
90°-100°	345.5	2.3
100°-110°	226.6	1.5
110°-120°	179.8	1.2
120°-130°	152.9	1.0
130°-140°	122.3	0.8
140°-150°	87.5	0.6
150°-160°	56.4	0.4
160°-170°	30.5	0.2
170°-180°	9.5	0.1
0°-30°	3724.1	24.5
0°-40°	6035.0	39.8
0°-60°	10513.1	69.3
0°-90°	13963.6	92.0
90°-120°	751.9	5.0
90°-150°	1114.7	7.3
90°-180°	1211.0	8.0
0°-180°	15174.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4864	4864	4864	4864	4864	
5°	4861	4854	4823	4851	4849	461
15°	4636	4630	4625	4665	4675	1304
25°	4174	4193	4227	4306	4323	1921
35°	3551	3600	3683	3800	3837	2223
45°	2852	2909	3052	3194	3252	2196
55°	2120	2198	2374	2554	2618	1896
65°	1410	1482	1694	1903	1982	1393
75°	714	812	1083	1323	1400	758
85°	140	313	602	836	920	171
90°	22	173	433	647	727	16
95°	23	113	318	508	579	20
105°	40	100	208	328	376	42
115°	62	108	185	254	282	62
125°	83	112	176	228	247	74
135°	92	110	164	204	218	71
145°	96	105	138	174	183	60
155°	102	103	114	143	147	47
165°	106	104	102	107	116	30
175°	107	105	101	89	90	10
180°	100	100	100	100	100	



TEST NUMBER: P685613

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4864.3	4864.3	4864.3	4864.3	4864.3
2.5°	4879.9	4872.1	4839.9	4865.3	4864.3
5°	4861.4	4853.6	4823.3	4850.6	4848.7
7.5°	4825.3	4820.4	4792.1	4822.3	4821.4
10°	4772.6	4772.6	4748.2	4783.3	4786.3
12.5°	4709.2	4708.2	4695.5	4731.6	4731.6
15°	4636.0	4630.2	4625.3	4665.3	4675.1
17.5°	4531.7	4535.6	4544.4	4592.2	4601.9
20°	4424.4	4433.2	4449.7	4506.3	4519.0
22.5°	4309.3	4319.0	4345.4	4406.8	4427.3
25°	4173.7	4193.2	4227.4	4306.4	4322.9
27.5°	4027.4	4061.5	4105.4	4189.3	4217.6
30°	3886.9	3914.3	3977.7	4065.4	4089.8
32.5°	3725.0	3758.2	3832.3	3937.7	3970.8
35°	3551.4	3600.2	3683.1	3800.1	3837.2
37.5°	3389.5	3428.5	3530.9	3655.8	3699.7
40°	3198.3	3261.7	3379.7	3502.6	3553.4
42.5°	3030.6	3085.2	3217.8	3353.4	3406.1
45°	2852.1	2908.6	3052.0	3194.4	3252.0
47.5°	2660.9	2728.2	2881.3	3040.3	3094.0
50°	2481.4	2551.6	2715.5	2876.4	2943.7
52.5°	2304.9	2378.0	2547.7	2717.4	2779.9
55°	2119.5	2198.5	2374.1	2553.6	2618.0
57.5°	1938.1	2017.1	2204.4	2389.7	2459.0
60°	1755.7	1829.8	2030.8	2221.0	2297.1
62.5°	1585.0	1657.2	1864.0	2068.8	2135.1
65°	1410.4	1481.6	1694.3	1903.0	1982.0
67.5°	1230.0	1315.8	1529.4	1747.9	1831.8
70°	1052.5	1140.2	1376.3	1603.5	1687.4
72.5°	884.7	984.2	1222.2	1454.3	1540.1
75°	714.0	812.5	1082.7	1322.6	1399.7
77.5°	553.0	668.1	946.1	1188.0	1278.7
80°	398.9	529.6	823.2	1060.3	1155.8
82.5°	262.4	411.6	709.1	944.2	1030.0
85°	139.5	313.1	601.8	835.9	919.8
87.5°	54.6	232.1	512.1	737.4	821.3
90°	21.5	172.6	433.1	646.7	726.7
92.5°	21.5	134.6	368.7	573.5	648.6
95°	23.4	113.1	318.0	508.2	579.4
97.5°	25.4	102.4	278.0	450.6	514.0
100°	29.3	98.5	247.8	403.8	461.4
102.5°	34.1	98.5	223.4	360.9	415.5
105°	40.0	100.5	207.8	327.7	376.5
107.5°	44.9	102.4	197.0	300.4	344.3
110°	50.7	105.3	191.2	279.9	318.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	56.6	107.3	187.3	265.3	298.5
115°	62.4	108.3	185.3	253.6	281.9
117.5°	68.3	110.2	183.4	245.8	270.2
120°	74.1	111.2	181.4	239.9	261.4
122.5°	79.0	111.2	179.5	234.1	253.6
125°	82.9	112.2	176.5	228.2	246.8
127.5°	85.8	113.1	174.6	222.4	239.0
130°	88.8	112.2	171.7	216.5	232.1
132.5°	90.7	111.2	167.8	210.7	225.3
135°	91.7	110.2	163.9	203.9	217.5
137.5°	92.7	109.2	158.0	197.0	209.7
140°	92.7	108.3	151.2	189.2	200.9
142.5°	93.6	106.3	144.4	181.4	192.2
145°	95.6	105.3	137.5	173.6	183.4
147.5°	97.5	103.4	131.7	164.8	173.6
150°	99.5	103.4	125.8	157.0	164.8
152.5°	100.5	103.4	120.0	150.2	156.1
155°	102.4	103.4	114.1	143.4	147.3
157.5°	103.4	103.4	110.2	134.6	138.5
160°	104.4	104.4	106.3	124.9	130.7
162.5°	106.3	104.4	104.4	115.1	122.9
165°	106.3	104.4	102.4	107.3	116.1
167.5°	107.3	105.3	101.4	101.4	110.2
170°	107.3	105.3	101.4	96.6	101.4
172.5°	107.3	105.3	101.4	92.7	94.6
175°	107.3	105.3	101.4	88.8	89.7
177.5°	107.3	105.3	100.5	85.8	89.7
180°	99.5	99.5	99.5	99.5	99.5

(END OF REPORT)