

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: P685603

Luminaire Tested: **4CZL-16-UNV-FUL-L835-CD-U**

Issue Date: 05/10/2023



**Test Information**

Test Method: LM-79-08  
Report Number: P685603  
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-L835-CD-U  
Description: METALUX CRUZE LINEAR 4FT FROSTED LENS MODEL WITH UPLIGHT @80 CRI and 3500K  
Light Source: (588) 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

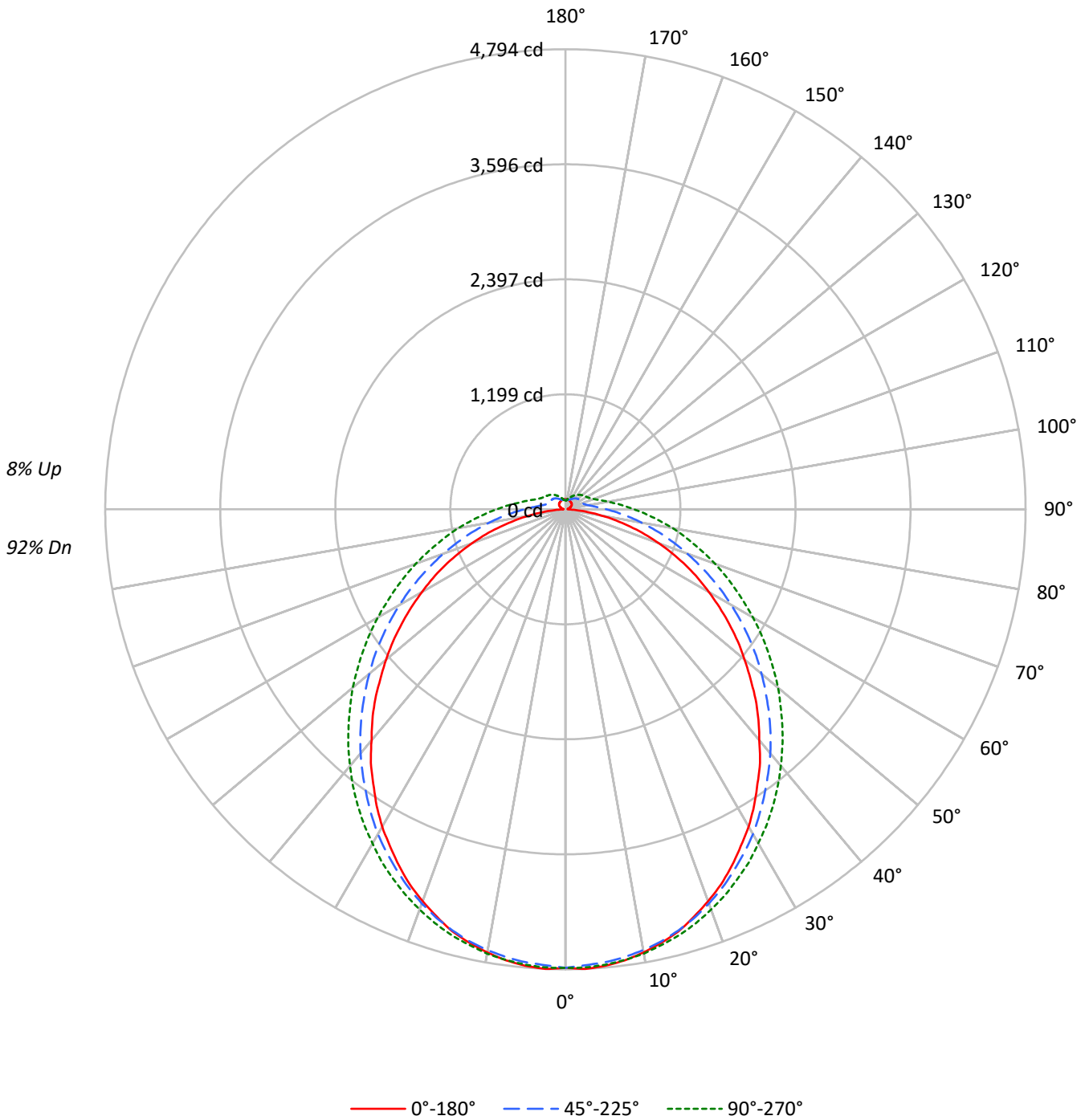
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 14909.2 lumens  
Efficiency: N/A  
Efficacy: 144.7 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<sub>in</sub>): 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	117	117	117	117	113	113	113	113	107	107	107	100	100	100	95	95	95	92
1	106	101	96	92	102	98	93	90	92	88	85	87	84	81	82	79	77	75
2	96	87	80	74	93	85	78	73	80	74	70	75	71	67	71	68	64	62
3	87	77	68	61	84	74	67	60	70	64	58	66	61	56	63	58	54	52
4	80	68	59	52	77	66	58	51	62	55	50	59	53	48	56	51	47	44
5	74	61	51	45	71	59	50	44	56	49	43	53	47	42	50	45	41	38
6	68	54	45	39	65	53	45	38	50	43	38	48	42	37	46	40	36	33
7	63	49	41	34	61	48	40	34	46	39	33	44	37	32	42	36	32	30
8	59	45	37	31	57	44	36	30	42	35	30	40	34	29	38	33	28	26
9	55	41	33	28	53	40	33	27	39	32	27	37	31	26	35	30	26	24
10	51	38	30	25	50	37	30	25	36	29	24	34	28	24	33	27	23	22

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	15433	15433	15433
5°	15426	15135	15176
10°	15263	14849	14894
15°	15059	14527	14575
20°	14715	14144	14222
25°	14332	13706	13842
30°	13905	13263	13432
35°	13365	12740	13036
40°	12799	12242	12602
45°	12285	11695	12159
50°	11668	11136	11733
55°	11065	10556	11263
60°	10391	9943	10826
65°	9720	9308	10413
70°	8760	8688	10102
75°	7574	8103	9825
80°	5896	7638	9895
85°	3438	7418	10189



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	452.1	3.0
10°-20°	1286.2	8.6
20°-30°	1920.6	12.9
30°-40°	2270.4	15.2
40°-50°	2313.6	15.5
50°-60°	2086.2	14.0
60°-70°	1650.7	11.1
70°-80°	1115.6	7.5
80°-90°	623.9	4.2
90°-100°	339.5	2.3
100°-110°	222.7	1.5
110°-120°	176.6	1.2
120°-130°	150.3	1.0
130°-140°	120.2	0.8
140°-150°	86.0	0.6
150°-160°	55.4	0.4
160°-170°	29.9	0.2
170°-180°	9.4	0.1
0°-30°	3658.9	24.5
0°-40°	5929.4	39.8
0°-60°	10329.1	69.3
0°-90°	13719.3	92.0
90°-120°	738.8	5.0
90°-150°	1095.2	7.3
90°-180°	1190.0	8.0
0°-180°	14909.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4779	4779	4779	4779	4779	
5°	4776	4769	4739	4766	4764	453
15°	4555	4549	4544	4584	4593	1281
25°	4101	4120	4153	4231	4247	1887
35°	3489	3537	3619	3734	3770	2184
45°	2802	2858	2999	3138	3195	2158
55°	2082	2160	2333	2509	2572	1863
65°	1386	1456	1665	1870	1947	1368
75°	702	798	1064	1300	1375	745
85°	137	308	591	821	904	168
90°	21	170	426	635	714	16
95°	23	111	312	499	569	20
105°	39	99	204	322	370	41
115°	61	106	182	249	277	61
125°	82	110	174	224	242	72
135°	90	108	161	200	214	70
145°	94	104	135	171	180	59
155°	101	102	112	141	145	46
165°	104	102	101	105	114	30
175°	105	104	100	87	88	10
180°	98	98	98	98	98	

TEST NUMBER: P685603

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4779.2	4779.2	4779.2	4779.2	4779.2
2.5°	4794.5	4786.8	4755.2	4780.1	4779.2
5°	4776.3	4768.6	4738.9	4765.7	4763.8
7.5°	4740.8	4736.0	4708.3	4738.0	4737.0
10°	4689.1	4689.1	4665.1	4699.6	4702.5
12.5°	4626.8	4625.8	4613.4	4648.8	4648.8
15°	4554.9	4549.2	4544.4	4583.7	4593.3
17.5°	4452.4	4456.2	4464.8	4511.8	4521.4
20°	4347.0	4355.6	4371.9	4427.5	4439.9
22.5°	4233.9	4243.5	4269.3	4329.7	4349.8
25°	4100.7	4119.8	4153.4	4231.0	4247.3
27.5°	3956.9	3990.5	4033.6	4116.0	4143.8
30°	3818.9	3845.8	3908.0	3994.3	4018.3
32.5°	3659.8	3692.4	3765.3	3868.8	3901.3
35°	3489.3	3537.2	3618.6	3733.6	3770.1
37.5°	3330.2	3368.5	3469.1	3591.8	3634.9
40°	3142.3	3204.6	3320.6	3441.3	3491.2
42.5°	2977.5	3031.2	3161.5	3294.7	3346.5
45°	2802.1	2857.7	2998.6	3138.5	3195.1
47.5°	2614.3	2680.4	2830.9	2987.1	3039.8
50°	2438.0	2507.0	2668.0	2826.1	2892.2
52.5°	2264.5	2336.4	2503.1	2669.9	2731.2
55°	2082.4	2160.1	2332.6	2508.9	2572.1
57.5°	1904.2	1981.8	2165.8	2347.9	2415.9
60°	1725.0	1797.8	1995.2	2182.1	2256.9
62.5°	1557.3	1628.2	1831.4	2032.6	2097.8
65°	1385.7	1455.7	1664.6	1869.7	1947.3
67.5°	1208.4	1292.8	1502.7	1717.3	1799.7
70°	1034.0	1120.3	1352.2	1575.5	1657.9
72.5°	869.2	966.9	1200.8	1428.9	1513.2
75°	701.5	798.3	1063.7	1299.5	1375.2
77.5°	543.4	656.5	929.6	1167.2	1256.4
80°	392.0	520.4	808.8	1041.7	1135.6
82.5°	257.8	404.4	696.7	927.7	1012.0
85°	137.0	307.6	591.3	821.3	903.7
87.5°	53.7	228.1	503.1	724.5	806.9
90°	21.1	169.6	425.5	635.4	714.0
92.5°	21.1	132.2	362.2	563.5	637.3
95°	23.0	111.2	312.4	499.3	569.2
97.5°	24.9	100.6	273.1	442.7	505.0
100°	28.7	96.8	243.4	396.7	453.3
102.5°	33.5	96.8	219.5	354.6	408.2
105°	39.3	98.7	204.1	322.0	369.9
107.5°	44.1	100.6	193.6	295.2	338.3
110°	49.8	103.5	187.8	275.0	312.4



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	55.6	105.4	184.0	260.7	293.2
115°	61.3	106.4	182.1	249.2	277.0
117.5°	67.1	108.3	180.2	241.5	265.5
120°	72.8	109.2	178.2	235.7	256.8
122.5°	77.6	109.2	176.3	230.0	249.2
125°	81.5	110.2	173.5	224.2	242.5
127.5°	84.3	111.2	171.5	218.5	234.8
130°	87.2	110.2	168.7	212.7	228.1
132.5°	89.1	109.2	164.8	207.0	221.4
135°	90.1	108.3	161.0	200.3	213.7
137.5°	91.0	107.3	155.2	193.6	206.0
140°	91.0	106.4	148.5	185.9	197.4
142.5°	92.0	104.5	141.8	178.2	188.8
145°	93.9	103.5	135.1	170.6	180.2
147.5°	95.8	101.6	129.4	162.0	170.6
150°	97.7	101.6	123.6	154.3	162.0
152.5°	98.7	101.6	117.9	147.6	153.3
155°	100.6	101.6	112.1	140.9	144.7
157.5°	101.6	101.6	108.3	132.2	136.1
160°	102.5	102.5	104.5	122.7	128.4
162.5°	104.5	102.5	102.5	113.1	120.7
165°	104.5	102.5	100.6	105.4	114.0
167.5°	105.4	103.5	99.7	99.7	108.3
170°	105.4	103.5	99.7	94.9	99.7
172.5°	105.4	103.5	99.7	91.0	93.0
175°	105.4	103.5	99.7	87.2	88.2
177.5°	105.4	103.5	98.7	84.3	88.2
180°	97.7	97.7	97.7	97.7	97.7

(END OF REPORT)