

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: io LED

Report Number: P251516

Luminaire Tested: **LD4B10D010 EU4B10209730 4LBSW1LI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251516
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-10)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B10D010 EU4B10209730 4LBSW1LI
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 97CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 739.0 lumens
Efficiency: N/A
Efficacy: 73.5 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.3 / 1.19
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

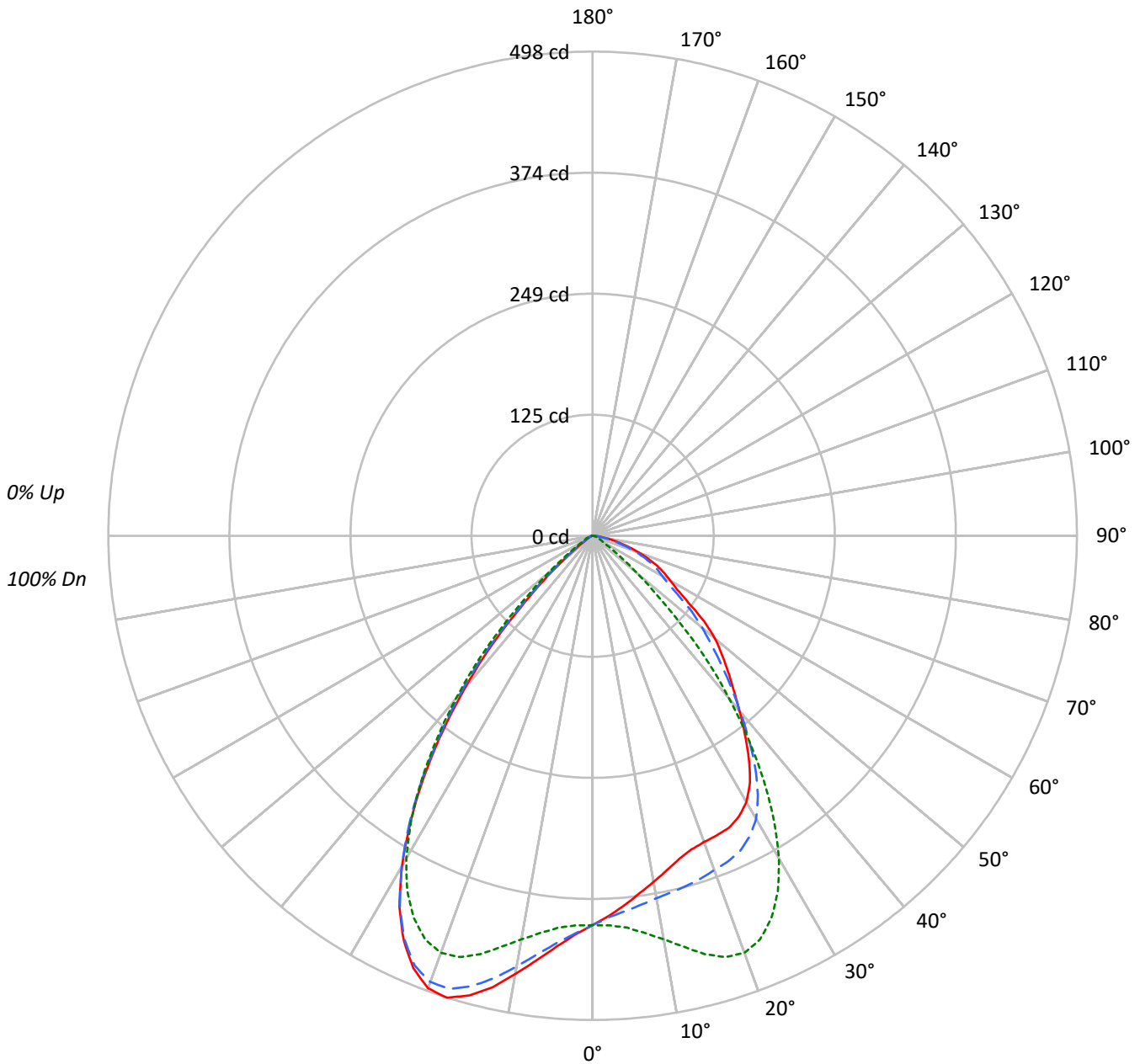
Input Watts (W): 10.05
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																			
1	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90																			
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	85	82	80																			
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72																			
4	91	81	75	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64																			
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58																			
6	79	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53																			
7	75	63	56	51	73	62	55	51	61	55	50	60	54	50	58	53	50	48																			
8	70	58	51	46	69	58	51	46	57	50	46	55	50	46	54	49	45	44																			
9	66	54	47	42	65	54	47	42	53	46	42	52	46	42	51	46	42	40																			
10	62	51	44	39	61	50	43	39	49	43	39	48	43	39	47	42	39	37																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	39032	39032	39032
5°	37283	39582	41480
10°	35755	41702	45265
15°	34708	44939	49368
20°	34754	47334	51348
25°	35647	46712	49411
30°	35595	43123	44125
35°	33337	36454	35954
40°	29859	27798	25941
45°	27097	17656	14486
50°	24896	8961	6186
55°	20424	3993	2039
60°	17932	2242	1131
65°	16880	1683	853
70°	14447	1339	741
75°	11033	979	602
80°	7913	561	281
85°	5815	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	38.9	5.3
10°-20°	121.2	16.4
20°-30°	187.6	25.4
30°-40°	184.8	25.0
40°-50°	113.5	15.4
50°-60°	50.5	6.8
60°-70°	28.2	3.8
70°-80°	12.2	1.7
80°-90°	2.2	0.3
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	347.7	47.1
0°-40°	532.5	72.1
0°-60°	696.4	94.2
0°-90°	739.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	739.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	400	400	400	400	400	
5°	381	387	405	420	424	36
15°	344	373	445	479	489	98
25°	332	358	434	458	460	152
35°	280	292	306	305	302	174
45°	197	187	128	112	105	152
55°	120	109	24	14	12	111
65°	73	66	7	4	4	72
75°	29	25	3	2	2	32
85°	5	4	0	0	0	6
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	400.5	400.5	400.5	400.5	400.5	400.5	400.5	400.5	400.5	400.5	400.5
2.5°	391.1	391.1	391.1	391.1	392.1	390.5	392.1	392.1	393.7	394.2	392.6
5°	381.1	380.6	381.1	381.1	382.2	381.6	383.2	384.3	386.3	387.4	387.4
7.5°	370.7	370.7	370.7	371.7	373.3	372.8	374.3	375.9	379.0	381.1	382.7
10°	361.3	360.7	362.3	362.8	364.4	364.4	367.0	368.6	372.2	376.4	378.5
12.5°	352.4	351.8	352.9	354.5	357.1	357.1	359.2	361.8	367.0	371.7	375.4
15°	344.0	344.5	346.1	347.1	350.3	350.3	352.9	356.0	361.8	367.5	372.8
17.5°	338.2	338.8	339.8	341.4	344.5	344.5	347.1	350.8	357.1	363.3	369.6
20°	335.1	335.6	336.7	338.2	340.9	341.4	343.5	347.7	353.4	360.2	366.0
22.5°	333.5	334.6	335.6	336.7	339.3	339.3	341.9	345.0	350.8	357.6	362.8
25°	331.5	332.5	333.0	334.6	336.7	336.7	338.2	341.9	347.1	352.9	358.1
27.5°	325.7	326.7	327.3	328.8	330.9	330.4	332.5	335.1	339.8	345.0	349.2
30°	316.3	316.8	317.9	318.4	320.0	320.0	321.5	324.1	327.3	332.0	336.2
32.5°	301.1	302.2	302.7	303.2	304.8	304.3	304.8	306.4	309.5	313.7	316.3
35°	280.2	282.3	282.3	283.4	283.9	283.4	283.4	285.4	287.0	290.2	291.7
37.5°	257.2	258.8	258.3	259.3	259.8	258.3	259.3	259.8	261.9	263.5	264.0
40°	234.7	235.3	235.3	235.3	235.3	234.7	235.3	235.8	237.3	237.3	235.8
42.5°	214.3	214.9	214.9	213.8	214.9	214.3	214.3	214.3	214.3	212.3	210.7
45°	196.6	197.1	197.1	196.6	196.6	195.5	195.0	194.5	192.9	190.3	186.6
47.5°	179.8	180.9	181.4	180.4	179.8	178.8	178.8	175.7	173.6	170.4	165.2
50°	164.2	165.2	165.2	164.2	164.2	162.6	161.0	160.0	156.8	153.2	146.9
52.5°	144.3	145.9	145.9	145.3	145.3	143.2	142.7	140.6	138.0	133.8	128.6
55°	120.2	122.3	121.8	121.3	120.2	120.2	120.2	118.7	117.1	114.0	108.7
57.5°	103.0	103.5	103.5	103.0	103.0	101.9	101.9	100.4	99.9	96.7	92.5
60°	92.0	92.0	92.5	92.0	91.5	91.0	90.4	89.4	87.8	85.7	82.6
62.5°	83.1	83.6	83.6	83.1	82.6	82.1	81.6	80.5	79.5	77.9	74.8
65°	73.2	74.2	73.7	73.2	72.7	72.1	72.1	71.1	70.1	69.0	65.9
67.5°	62.2	62.7	63.3	62.2	62.2	61.7	61.7	60.6	60.1	58.0	55.9
70°	50.7	51.2	51.2	50.7	50.7	50.2	50.2	49.7	49.1	47.6	45.5
72.5°	39.7	40.3	39.7	39.2	39.2	39.2	38.7	38.2	37.6	36.6	35.0
75°	29.3	29.3	29.8	29.3	28.8	28.8	28.2	28.2	27.2	26.7	25.1
77.5°	20.9	21.4	20.9	20.9	20.4	19.9	19.9	19.3	19.3	18.8	17.8
80°	14.1	14.1	14.6	14.1	13.6	14.1	13.6	13.1	13.1	12.5	11.5
82.5°	8.9	9.4	8.9	8.9	8.9	8.9	8.9	8.4	8.4	7.8	7.3
85°	5.2	5.2	5.2	5.2	5.2	5.2	5.2	4.7	4.7	4.7	4.2
87.5°	2.6	2.6	2.1	2.1	2.6	2.6	2.6	2.1	2.1	2.1	2.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	400.5	400.5	400.5	400.5	400.5	400.5	400.5	400.5	400.5	400.5	400.5
2.5°	394.7	395.2	396.3	397.8	397.8	396.8	399.4	399.4	400.5	401.0	403.1
5°	390.5	391.6	393.7	396.3	396.8	396.3	399.9	401.5	403.1	404.6	407.8
7.5°	386.9	389.0	392.6	396.3	397.8	397.8	403.6	405.7	408.8	412.0	415.6
10°	384.8	387.9	393.1	398.9	400.5	402.0	408.8	413.0	417.2	421.4	426.6
12.5°	382.2	387.9	394.7	402.0	405.2	407.3	416.7	421.9	427.6	432.9	439.7
15°	381.6	388.4	397.3	406.7	410.9	414.1	424.5	431.8	438.6	445.4	452.2
17.5°	379.6	387.9	398.9	409.3	414.6	418.8	430.8	439.7	447.5	454.3	462.2
20°	376.9	386.3	398.4	409.9	415.6	419.8	432.9	441.2	450.1	456.4	463.7
22.5°	373.3	382.7	394.7	406.2	411.4	415.1	428.2	435.5	443.3	449.6	456.4
25°	367.0	375.9	386.3	395.8	401.0	404.1	415.6	422.4	428.2	434.4	440.7
27.5°	358.1	364.9	373.8	380.6	383.7	386.9	396.3	402.0	407.3	412.5	416.7
30°	342.4	347.7	353.9	359.7	362.8	363.3	372.2	375.4	379.6	383.2	386.3
32.5°	321.5	325.7	329.4	332.5	334.6	335.1	341.9	343.0	347.1	347.1	351.8
35°	294.9	296.9	299.6	299.6	301.1	299.6	304.3	305.3	305.8	306.4	310.0
37.5°	264.5	265.6	267.1	264.0	264.0	262.4	264.0	265.1	263.0	263.0	265.6
40°	235.8	233.7	231.6	228.5	226.9	223.8	223.8	221.1	219.6	218.5	219.1
42.5°	208.1	203.4	198.7	191.9	188.7	185.6	182.5	178.8	177.8	175.1	173.6
45°	181.4	174.6	168.3	157.4	151.1	148.0	141.2	133.8	129.1	128.1	123.9
47.5°	158.9	149.0	138.5	125.5	119.2	113.4	103.5	97.2	91.0	87.8	85.2
50°	139.1	130.2	116.6	102.5	94.6	88.9	77.9	70.6	63.8	59.1	55.9
52.5°	121.8	111.9	99.3	83.1	75.3	69.0	57.0	48.6	42.9	38.2	34.5
55°	102.5	94.6	82.1	66.9	59.1	51.8	41.3	32.4	26.7	23.5	20.9
57.5°	88.4	81.6	69.5	54.9	47.6	40.8	30.3	23.0	18.3	15.2	13.6
60°	78.9	72.7	62.2	48.1	41.3	35.0	25.1	18.3	14.1	11.5	10.5
62.5°	71.1	64.8	55.4	42.3	36.6	30.3	21.4	15.2	11.5	9.4	7.8
65°	62.2	56.5	48.1	36.6	31.4	26.1	18.3	12.5	9.4	7.3	6.3
67.5°	52.8	47.6	40.3	30.3	26.1	22.0	14.6	10.5	7.8	6.3	5.2
70°	42.9	38.7	31.9	24.6	20.9	17.3	12.0	8.4	5.8	4.7	4.2
72.5°	32.9	29.3	24.6	18.8	15.7	13.1	8.9	6.3	4.7	3.7	3.1
75°	23.5	20.9	17.3	13.6	11.5	9.4	6.8	4.7	3.1	2.6	2.1
77.5°	16.2	14.6	12.0	9.4	7.8	6.8	4.7	3.1	2.6	2.1	1.6
80°	10.5	9.4	7.8	5.8	4.7	4.2	2.6	2.1	1.6	1.0	1.0
82.5°	6.3	5.8	4.7	3.1	2.6	2.1	1.6	1.0	1.0	0.5	0.5
85°	3.7	3.1	2.1	1.6	1.6	1.0	1.0	0.5	0.5	0.0	0.0
87.5°	1.6	1.0	1.0	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	400.5	400.5	400.5	400.5	400.5	400.5	400.5	400.5	400.5	400.5	400.5
2.5°	402.0	404.6	404.1	405.7	405.2	405.2	407.8	406.7	409.3	409.3	409.9
5°	407.8	411.4	411.4	414.1	413.5	414.6	417.2	417.2	420.3	421.4	421.4
7.5°	416.1	420.9	421.9	424.5	425.0	427.1	429.2	429.7	433.9	435.0	435.5
10°	427.6	433.4	435.0	437.6	438.6	440.7	443.3	444.4	449.6	450.1	452.2
12.5°	441.8	448.0	449.6	452.7	453.3	455.9	459.5	460.6	465.8	467.4	468.9
15°	455.4	461.1	463.7	466.9	467.4	470.5	473.7	474.7	479.4	481.5	483.1
17.5°	464.8	471.6	473.1	477.3	477.3	479.9	483.1	484.1	488.8	490.4	491.4
20°	466.9	473.1	475.2	478.4	478.9	480.5	483.1	484.1	488.3	488.8	490.4
22.5°	459.0	465.3	466.3	469.5	470.0	471.6	473.7	473.1	478.4	477.8	478.4
25°	442.3	448.0	448.0	451.7	451.2	452.7	453.8	453.3	458.0	458.0	458.0
27.5°	418.2	423.5	424.0	426.6	425.0	425.6	426.6	426.1	429.2	429.2	429.2
30°	388.4	392.6	391.1	393.1	392.1	393.1	392.1	391.6	392.6	393.7	393.1
32.5°	351.3	354.5	354.5	355.0	355.0	351.8	350.8	350.8	350.3	349.8	349.8
35°	308.5	311.1	310.0	310.0	309.5	306.4	304.8	303.7	305.3	302.2	304.3
37.5°	264.5	265.1	263.5	263.0	260.4	260.4	257.7	255.6	256.7	256.2	254.1
40°	216.4	218.5	215.4	214.3	215.9	213.8	211.2	208.6	210.7	208.1	209.1
42.5°	169.4	168.9	167.8	167.8	167.8	164.7	164.2	163.6	164.2	162.1	160.5
45°	122.3	120.8	119.2	119.2	117.1	116.1	116.1	114.5	111.9	111.9	108.7
47.5°	82.6	78.9	77.9	77.4	76.3	76.3	75.3	74.2	73.7	71.1	71.1
50°	53.8	50.2	49.1	48.6	49.1	48.1	47.1	46.0	45.0	44.4	43.4
52.5°	32.4	30.8	29.8	29.3	28.2	27.7	27.2	26.1	25.6	25.6	25.1
55°	19.3	17.8	15.7	15.7	15.7	15.2	14.6	14.1	13.6	13.6	13.1
57.5°	12.0	11.0	9.9	9.4	9.4	9.4	8.9	8.9	8.9	8.9	8.4
60°	8.9	7.8	7.3	7.3	7.3	6.8	6.8	6.8	6.8	6.3	6.3
62.5°	6.8	6.3	5.8	5.8	5.2	5.2	5.2	5.2	5.2	5.2	4.7
65°	5.8	4.7	4.7	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
67.5°	4.2	3.7	3.7	3.7	3.7	3.1	3.1	3.1	3.1	3.1	3.1
70°	3.1	3.1	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
72.5°	2.6	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
75°	2.1	2.1	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
77.5°	1.6	1.6	1.6	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
80°	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
82.5°	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	400.5	400.5	400.5	400.5	400.5	400.5	400.5	<i>400.5</i>
2.5°	409.9	412.5	409.9	409.9	411.4	410.9	412.0	<i>410.4</i>
5°	421.9	425.6	422.9	422.4	425.0	424.5	425.0	<i>424.0</i>
7.5°	436.5	440.2	437.6	437.6	440.2	439.7	441.2	<i>440.2</i>
10°	453.3	457.4	453.8	454.3	458.0	457.4	457.4	<i>457.4</i>
12.5°	470.5	474.7	472.6	472.6	475.2	475.7	476.3	<i>475.7</i>
15°	484.6	488.8	486.2	486.2	489.9	489.3	489.9	<i>489.3</i>
17.5°	<i>493.0</i>	<i>497.2</i>	<i>494.0</i>	<i>494.0</i>	<i>497.2</i>	<i>497.2</i>	<i>497.7</i>	<i>498.2</i>
20°	490.9	495.6	493.0	492.0	495.6	495.6	495.1	<i>495.1</i>
22.5°	478.9	483.1	481.0	479.9	482.5	481.5	481.0	<i>481.5</i>
25°	458.0	462.2	458.0	458.0	460.1	459.5	460.1	<i>459.5</i>
27.5°	429.7	432.9	428.7	428.2	430.3	429.2	428.7	<i>430.3</i>
30°	392.1	395.2	393.1	391.6	394.2	392.6	391.6	<i>392.1</i>
32.5°	349.2	351.3	350.3	347.7	349.2	348.2	347.7	<i>348.2</i>
35°	302.2	304.8	300.6	300.1	302.7	300.6	299.6	<i>302.2</i>
37.5°	253.6	256.7	253.0	253.6	252.0	252.5	251.5	<i>253.0</i>
40°	207.6	207.0	206.0	205.5	206.0	204.4	205.5	<i>203.9</i>
42.5°	157.9	158.9	158.4	157.9	158.4	156.3	155.3	<i>157.4</i>
45°	109.8	109.3	108.2	107.2	107.2	106.7	106.7	<i>105.1</i>
47.5°	70.6	70.1	68.0	68.5	69.5	68.5	66.9	<i>69.0</i>
50°	42.9	42.3	42.3	41.8	42.9	41.8	40.8	<i>40.8</i>
52.5°	24.0	24.0	23.5	23.5	23.5	23.5	23.0	<i>22.5</i>
55°	13.1	12.5	12.5	12.5	12.0	12.0	12.0	<i>12.0</i>
57.5°	8.4	8.4	8.4	8.4	8.4	8.4	7.8	<i>7.8</i>
60°	6.3	6.3	6.3	6.3	5.8	6.3	5.8	<i>5.8</i>
62.5°	4.7	4.7	4.7	4.7	4.7	4.7	4.7	<i>4.7</i>
65°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	<i>3.7</i>
67.5°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	<i>3.1</i>
70°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	<i>2.6</i>
72.5°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	<i>2.1</i>
75°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	<i>1.6</i>
77.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	<i>1.0</i>
80°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	<i>0.5</i>
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	<i>0.0</i>
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	<i>0.0</i>
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	<i>0.0</i>
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	<i>0.0</i>



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— 0°-180° - - - 45°-225° - - - - - 90°-270°

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report













(END OF REPORT)