

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: P251600

Luminaire Tested: **LD4B15D010 EU4B10209024 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251600
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-13)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B15D010 EU4B10209024 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2400K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 959.0 lumens
Efficiency: N/A
Efficacy: 66.6 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 1.17 / 1.15
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

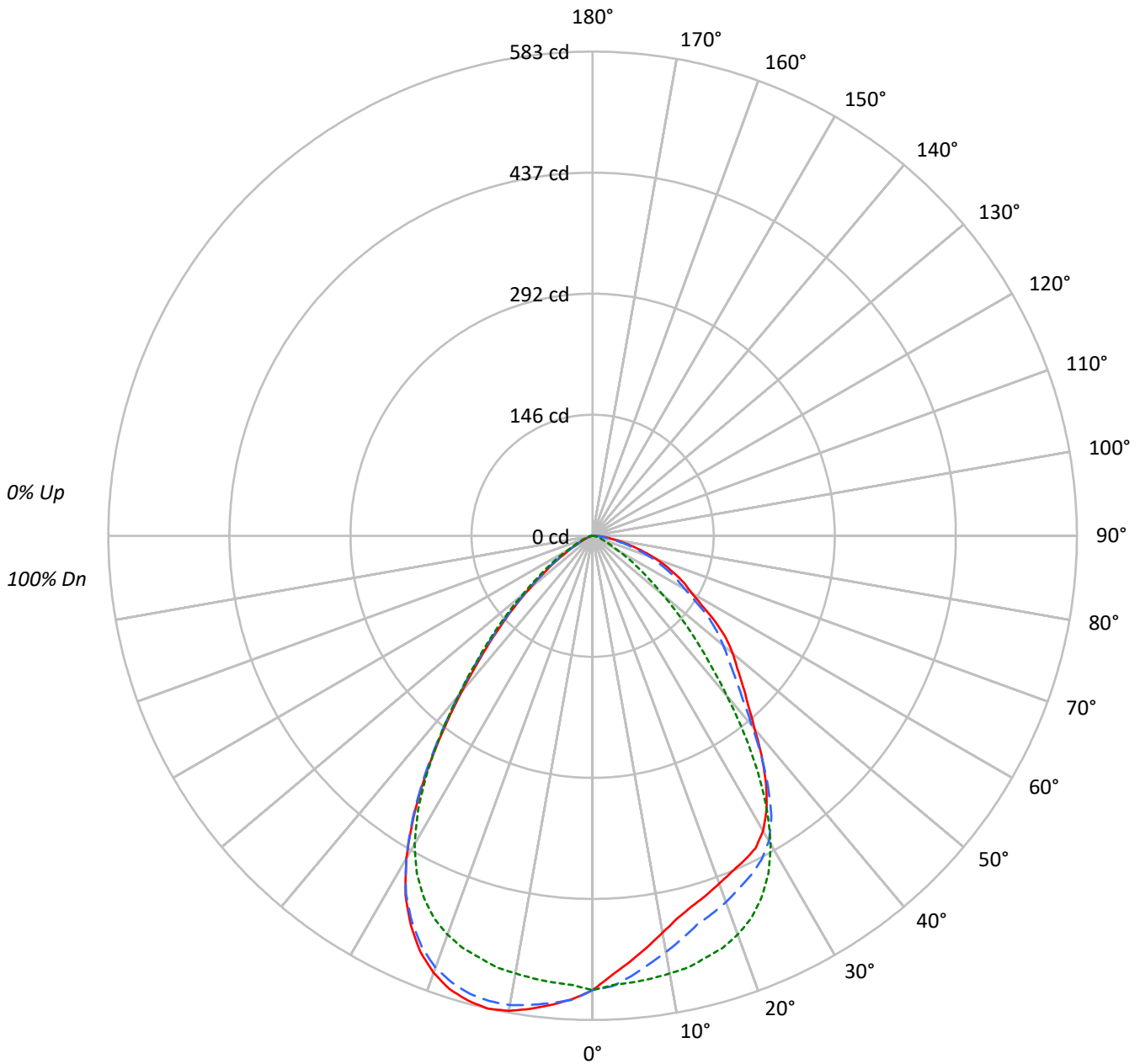
Input Watts (W): 14.39
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	111	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89																			
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79																			
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70																			
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64	62																			
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56																			
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50																			
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46																			
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42																			
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38																			
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	53319	53319	53319
5°	50353	52828	55450
10°	48006	52954	57487
15°	46594	53061	58469
20°	46214	53008	58058
25°	46401	51702	55648
30°	46173	48244	50461
35°	43283	41189	41605
40°	38574	31933	31208
45°	35270	23803	22355
50°	33356	16678	15071
55°	30669	11265	9464
60°	26801	6588	5224
65°	25367	4220	2929
70°	23109	3020	1795
75°	19129	2109	1318
80°	15041	1179	786
85°	13418	783	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	51.7	5.4
10°-20°	148.3	15.5
20°-30°	219.8	22.9
30°-40°	220.1	23.0
40°-50°	153.9	16.0
50°-60°	91.5	9.5
60°-70°	47.8	5.0
70°-80°	21.2	2.2
80°-90°	4.6	0.5
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°	419.8	43.8
0°-40°	640.0	66.7
0°-60°	885.4	92.3
0°-90°	959.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	959.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	547	547	547	547	547	
5°	515	532	540	565	567	48
15°	462	485	526	571	580	131
25°	432	451	481	514	518	199
35°	364	368	346	352	350	226
45°	256	243	173	167	162	199
55°	180	169	66	58	56	160
65°	110	101	18	13	13	109
75°	51	44	6	4	4	55
85°	12	9	1	1	0	13
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°	547.1	547.1	547.1	547.1	547.1	547.1	547.1	547.1	547.1	547.1	547.1
2.5°	529.5	535.8	529.5	531.6	540.0	532.3	536.5	536.5	534.4	539.3	542.9
5°	514.7	521.0	514.7	517.5	526.7	518.9	523.8	522.4	523.1	527.4	532.3
7.5°	499.9	504.8	499.2	502.7	511.1	504.8	509.0	509.0	509.7	516.1	520.3
10°	485.1	489.3	485.1	487.9	497.0	491.4	494.2	494.9	497.0	502.7	509.0
12.5°	471.7	475.2	471.0	475.2	482.9	477.3	480.8	481.5	483.6	490.0	497.0
15°	461.8	465.3	461.1	464.6	471.7	467.4	470.2	471.7	473.1	478.7	485.1
17.5°	454.0	456.9	453.3	457.6	463.2	458.3	462.5	462.5	464.6	470.2	477.3
20°	445.6	448.4	445.6	449.1	455.4	451.2	454.7	454.7	456.9	463.2	469.5
22.5°	437.8	439.2	437.8	440.6	447.0	443.5	445.6	446.3	448.4	454.0	459.7
25°	431.5	434.3	432.9	435.7	439.9	436.4	438.5	439.2	441.3	446.3	451.2
27.5°	424.4	425.8	424.4	427.9	431.5	428.7	430.8	430.1	431.5	435.7	439.9
30°	410.3	411.7	411.7	413.8	416.7	415.3	417.4	415.3	416.7	420.2	424.4
32.5°	389.9	390.6	391.3	393.4	395.5	393.4	394.8	394.8	394.8	397.6	400.5
35°	363.8	365.2	364.5	365.9	368.0	367.3	367.3	366.6	365.2	366.6	368.0
37.5°	334.2	332.1	332.1	334.2	335.6	332.8	334.2	332.8	332.8	333.5	333.5
40°	303.2	301.0	303.2	303.9	304.6	303.2	302.5	301.0	298.9	299.6	298.2
42.5°	277.1	275.7	276.4	276.4	277.1	275.7	276.4	273.5	271.4	270.0	267.9
45°	255.9	253.8	255.9	254.5	254.5	253.8	253.1	251.7	248.9	246.8	243.2
47.5°	236.2	236.2	236.9	236.9	236.9	235.5	235.5	232.7	229.8	227.0	222.1
50°	220.0	218.6	221.4	221.4	219.3	218.6	219.3	215.7	213.6	210.1	205.2
52.5°	202.3	202.3	203.0	203.0	202.3	200.9	201.6	198.8	196.7	193.2	188.2
55°	180.5	179.1	181.2	181.2	180.5	179.8	180.5	178.4	176.3	173.4	169.2
57.5°	155.8	155.1	156.5	157.2	155.8	155.8	156.5	154.4	153.7	150.9	146.6
60°	137.5	136.8	138.2	138.9	137.5	137.5	137.5	134.7	133.2	130.4	127.6
62.5°	124.8	124.1	125.5	124.8	124.1	123.4	124.1	121.3	119.9	117.0	114.2
65°	110.0	110.7	111.4	111.4	110.7	110.0	110.0	108.6	107.2	104.3	100.8
67.5°	95.9	95.9	96.6	97.3	96.6	96.6	96.6	94.5	93.1	90.9	86.7
70°	81.1	80.4	82.5	82.5	81.1	81.8	81.1	80.4	79.0	76.1	72.6
72.5°	65.6	65.6	66.3	66.3	65.6	65.6	65.6	64.9	62.7	61.3	57.8
75°	50.8	50.8	51.5	52.2	50.8	50.8	51.5	50.1	48.6	46.5	44.4
77.5°	38.1	37.4	38.1	38.1	37.4	37.4	37.4	36.7	36.0	33.8	31.7
80°	26.8	26.1	26.8	26.8	26.8	26.1	26.1	25.4	25.4	24.0	21.9
82.5°	18.3	17.6	18.3	18.3	18.3	17.6	17.6	17.6	16.9	16.2	14.8
85°	12.0	11.3	11.3	12.0	11.3	11.3	11.3	11.3	10.6	9.9	9.2
87.5°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	4.9	4.9	4.9	4.2
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°	547.1	547.1	547.1	547.1	547.1	547.1	547.1	547.1	547.1	547.1	547.1
2.5°	540.0	538.6	542.9	541.5	542.2	538.6	544.3	541.5	545.0	541.5	548.5
5°	530.9	529.5	535.8	535.1	535.8	533.0	539.3	538.6	542.9	540.0	547.8
7.5°	521.0	519.6	526.7	527.4	528.8	525.9	534.4	534.4	538.6	537.9	546.4
10°	509.7	510.4	517.5	518.9	521.7	520.3	528.1	530.2	535.8	535.1	545.7
12.5°	499.2	499.2	508.3	511.1	513.3	512.6	521.7	524.5	530.9	532.3	542.2
15°	488.6	489.3	497.7	502.0	504.8	504.1	514.0	517.5	525.2	525.9	537.9
17.5°	480.1	479.4	488.6	492.1	496.3	495.6	506.2	510.4	518.2	520.3	531.6
20°	473.1	472.4	480.8	485.1	487.9	487.2	497.7	502.7	509.7	511.1	522.4
22.5°	464.6	463.2	471.7	475.2	478.0	477.3	486.5	490.0	497.0	498.5	509.0
25°	454.7	453.3	461.1	463.2	465.3	463.9	471.7	473.8	479.4	480.8	491.4
27.5°	443.5	439.9	446.3	446.3	447.7	445.6	451.2	453.3	458.3	458.3	468.1
30°	425.8	420.9	424.4	423.7	424.4	421.6	425.1	425.8	429.4	428.7	435.7
32.5°	401.2	394.1	396.2	394.1	392.0	387.8	392.0	390.6	393.4	390.6	396.9
35°	367.3	360.3	359.6	356.7	354.6	351.1	351.1	347.6	348.3	346.2	350.4
37.5°	330.7	321.5	320.1	314.4	310.9	306.7	306.7	303.9	300.3	298.9	302.5
40°	294.7	284.8	281.3	272.1	268.6	264.4	261.6	258.0	256.6	251.0	253.8
42.5°	263.7	253.1	245.3	235.5	232.0	225.6	221.4	217.1	215.0	208.7	211.5
45°	237.6	224.9	216.4	203.8	198.8	191.8	185.4	180.5	175.6	172.7	171.3
47.5°	215.7	202.3	191.1	177.0	169.2	162.9	154.4	149.5	143.1	139.6	137.5
50°	197.4	182.6	169.9	153.7	145.9	138.9	129.0	121.3	115.6	110.0	108.6
52.5°	181.2	165.7	151.6	133.2	124.1	115.6	105.0	96.6	91.7	85.3	84.6
55°	162.2	148.8	133.2	114.2	105.0	96.6	85.3	76.8	70.5	66.3	64.9
57.5°	141.7	129.0	114.2	95.2	86.0	76.8	66.3	58.5	52.9	49.4	48.6
60°	122.7	110.7	96.6	77.6	68.4	60.6	49.4	41.6	36.7	33.8	32.4
62.5°	108.6	97.3	83.9	66.3	57.8	50.1	39.5	32.4	28.2	25.4	24.0
65°	95.2	83.9	71.9	55.7	48.6	41.6	31.7	25.4	21.2	18.3	16.9
67.5°	81.1	71.2	59.9	46.5	39.5	33.8	25.4	19.7	16.2	14.1	12.7
70°	67.0	57.8	48.6	37.4	32.4	26.8	19.7	15.5	12.0	10.6	9.2
72.5°	52.9	45.8	38.1	28.9	24.7	21.2	15.5	11.3	9.2	7.8	6.3
75°	39.5	34.5	28.2	21.9	18.3	15.5	11.3	8.5	7.1	5.6	4.9
77.5°	28.2	24.0	19.7	14.8	13.4	11.3	7.8	6.3	4.9	3.5	2.8
80°	19.0	16.9	13.4	10.6	8.5	7.8	5.6	4.2	2.8	2.1	2.1
82.5°	12.7	10.6	8.5	6.3	5.6	4.9	3.5	2.8	2.1	1.4	1.4
85°	7.8	6.3	4.9	3.5	3.5	2.8	2.1	1.4	0.7	0.7	0.7
87.5°	3.5	2.8	2.1	1.4	1.4	0.7	0.7	0.7	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°	547.1	547.1	547.1	547.1	547.1	547.1	547.1	547.1	547.1	547.1	547.1
2.5°	554.1	549.9	547.1	550.6	552.0	549.9	552.0	555.6	559.1	559.8	549.9
5°	554.9	550.6	549.2	553.4	554.1	553.4	555.6	560.5	564.7	566.1	556.3
7.5°	554.9	552.0	551.3	556.3	557.0	556.3	559.8	565.4	569.7	572.5	562.6
10°	553.4	552.0	552.7	557.0	558.4	558.4	563.3	569.7	573.9	576.7	566.8
12.5°	551.3	551.3	551.3	556.3	557.7	558.4	562.6	571.1	573.9	578.1	568.2
15°	547.8	547.8	547.8	552.7	554.9	554.9	559.8	567.5	571.1	575.3	565.4
17.5°	541.5	541.5	542.2	546.4	548.5	548.5	553.4	561.9	564.0	569.0	559.1
20°	532.3	532.3	533.0	537.2	539.3	537.9	544.3	551.3	553.4	557.7	547.8
22.5°	518.9	518.9	518.9	523.1	524.5	523.8	530.2	536.5	536.5	542.2	531.6
25°	499.2	500.6	499.2	503.4	504.8	504.1	509.7	515.4	514.0	520.3	509.7
27.5°	475.2	474.5	474.5	478.0	478.0	477.3	481.5	487.9	486.5	490.7	480.8
30°	442.0	444.2	440.6	445.6	443.5	442.0	444.9	450.5	448.4	451.9	444.2
32.5°	404.0	401.2	401.2	401.2	402.6	399.0	401.9	404.7	402.6	406.1	397.6
35°	353.9	354.6	352.5	353.2	353.9	349.7	352.5	355.3	352.5	354.6	346.9
37.5°	303.9	304.6	299.6	302.5	299.6	298.2	301.0	302.5	299.6	301.7	293.3
40°	253.8	252.4	251.7	251.7	252.4	248.9	251.0	253.1	251.0	252.4	244.6
42.5°	210.1	209.4	208.0	208.7	206.6	205.9	206.6	208.7	206.6	208.0	202.3
45°	172.0	170.6	168.5	169.2	169.2	165.7	167.8	169.2	167.1	167.8	162.9
47.5°	136.8	134.7	134.7	134.0	134.0	132.5	134.7	134.0	131.8	133.2	128.3
50°	106.5	105.0	105.0	105.0	105.0	102.9	103.6	105.0	102.9	102.9	100.1
52.5°	83.2	81.1	79.7	79.7	79.7	79.0	79.0	79.7	77.6	77.6	76.8
55°	62.7	62.0	59.9	59.9	59.9	57.8	58.5	58.5	57.8	57.8	55.7
57.5°	46.5	44.4	43.0	43.0	41.6	41.6	40.9	41.6	40.2	40.2	38.8
60°	31.0	29.6	28.9	28.2	28.2	27.5	28.2	27.5	27.5	26.8	26.1
62.5°	22.6	21.2	19.7	19.7	19.7	19.0	19.0	19.0	19.0	19.0	18.3
65°	16.2	14.8	14.8	14.1	14.1	13.4	13.4	13.4	13.4	13.4	12.7
67.5°	11.3	10.6	9.9	9.9	9.9	9.9	9.9	9.9	9.2	9.2	9.2
70°	8.5	7.8	7.1	7.1	7.1	7.1	7.1	6.3	7.1	7.1	6.3
72.5°	5.6	5.6	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
75°	4.2	4.2	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
77.5°	2.8	2.8	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
80°	2.1	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
82.5°	1.4	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
85°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	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°	547.1	547.1	547.1	547.1	547.1	547.1	547.1	547.1
2.5°	560.5	559.8	558.4	560.5	554.9	552.7	552.0	558.4
5°	568.2	566.8	566.8	569.0	562.6	561.2	559.8	566.8
7.5°	575.3	573.9	573.9	576.0	570.4	569.0	567.5	574.6
10°	579.5	579.5	579.5	580.9	576.0	574.6	573.9	580.9
12.5°	581.6	581.6	580.9	583.8	577.4	577.4	576.0	583.1
15°	578.8	578.8	578.8	580.9	575.3	573.9	573.9	579.5
17.5°	571.8	571.8	571.1	573.2	566.8	566.8	566.1	572.5
20°	561.2	561.2	559.8	562.6	556.3	554.1	553.4	559.8
22.5°	544.3	543.6	542.9	544.3	538.6	537.2	536.5	542.2
25°	522.4	521.7	520.3	521.7	515.4	513.3	513.3	517.5
27.5°	491.4	491.4	489.3	491.4	484.4	483.6	482.9	487.9
30°	453.3	450.5	449.1	451.9	444.9	444.9	443.5	448.4
32.5°	406.1	403.3	402.6	404.0	397.6	395.5	398.3	401.2
35°	351.8	352.5	349.7	349.7	344.1	344.8	345.5	349.7
37.5°	299.6	298.2	297.5	298.2	294.0	292.6	291.2	295.4
40°	251.0	247.5	246.8	246.8	243.2	242.5	243.2	245.3
42.5°	205.2	204.5	201.6	203.0	199.5	200.9	200.2	200.2
45°	165.7	166.4	163.6	165.7	162.9	160.7	160.7	162.2
47.5°	131.1	131.1	130.4	130.4	128.3	129.0	127.6	129.7
50°	101.5	101.5	100.1	100.8	99.4	99.4	98.7	99.4
52.5°	77.6	76.8	76.8	76.1	74.7	75.4	76.1	74.7
55°	56.4	57.1	55.7	56.4	55.0	55.7	55.0	55.7
57.5°	38.8	39.5	38.1	39.5	38.1	38.8	38.1	38.1
60°	26.8	26.8	26.1	26.8	26.1	26.1	25.4	26.8
62.5°	18.3	18.3	18.3	18.3	18.3	17.6	18.3	18.3
65°	13.4	12.7	12.7	12.7	12.7	12.7	12.7	12.7
67.5°	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2
70°	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
72.5°	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
75°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
77.5°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
80°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
82.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
85°	0.7	0.7	0.7	0.0	0.7	0.0	0.0	0.0
87.5°	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



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













(END OF REPORT)