

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: P251613

Luminaire Tested: **LD4B20D010 EU4B10209024 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251613
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: LD4B20D010 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: 1298.0 lumens
Efficiency: N/A
Efficacy: 62.4 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

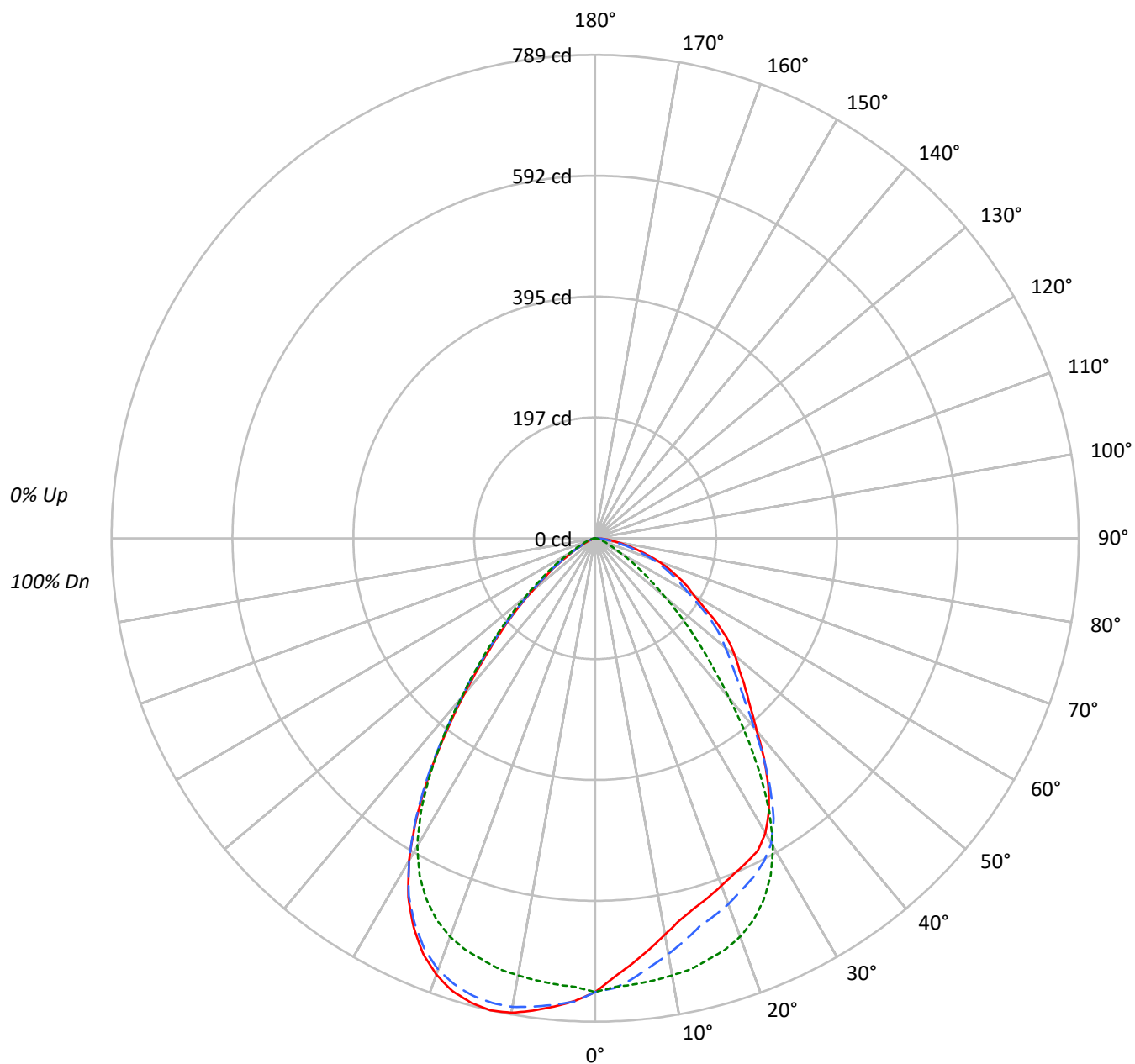
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RW	70	50	30	10	70	50	30	10		50	30	10			50	30	10			50
RCR																				
0	119	119	119	119	116	116	116	116		111	111	111			106	106	106			102
1	111	108	104	101	109	106	103	100		101	99	97			98	96	94			94
2	104	97	92	87	101	95	90	86		92	88	84			89	85	82			86
3	96	88	81	76	94	86	80	75		83	78	74			81	76	73			78
4	90	80	72	67	88	78	72	66		76	70	66			74	69	65			72
5	83	73	65	60	82	72	65	59		70	63	59			68	62	58			66
6	78	67	59	53	76	66	59	53		64	58	53			62	57	52			61
7	73	61	54	48	71	61	53	48		59	53	48			58	52	48			56
8	68	57	49	44	67	56	49	44		55	48	44			54	48	43			52
9	64	52	45	40	63	52	45	40		51	44	40			50	44	40			49
10	61	49	42	37	59	48	42	37		47	41	37			47	41	37			46

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	72168	72168	72168
5°	68149	71504	75055
10°	64968	71678	77813
15°	63060	71828	79143
20°	62549	71748	78583
25°	62799	69983	75316
30°	62502	65293	68297
35°	58583	55739	56311
40°	52199	43217	42251
45°	47743	32224	30253
50°	45137	22576	20393
55°	41510	15241	12811
60°	36274	8927	7075
65°	34337	5719	3966
70°	31259	4075	2451
75°	25869	2862	1807
80°	20373	1628	1066
85°	18115	1118	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	70.0	5.4
10°-20°	200.7	15.5
20°-30°	297.5	22.9
30°-40°	297.9	23.0
40°-50°	208.2	16.0
50°-60°	123.9	9.5
60°-70°	64.7	5.0
70°-80°	28.8	2.2
80°-90°	6.3	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°	568.2	43.8
0°-40°	866.2	66.7
0°-60°	1198.3	92.3
0°-90°	1298.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1298.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	740	740	740	740	740	
5°	697	720	731	764	767	65
15°	625	656	712	773	784	177
25°	584	611	651	696	700	269
35°	492	498	468	477	473	305
45°	346	329	234	226	220	269
55°	244	229	90	78	75	217
65°	149	136	25	18	17	147
75°	69	60	8	5	5	74
85°	16	12	1	1	0	18
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°	740.5	740.5	740.5	740.5	740.5	740.5	740.5	740.5	740.5	740.5	740.5
2.5°	716.6	725.2	716.6	719.5	730.9	720.5	726.2	726.2	723.3	730.0	734.8
5°	696.6	705.2	696.6	700.4	712.8	702.3	709.0	707.1	708.0	713.8	720.5
7.5°	676.6	683.2	675.6	680.4	691.8	683.2	689.0	689.0	689.9	698.5	704.2
10°	656.5	662.2	656.5	660.3	672.7	665.1	668.9	669.9	672.7	680.4	689.0
12.5°	638.4	643.2	637.4	643.2	653.7	646.0	650.8	651.7	654.6	663.2	672.7
15°	625.0	629.8	624.1	628.8	638.4	632.7	636.5	638.4	640.3	647.9	656.5
17.5°	614.5	618.3	613.6	619.3	626.9	620.3	626.0	626.0	628.8	636.5	646.0
20°	603.1	606.9	603.1	607.9	616.4	610.7	615.5	615.5	618.3	626.9	635.5
22.5°	592.6	594.5	592.6	596.4	605.0	600.2	603.1	604.0	606.9	614.5	622.2
25°	584.0	587.8	585.9	589.7	595.4	590.7	593.5	594.5	597.4	604.0	610.7
27.5°	574.5	576.4	574.5	579.2	584.0	580.2	583.0	582.1	584.0	589.7	595.4
30°	555.4	557.3	557.3	560.1	564.0	562.0	564.9	562.0	564.0	568.7	574.5
32.5°	527.7	528.7	529.6	532.5	535.3	532.5	534.4	534.4	534.4	538.2	542.0
35°	492.4	494.3	493.3	495.3	498.1	497.2	497.2	496.2	494.3	496.2	498.1
37.5°	452.3	449.4	449.4	452.3	454.2	450.4	452.3	450.4	450.4	451.4	451.4
40°	410.3	407.5	410.3	411.3	412.2	410.3	409.4	407.5	404.6	405.6	403.6
42.5°	375.0	373.1	374.1	374.1	375.0	373.1	374.1	370.2	367.4	365.5	362.6
45°	346.4	343.5	346.4	344.5	344.5	343.5	342.6	340.7	336.8	334.0	329.2
47.5°	319.7	319.7	320.6	320.6	320.6	318.7	318.7	314.9	311.1	307.3	300.6
50°	297.7	295.8	299.6	299.6	296.8	295.8	296.8	292.0	289.1	284.4	277.7
52.5°	273.9	273.9	274.8	274.8	273.9	272.0	272.9	269.1	266.2	261.5	254.8
55°	244.3	242.4	245.2	245.2	244.3	243.3	244.3	241.4	238.6	234.7	229.0
57.5°	210.9	209.9	211.8	212.8	210.9	210.9	211.8	209.0	208.0	204.2	198.5
60°	186.1	185.1	187.0	188.0	186.1	186.1	186.1	182.3	180.4	176.5	172.7
62.5°	168.9	167.9	169.9	168.9	167.9	167.0	167.9	164.1	162.2	158.4	154.6
65°	148.9	149.8	150.8	150.8	149.8	148.9	148.9	147.0	145.0	141.2	136.5
67.5°	129.8	129.8	130.7	131.7	130.7	130.7	130.7	127.9	126.0	123.1	117.4
70°	109.7	108.8	111.6	111.6	109.7	110.7	109.7	108.8	106.9	103.1	98.3
72.5°	88.7	88.7	89.7	89.7	88.7	88.7	88.7	87.8	84.9	83.0	78.2
75°	68.7	68.7	69.7	70.6	68.7	68.7	69.7	67.8	65.8	63.0	60.1
77.5°	51.5	50.6	51.5	51.5	50.6	50.6	50.6	49.6	48.7	45.8	42.9
80°	36.3	35.3	36.3	36.3	36.3	35.3	35.3	34.4	34.4	32.4	29.6
82.5°	24.8	23.9	24.8	24.8	24.8	23.9	23.9	23.9	22.9	21.9	20.0
85°	16.2	15.3	15.3	16.2	15.3	15.3	15.3	15.3	14.3	13.4	12.4
87.5°	7.6	7.6	7.6	7.6	7.6	7.6	7.6	6.7	6.7	6.7	5.7
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°	740.5	740.5	740.5	740.5	740.5	740.5	740.5	740.5	740.5	740.5	740.5
2.5°	730.9	729.0	734.8	732.9	733.8	729.0	736.7	732.9	737.6	732.9	742.4
5°	718.5	716.6	725.2	724.3	725.2	721.4	730.0	729.0	734.8	730.9	741.4
7.5°	705.2	703.3	712.8	713.8	715.7	711.9	723.3	723.3	729.0	728.1	739.5
10°	689.9	690.9	700.4	702.3	706.1	704.2	714.7	717.6	725.2	724.3	738.6
12.5°	675.6	675.6	688.0	691.8	694.7	693.7	706.1	710.0	718.5	720.5	733.8
15°	661.3	662.2	673.7	679.4	683.2	682.3	695.6	700.4	710.9	711.9	728.1
17.5°	649.8	648.9	661.3	666.1	671.8	670.8	685.1	690.9	701.4	704.2	719.5
20°	640.3	639.3	650.8	656.5	660.3	659.4	673.7	680.4	689.9	691.8	707.1
22.5°	628.8	626.9	638.4	643.2	647.0	646.0	658.4	663.2	672.7	674.6	689.0
25°	615.5	613.6	624.1	626.9	629.8	627.9	638.4	641.3	648.9	650.8	665.1
27.5°	600.2	595.4	604.0	604.0	605.9	603.1	610.7	613.6	620.3	620.3	633.6
30°	576.4	569.7	574.5	573.5	574.5	570.6	575.4	576.4	581.1	580.2	589.7
32.5°	543.0	533.4	536.3	533.4	530.6	524.8	530.6	528.7	532.5	528.7	537.2
35°	497.2	487.6	486.7	482.8	480.0	475.2	475.2	470.4	471.4	468.5	474.3
37.5°	447.5	435.1	433.2	425.6	420.8	415.1	415.1	411.3	406.5	404.6	409.4
40°	398.9	385.5	380.7	368.3	363.6	357.8	354.0	349.3	347.3	339.7	343.5
42.5°	356.9	342.6	332.1	318.7	313.9	305.4	299.6	293.9	291.0	282.5	286.3
45°	321.6	304.4	293.0	275.8	269.1	259.6	251.0	244.3	237.6	233.8	231.9
47.5°	292.0	273.9	258.6	239.5	229.0	220.4	209.0	202.3	193.7	188.9	186.1
50°	267.2	247.1	230.0	208.0	197.5	188.0	174.6	164.1	156.5	148.9	147.0
52.5°	245.2	224.2	205.2	180.4	167.9	156.5	142.2	130.7	124.1	115.5	114.5
55°	219.5	201.3	180.4	154.6	142.2	130.7	115.5	104.0	95.4	89.7	87.8
57.5°	191.8	174.6	154.6	128.8	116.4	104.0	89.7	79.2	71.6	66.8	65.8
60°	166.0	149.8	130.7	105.0	92.6	82.1	66.8	56.3	49.6	45.8	43.9
62.5°	147.0	131.7	113.6	89.7	78.2	67.8	53.4	43.9	38.2	34.4	32.4
65°	128.8	113.6	97.3	75.4	65.8	56.3	42.9	34.4	28.6	24.8	22.9
67.5°	109.7	96.4	81.1	63.0	53.4	45.8	34.4	26.7	21.9	19.1	17.2
70°	90.7	78.2	65.8	50.6	43.9	36.3	26.7	21.0	16.2	14.3	12.4
72.5°	71.6	62.0	51.5	39.1	33.4	28.6	21.0	15.3	12.4	10.5	8.6
75°	53.4	46.8	38.2	29.6	24.8	21.0	15.3	11.5	9.5	7.6	6.7
77.5°	38.2	32.4	26.7	20.0	18.1	15.3	10.5	8.6	6.7	4.8	3.8
80°	25.8	22.9	18.1	14.3	11.5	10.5	7.6	5.7	3.8	2.9	2.9
82.5°	17.2	14.3	11.5	8.6	7.6	6.7	4.8	3.8	2.9	1.9	1.9
85°	10.5	8.6	6.7	4.8	4.8	3.8	2.9	1.9	1.0	1.0	1.0
87.5°	4.8	3.8	2.9	1.9	1.9	1.0	1.0	1.0	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°	740.5	740.5	740.5	740.5	740.5	740.5	740.5	740.5	740.5	740.5	740.5
2.5°	750.0	744.3	740.5	745.3	747.2	744.3	747.2	751.9	756.7	757.7	744.3
5°	751.0	745.3	743.4	749.1	750.0	749.1	751.9	758.6	764.3	766.3	752.9
7.5°	751.0	747.2	746.2	752.9	753.9	752.9	757.7	765.3	771.0	774.8	761.5
10°	749.1	747.2	748.1	753.9	755.8	755.8	762.4	771.0	776.8	780.6	767.2
12.5°	746.2	746.2	746.2	752.9	754.8	755.8	761.5	772.9	776.8	782.5	769.1
15°	741.4	741.4	741.4	748.1	751.0	751.0	757.7	768.2	772.9	778.7	765.3
17.5°	732.9	732.9	733.8	739.5	742.4	742.4	749.1	760.5	763.4	770.1	756.7
20°	720.5	720.5	721.4	727.1	730.0	728.1	736.7	746.2	749.1	754.8	741.4
22.5°	702.3	702.3	702.3	708.0	710.0	709.0	717.6	726.2	726.2	733.8	719.5
25°	675.6	677.5	675.6	681.3	683.2	682.3	689.9	697.6	695.6	704.2	689.9
27.5°	643.2	642.2	642.2	647.0	647.0	646.0	651.7	660.3	658.4	664.2	650.8
30°	598.3	601.2	596.4	603.1	600.2	598.3	602.1	609.8	606.9	611.7	601.2
32.5°	546.8	543.0	543.0	543.0	544.9	540.1	543.9	547.7	544.9	549.6	538.2
35°	479.0	480.0	477.1	478.1	479.0	473.3	477.1	480.9	477.1	480.0	469.5
37.5°	411.3	412.2	405.6	409.4	405.6	403.6	407.5	409.4	405.6	408.4	397.0
40°	343.5	341.6	340.7	340.7	341.6	336.8	339.7	342.6	339.7	341.6	331.1
42.5°	284.4	283.4	281.5	282.5	279.6	278.6	279.6	282.5	279.6	281.5	273.9
45°	232.8	230.9	228.1	229.0	229.0	224.2	227.1	229.0	226.2	227.1	220.4
47.5°	185.1	182.3	182.3	181.3	181.3	179.4	182.3	181.3	178.4	180.4	173.7
50°	144.1	142.2	142.2	142.2	142.2	139.3	140.3	142.2	139.3	139.3	135.5
52.5°	112.6	109.7	107.8	107.8	107.8	106.9	106.9	107.8	105.0	105.0	104.0
55°	84.9	84.0	81.1	81.1	81.1	78.2	79.2	79.2	78.2	78.2	75.4
57.5°	63.0	60.1	58.2	58.2	56.3	56.3	55.3	56.3	54.4	54.4	52.5
60°	42.0	40.1	39.1	38.2	38.2	37.2	38.2	37.2	37.2	36.3	35.3
62.5°	30.5	28.6	26.7	26.7	26.7	25.8	25.8	25.8	25.8	25.8	24.8
65°	21.9	20.0	20.0	19.1	19.1	18.1	18.1	18.1	18.1	18.1	17.2
67.5°	15.3	14.3	13.4	13.4	13.4	13.4	13.4	13.4	12.4	12.4	12.4
70°	11.5	10.5	9.5	9.5	9.5	9.5	9.5	8.6	9.5	9.5	8.6
72.5°	7.6	7.6	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
75°	5.7	5.7	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
77.5°	3.8	3.8	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
80°	2.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
82.5°	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
85°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	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°	740.5	740.5	740.5	740.5	740.5	740.5	740.5	740.5
2.5°	758.6	757.7	755.8	758.6	751.0	748.1	747.2	755.8
5°	769.1	767.2	767.2	770.1	761.5	759.6	757.7	767.2
7.5°	778.7	776.8	776.8	779.6	772.0	770.1	768.2	777.7
10°	784.4	784.4	784.4	786.3	779.6	777.7	776.8	786.3
12.5°	787.3	787.3	786.3	790.1	781.5	781.5	779.6	789.2
15°	783.4	783.4	783.4	786.3	778.7	776.8	776.8	784.4
17.5°	773.9	773.9	772.9	775.8	767.2	767.2	766.3	774.8
20°	759.6	759.6	757.7	761.5	752.9	750.0	749.1	757.7
22.5°	736.7	735.7	734.8	736.7	729.0	727.1	726.2	733.8
25°	707.1	706.1	704.2	706.1	697.6	694.7	694.7	700.4
27.5°	665.1	665.1	662.2	665.1	655.6	654.6	653.7	660.3
30°	613.6	609.8	607.9	611.7	602.1	602.1	600.2	606.9
32.5°	549.6	545.8	544.9	546.8	538.2	535.3	539.1	543.0
35°	476.2	477.1	473.3	473.3	465.7	466.6	467.6	473.3
37.5°	405.6	403.6	402.7	403.6	397.9	396.0	394.1	399.8
40°	339.7	334.9	334.0	334.0	329.2	328.3	329.2	332.1
42.5°	277.7	276.7	272.9	274.8	270.1	272.0	271.0	271.0
45°	224.2	225.2	221.4	224.2	220.4	217.6	217.6	219.5
47.5°	177.5	177.5	176.5	176.5	173.7	174.6	172.7	175.6
50°	137.4	137.4	135.5	136.5	134.5	134.5	133.6	134.5
52.5°	105.0	104.0	104.0	103.1	101.1	102.1	103.1	101.1
55°	76.3	77.3	75.4	76.3	74.4	75.4	74.4	75.4
57.5°	52.5	53.4	51.5	53.4	51.5	52.5	51.5	51.5
60°	36.3	36.3	35.3	36.3	35.3	35.3	34.4	36.3
62.5°	24.8	24.8	24.8	24.8	24.8	23.9	24.8	24.8
65°	18.1	17.2	17.2	17.2	17.2	17.2	17.2	17.2
67.5°	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4
70°	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6
72.5°	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
75°	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
77.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
80°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
82.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
85°	1.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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)