

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: P251923

Luminaire Tested: **LD4B20D010 EU4B10208040 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251923
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-15)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B20D010 EU4B10208040 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1811.0 lumens
Efficiency: N/A
Efficacy: 87.1 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.18 / 1.19
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

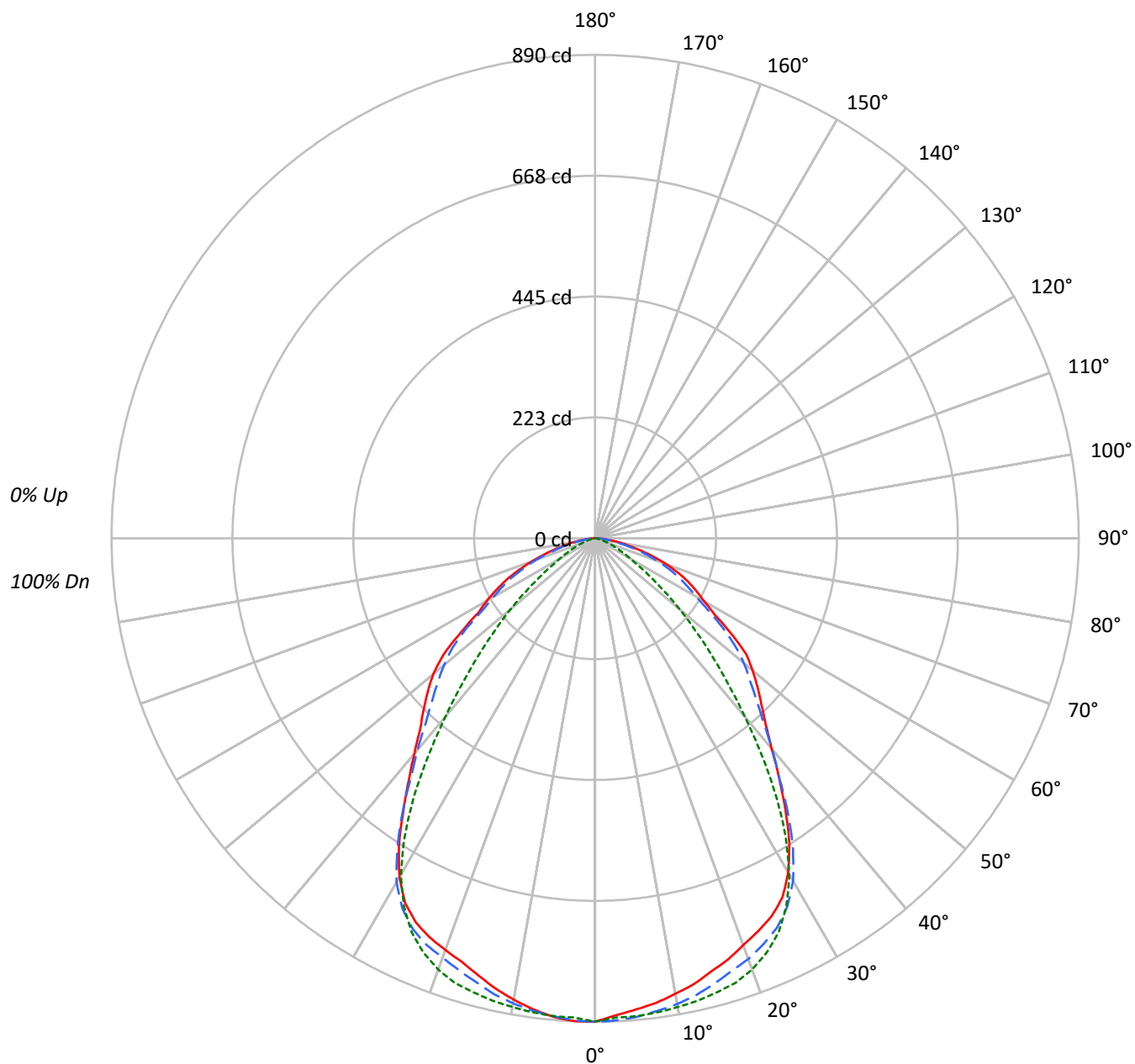
Input Watts (W): 20.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	89	88		
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76		
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68	66		
4	87	77	69	63	85	75	68	62	73	67	62	71	65	61	69	64	60	58		
5	81	69	61	55	79	68	61	55	66	60	54	64	58	54	63	57	53	51		
6	75	63	55	49	73	62	55	49	60	54	49	59	53	48	57	52	48	46		
7	70	58	50	44	68	57	49	44	56	49	44	54	48	43	53	47	43	41		
8	66	53	45	40	64	52	45	40	51	44	40	50	44	39	49	43	39	37		
9	62	49	41	36	60	49	41	36	47	41	36	46	40	36	45	40	36	34		
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	86728	86728	86728
5°	85181	86384	86521
10°	84266	86710	85354
15°	83290	87295	83986
20°	82638	87606	83624
25°	82585	85973	83908
30°	79956	80417	81036
35°	72646	69219	73300
40°	64273	54515	65838
45°	59624	41513	61512
50°	57281	30718	58949
55°	51874	21171	51178
60°	45104	14404	44831
65°	43561	10423	41348
70°	39408	7010	35106
75°	32459	4632	27827
80°	26098	3087	20766
85°	21470	1565	13754



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	84.0	4.6
10°-20°	240.2	13.3
20°-30°	362.9	20.0
30°-40°	379.7	21.0
40°-50°	307.6	17.0
50°-60°	223.7	12.4
60°-70°	138.0	7.6
70°-80°	62.3	3.4
80°-90°	12.7	0.7
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°	687.0	37.9
0°-40°	1066.8	58.9
0°-60°	1598.0	88.2
0°-90°	1811.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1811.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	890	890	890	890	890	
5°	871	884	883	883	884	83
15°	826	849	865	846	832	233
25°	768	791	800	794	780	352
35°	611	619	582	619	616	381
45°	433	419	301	424	446	336
55°	305	286	125	289	301	272
65°	189	170	45	167	179	185
75°	86	74	12	64	74	94
85°	19	15	1	11	12	22
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°	889.9	889.9	889.9	889.9	889.9	889.9	889.9	889.9	889.9	889.9	889.9
2.5°	878.9	878.9	887.1	896.7	888.5	880.3	885.7	883.0	892.6	892.6	888.5
5°	870.7	873.4	880.3	888.5	881.6	873.4	880.3	877.5	887.1	887.1	884.4
7.5°	862.5	863.8	872.1	881.6	874.8	866.6	872.1	870.7	878.9	880.3	877.5
10°	851.5	852.9	861.1	870.7	863.8	857.0	862.5	861.1	872.1	872.1	870.7
12.5°	840.6	841.9	850.2	858.4	851.5	844.7	850.2	850.2	861.1	862.5	861.1
15°	825.5	828.2	835.1	843.3	839.2	831.0	836.5	836.5	846.0	848.8	848.8
17.5°	813.2	814.6	821.4	829.6	824.1	817.3	822.8	822.8	832.4	835.1	835.1
20°	796.8	799.5	806.3	814.6	810.5	805.0	809.1	809.1	820.0	822.8	824.1
22.5°	783.1	785.8	791.3	802.2	795.4	791.3	796.8	795.4	807.7	809.1	809.1
25°	768.0	770.8	777.6	784.4	780.3	776.2	780.3	780.3	789.9	791.3	791.3
27.5°	746.1	747.5	754.3	761.2	757.1	751.6	757.1	755.7	765.3	766.6	765.3
30°	710.5	713.3	716.0	725.6	721.5	717.4	722.8	720.1	729.7	729.7	728.3
32.5°	665.3	665.3	670.8	677.7	672.2	669.4	673.6	674.9	681.8	681.8	677.7
35°	610.6	613.3	617.4	621.5	617.4	614.7	618.8	617.4	625.6	622.9	618.8
37.5°	555.8	557.2	561.3	566.8	561.3	557.2	558.6	557.2	564.0	564.0	557.2
40°	505.2	507.9	510.6	516.1	510.6	507.9	509.3	505.2	513.4	510.6	506.5
42.5°	464.1	465.5	469.6	472.3	466.8	465.5	466.8	464.1	468.2	465.5	457.2
45°	432.6	432.6	434.0	438.1	432.6	431.2	431.2	428.5	432.6	427.1	418.9
47.5°	405.2	406.6	408.0	410.7	406.6	402.5	403.9	398.4	401.1	397.0	386.1
50°	377.8	380.6	382.0	384.7	380.6	377.8	379.2	373.7	373.7	366.9	357.3
52.5°	350.5	351.8	350.5	353.2	350.5	346.4	347.7	342.3	342.3	334.0	324.5
55°	305.3	306.7	308.0	310.8	308.0	303.9	306.7	302.6	302.6	297.1	286.1
57.5°	260.1	261.5	262.8	264.2	264.2	261.5	262.8	260.1	258.7	254.6	246.4
60°	231.4	231.4	231.4	232.7	231.4	230.0	230.0	227.3	227.3	221.8	213.6
62.5°	209.5	210.8	210.8	212.2	210.8	209.5	208.1	205.4	204.0	198.5	191.7
65°	188.9	188.9	187.6	190.3	188.9	187.6	187.6	184.8	182.1	176.6	169.8
67.5°	164.3	165.6	164.3	165.6	165.6	164.3	162.9	160.2	158.8	154.7	146.5
70°	138.3	138.3	138.3	139.6	138.3	138.3	139.6	135.5	134.2	128.7	121.8
72.5°	112.3	113.6	113.6	112.3	113.6	110.9	110.9	110.9	109.5	104.0	97.2
75°	86.2	87.6	87.6	89.0	87.6	86.2	86.2	84.9	83.5	79.4	73.9
77.5°	64.3	64.3	65.7	65.7	65.7	64.3	64.3	61.6	61.6	58.9	53.4
80°	46.5	46.5	45.2	46.5	46.5	45.2	45.2	43.8	43.8	41.1	37.0
82.5°	30.1	31.5	31.5	31.5	31.5	30.1	30.1	30.1	28.7	27.4	24.6
85°	19.2	19.2	19.2	19.2	20.5	19.2	20.5	19.2	19.2	16.4	15.1
87.5°	8.2	8.2	8.2	9.6	9.6	8.2	8.2	8.2	8.2	8.2	6.8
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°	889.9	889.9	889.9	889.9	889.9	889.9	889.9	889.9	889.9	889.9	889.9
2.5°	888.5	889.9	885.7	891.2	887.1	888.5	889.9	888.5	883.0	883.0	898.1
5°	883.0	885.7	881.6	888.5	885.7	885.7	888.5	887.1	881.6	883.0	896.7
7.5°	877.5	881.6	878.9	885.7	881.6	881.6	884.4	884.4	878.9	880.3	892.6
10°	869.3	874.8	873.4	880.3	876.2	876.2	880.3	880.3	874.8	876.2	888.5
12.5°	862.5	868.0	866.6	873.4	870.7	872.1	873.4	876.2	869.3	872.1	883.0
15°	851.5	857.0	857.0	863.8	861.1	863.8	866.6	870.7	865.2	865.2	876.2
17.5°	839.2	846.0	846.0	851.5	851.5	852.9	858.4	862.5	857.0	858.4	868.0
20°	825.5	833.7	833.7	840.6	839.2	841.9	846.0	850.2	844.7	844.7	855.6
22.5°	811.8	818.7	820.0	824.1	824.1	825.5	829.6	832.4	825.5	825.5	836.5
25°	792.7	799.5	800.9	803.6	800.9	800.9	803.6	806.3	799.5	799.5	809.1
27.5°	766.6	773.5	773.5	772.1	769.4	770.8	769.4	770.8	763.9	762.5	772.1
30°	728.3	732.4	732.4	731.0	726.9	726.9	722.8	724.2	714.6	714.6	722.8
32.5°	676.3	680.4	677.7	674.9	669.4	666.7	664.0	662.6	653.0	653.0	662.6
35°	614.7	617.4	613.3	607.8	601.0	596.9	592.8	587.3	580.5	581.8	587.3
37.5°	551.7	551.7	546.2	535.3	529.8	523.0	516.1	516.1	505.2	503.8	507.9
40°	498.3	492.8	483.3	468.2	458.6	451.8	442.2	436.7	428.5	428.5	435.3
42.5°	450.4	439.5	427.1	406.6	397.0	388.8	376.5	371.0	361.4	360.0	364.2
45°	408.0	397.0	379.2	357.3	345.0	335.4	317.6	310.8	302.6	301.2	303.9
47.5°	373.7	361.4	339.5	310.8	298.4	286.1	268.3	258.7	251.9	247.8	251.9
50°	343.6	327.2	303.9	273.8	257.4	246.4	224.5	214.9	205.4	202.6	204.0
52.5°	310.8	294.3	269.7	238.2	223.1	206.7	186.2	172.5	164.3	160.2	164.3
55°	275.2	258.7	234.1	202.6	186.2	171.1	149.2	138.3	128.7	124.6	128.7
57.5°	236.8	221.8	199.9	168.4	153.3	139.6	119.1	108.2	98.6	95.8	98.6
60°	204.0	191.7	169.8	139.6	127.3	112.3	94.5	83.5	75.3	73.9	75.3
62.5°	182.1	168.4	147.9	119.1	106.8	94.5	78.0	67.1	60.2	58.9	60.2
65°	160.2	145.1	125.9	101.3	89.0	79.4	63.0	53.4	46.5	45.2	46.5
67.5°	135.5	121.8	105.4	83.5	73.9	64.3	50.7	41.1	35.6	34.2	35.6
70°	112.3	99.9	83.5	67.1	57.5	50.7	38.3	31.5	26.0	24.6	26.0
72.5°	89.0	78.0	64.3	50.7	45.2	38.3	30.1	23.3	19.2	17.8	19.2
75°	68.5	60.2	49.3	37.0	32.9	28.7	20.5	16.4	13.7	12.3	13.7
77.5°	47.9	42.4	34.2	27.4	23.3	20.5	15.1	11.0	9.6	8.2	9.6
80°	32.9	28.7	23.3	17.8	15.1	12.3	9.6	6.8	5.5	5.5	5.5
82.5°	21.9	17.8	13.7	11.0	9.6	8.2	5.5	4.1	4.1	2.7	2.7
85°	12.3	11.0	8.2	6.8	5.5	4.1	2.7	2.7	1.4	1.4	1.4
87.5°	5.5	4.1	2.7	2.7	1.4	1.4	1.4	1.4	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°	889.9	889.9	889.9	889.9	889.9	889.9	889.9	889.9	889.9	889.9	889.9
2.5°	894.0	889.9	895.3	889.9	887.1	889.9	887.1	895.3	888.5	883.0	888.5
5°	892.6	887.1	892.6	888.5	884.4	885.7	883.0	891.2	883.0	878.9	881.6
7.5°	889.9	885.7	888.5	884.4	880.3	881.6	878.9	885.7	877.5	873.4	876.2
10°	885.7	881.6	883.0	880.3	876.2	876.2	873.4	878.9	869.3	863.8	866.6
12.5°	880.3	874.8	877.5	873.4	868.0	868.0	865.2	869.3	859.7	854.3	855.6
15°	873.4	868.0	868.0	863.8	858.4	858.4	852.9	857.0	846.0	840.6	840.6
17.5°	865.2	858.4	858.4	854.3	847.4	846.0	841.9	846.0	833.7	828.2	828.2
20°	852.9	847.4	846.0	843.3	836.5	835.1	829.6	831.0	821.4	817.3	815.9
22.5°	836.5	831.0	832.4	828.2	822.8	821.4	815.9	820.0	810.5	806.3	807.7
25°	807.7	805.0	807.7	806.3	802.2	802.2	799.5	802.2	794.0	791.3	792.7
27.5°	774.9	773.5	774.9	774.9	772.1	772.1	772.1	776.2	768.0	766.6	766.6
30°	726.9	726.9	728.3	729.7	729.7	732.4	731.0	736.5	731.0	728.3	731.0
32.5°	664.0	669.4	673.6	673.6	673.6	676.3	679.0	683.1	677.7	679.0	679.0
35°	592.8	596.9	599.6	606.5	602.4	611.9	614.7	620.2	618.8	621.5	620.2
37.5°	513.4	518.9	524.3	533.9	532.5	543.5	549.0	559.9	557.2	562.7	565.4
40°	439.5	447.7	455.9	462.7	468.2	479.2	490.1	503.8	507.9	512.0	513.4
42.5°	368.3	376.5	390.2	399.8	408.0	425.8	440.8	457.2	461.4	469.6	472.3
45°	310.8	317.6	334.0	346.4	353.2	379.2	397.0	417.5	424.4	434.0	438.1
47.5°	257.4	269.7	286.1	301.2	310.8	338.1	361.4	383.3	392.9	403.9	409.3
50°	210.8	224.5	246.4	260.1	273.8	303.9	329.9	353.2	362.8	375.1	380.6
52.5°	172.5	187.6	208.1	223.1	238.2	269.7	297.1	319.0	331.3	339.5	347.7
55°	135.5	152.0	172.5	188.9	201.2	235.5	258.7	280.6	288.9	295.7	299.8
57.5°	105.4	117.7	138.3	152.0	167.0	197.1	220.4	236.8	243.7	251.9	254.6
60°	82.1	94.5	113.6	127.3	141.0	169.8	193.0	209.5	216.3	223.1	227.3
62.5°	65.7	78.0	95.8	108.2	120.5	146.5	167.0	183.4	191.7	198.5	202.6
65°	52.0	63.0	78.0	90.4	99.9	123.2	143.7	158.8	167.0	173.9	178.0
67.5°	41.1	50.7	64.3	72.6	82.1	101.3	119.1	132.8	139.6	147.9	152.0
70°	31.5	38.3	50.7	57.5	64.3	80.8	94.5	108.2	115.0	120.5	123.2
72.5°	23.3	28.7	38.3	43.8	47.9	61.6	72.6	82.1	87.6	93.1	95.8
75°	16.4	20.5	27.4	31.5	34.2	43.8	53.4	60.2	64.3	68.5	72.6
77.5°	11.0	13.7	17.8	20.5	23.3	30.1	35.6	41.1	45.2	49.3	50.7
80°	6.8	9.6	12.3	13.7	15.1	19.2	24.6	27.4	30.1	32.9	34.2
82.5°	4.1	5.5	6.8	8.2	9.6	12.3	15.1	17.8	19.2	21.9	23.3
85°	1.4	2.7	2.7	4.1	4.1	6.8	8.2	9.6	11.0	12.3	13.7
87.5°	0.0	0.0	1.4	1.4	1.4	1.4	2.7	2.7	2.7	2.7	2.7
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):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	889.9	889.9	889.9	889.9	889.9	889.9	889.9	889.9
2.5°	894.0	889.9	887.1	885.7	895.3	883.0	888.5	889.9
5°	888.5	884.4	881.6	880.3	888.5	877.5	881.6	884.4
7.5°	880.3	877.5	873.4	872.1	880.3	868.0	873.4	874.8
10°	870.7	866.6	863.8	862.5	869.3	857.0	862.5	862.5
12.5°	858.4	855.6	850.2	850.2	855.6	844.7	848.8	848.8
15°	841.9	839.2	833.7	833.7	839.2	828.2	832.4	832.4
17.5°	828.2	825.5	821.4	820.0	825.5	814.6	818.7	817.3
20°	817.3	814.6	809.1	809.1	813.2	802.2	806.3	806.3
22.5°	807.7	806.3	800.9	800.9	806.3	795.4	798.1	795.4
25°	792.7	791.3	785.8	787.2	789.9	779.0	783.1	780.3
27.5°	768.0	768.0	762.5	761.2	765.3	755.7	758.4	757.1
30°	729.7	731.0	724.2	724.2	725.6	717.4	721.5	720.1
32.5°	677.7	679.0	673.6	672.2	676.3	669.4	672.2	672.2
35°	620.2	621.5	617.4	617.4	621.5	617.4	617.4	616.1
37.5°	562.7	565.4	562.7	564.0	566.8	562.7	565.4	564.0
40°	516.1	518.9	514.7	517.5	520.2	516.1	520.2	517.5
42.5°	473.7	477.8	475.0	477.8	480.5	477.8	480.5	476.4
45°	442.2	444.9	443.6	444.9	447.7	446.3	447.7	446.3
47.5°	412.1	417.5	414.8	417.5	421.7	418.9	421.7	417.5
50°	384.7	388.8	387.4	390.2	391.5	390.2	392.9	388.8
52.5°	349.1	353.2	351.8	351.8	354.6	351.8	354.6	351.8
55°	302.6	303.9	303.9	305.3	303.9	302.6	303.9	301.2
57.5°	257.4	260.1	256.0	260.1	258.7	257.4	257.4	254.6
60°	228.6	232.7	230.0	232.7	231.4	231.4	231.4	230.0
62.5°	205.4	208.1	205.4	206.7	206.7	206.7	205.4	204.0
65°	179.3	183.4	180.7	182.1	180.7	179.3	180.7	179.3
67.5°	153.3	154.7	154.7	153.3	153.3	153.3	153.3	150.6
70°	124.6	125.9	124.6	127.3	125.9	124.6	125.9	123.2
72.5°	97.2	98.6	97.2	98.6	97.2	97.2	97.2	97.2
75°	72.6	73.9	73.9	73.9	73.9	73.9	71.2	73.9
77.5°	52.0	52.0	52.0	53.4	52.0	52.0	52.0	52.0
80°	35.6	35.6	35.6	37.0	35.6	37.0	35.6	37.0
82.5°	23.3	23.3	23.3	23.3	23.3	23.3	23.3	23.3
85°	12.3	13.7	13.7	12.3	12.3	12.3	12.3	12.3
87.5°	2.7	1.4	1.4	1.4	1.4	1.4	1.4	1.4
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)