

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: SHAPER

Report Number: 20052

Luminaire Tested: **608-38-T5/2/21**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: 20052
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: SHAPER
Catalog Number: 608-38-T5/2/21
Description: WITH WHITE INTERIOR AND WHITE PLASTIC LENS

Light Source: TWO SYLVANIA 21 WATT T5 LAMPS

FP21/835/HO. LUMEN RATING = 1890 LMS.

Ballast/Driver: -

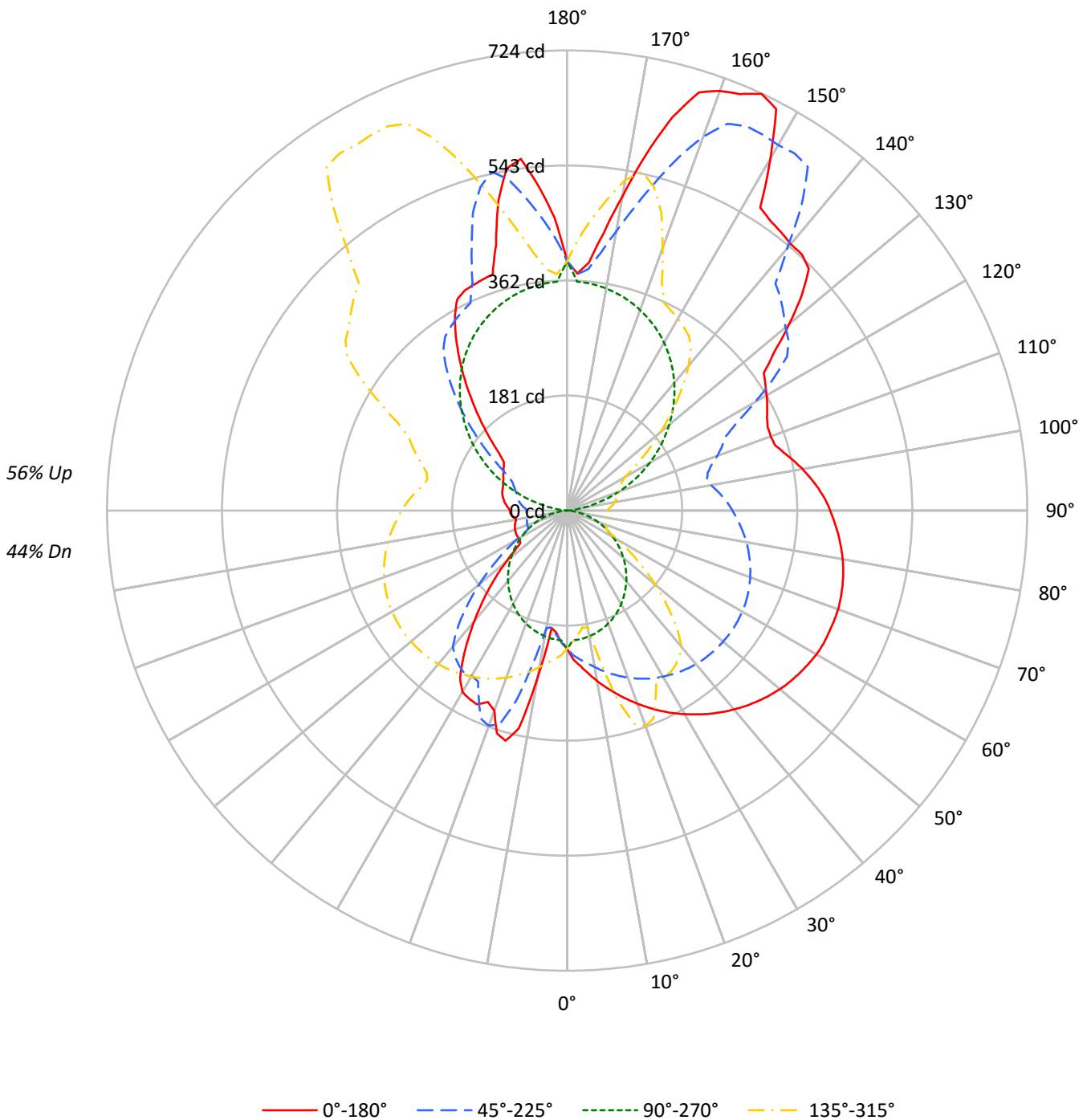
Summary

Lumens per Lamp: 1890 (2 lamps)
Luminaire Lumens: 3038.8 lumens
Efficiency: 80.4%
Efficacy: 63.3 lumens/watt
Spacing Criteria (0/90/45): 1.97 / 1.17 / 1.85
Luminous Opening: Rectangular w/ Sides (W: 0.35' x L: 3.19' x H: 0.62')
CIE Type: General Diffuse

Input Watts (W): 48
Input Voltage (V): NR
Input Current (A_{in}): 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	85	85	85	85	78	78	78	78	64	64	64	52	52	52	41	41	41	35
1	75	71	67	64	69	65	62	58	53	51	48	43	41	39	33	31	30	26
2	68	61	55	51	62	56	51	46	46	42	39	36	34	31	28	26	24	20
3	62	53	46	41	56	48	43	38	40	35	32	31	28	26	24	22	20	16
4	56	47	40	34	51	42	36	32	35	30	26	28	24	21	21	18	16	13
5	51	41	34	29	46	38	31	27	31	26	22	25	21	18	19	16	14	11
6	47	37	30	25	43	34	27	23	28	23	19	22	18	16	17	14	12	10
7	43	33	26	21	39	30	24	20	25	20	17	20	16	14	15	13	11	8
8	40	30	23	19	36	27	21	17	23	18	15	18	15	12	14	11	9	7
9	37	27	21	17	34	25	19	15	21	16	13	17	13	11	13	10	8	6
10	35	25	19	15	32	23	17	14	19	14	11	15	12	9	12	9	7	6

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	2094	2094	2094	2094
5°	2342	1707	1837	1707
10°	2577	1497	2517	1497
15°	2826	1325	3558	1325
20°	3098	1179	3208	1179
25°	3391	1051	3279	1051
30°	3702	936	3298	936
35°	4044	829	2964	829
40°	4420	733	2463	733
45°	4841	642	1979	642
50°	5323	556	1528	556
55°	5872	474	1181	474
60°	6532	395	1271	395
65°	7316	318	1420	318
70°	8341	243	1602	243
75°	9687	170	1835	170
80°	11631	99	2147	99
85°	14706	40	3001	40



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ZONAL LUMENS:

Zone	Lumens	% Fixture	% Lamp
0°-10°	20.8	0.7	0.5
10°-20°	76.3	2.5	2.0
20°-30°	134.3	4.4	3.6
30°-40°	179.7	5.9	4.8
40°-50°	195.0	6.4	5.2
50°-60°	194.0	6.4	5.1
60°-70°	187.6	6.2	5.0
70°-80°	178.6	5.9	4.7
80°-90°	167.7	5.5	4.4
90°-100°	158.6	5.2	4.2
100°-110°	163.6	5.4	4.3
110°-120°	191.3	6.3	5.1
120°-130°	237.8	7.8	6.3
130°-140°	272.2	9.0	7.2
140°-150°	272.7	9.0	7.2
150°-160°	228.7	7.5	6.1
160°-170°	138.5	4.6	3.7
170°-180°	41.4	1.4	1.1
0°-30°	231.4	7.6	6.1
0°-40°	411.1	13.5	10.9
0°-60°	800.0	26.3	21.2
0°-90°	1333.8	43.9	35.3
90°-120°	513.5	16.9	13.6
90°-150°	1296.2	42.7	34.3
90°-180°	1705.0	56.1	45.1
0°-180°	3038.8	100.0	80.4

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	217	217	217	217	217	
5°	246	204	193	204	246	24
15°	298	196	375	196	298	85
25°	348	180	336	180	348	161
35°	390	158	286	158	390	245
45°	424	130	173	130	424	328
55°	446	100	90	100	446	400
65°	454	67	88	67	454	451
75°	449	35	85	35	449	474
85°	428	8	87	8	428	352
90°	414	0	90	0	414	227
95°	397	7	96	7	397	320
105°	353	54	106	54	353	375
115°	347	118	111	118	347	346
125°	378	180	122	180	378	351
135°	538	237	185	237	538	403
145°	557	285	297	285	557	355
155°	724	322	382	322	724	325
165°	641	347	432	347	641	181
175°	392	360	512	360	392	41
180°	392	392	392	392	392	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	217.2	217.2	217.2	217.2	217.2	217.2	217.2	217.2	217.2	217.2	217.2
2.5°	234.9	233.7	228.1	219.4	204.5	206.8	206.9	207.6	207.5	207.6	206.9
5°	246.1	243.6	235.2	223.2	203.7	200.1	195.9	193.6	193.1	193.6	195.9
7.5°	258.9	255.4	242.1	226.1	202.6	193.9	185.2	182.5	186.3	182.5	185.2
10°	272.3	267.6	250.1	228.2	200.7	187.5	187.6	240.4	265.9	240.4	187.6
12.5°	285.2	279.8	258.1	229.7	198.6	180.8	243.8	326.1	351.3	326.1	243.8
15°	297.9	291.2	265.6	230.7	195.8	177.5	309.5	366.4	375.0	366.4	309.5
17.5°	310.8	302.9	272.8	231.9	192.7	195.6	351.9	371.5	367.4	371.5	351.9
20°	323.3	313.8	279.7	232.9	189.0	226.0	360.3	345.6	334.8	345.6	360.3
22.5°	335.7	324.4	286.0	233.7	184.9	260.4	354.6	318.1	326.1	318.1	354.6
25°	347.7	334.8	291.9	233.8	180.4	291.3	328.7	327.2	336.2	327.2	328.7
27.5°	359.2	344.3	297.0	233.4	175.4	313.4	303.3	327.4	333.8	327.4	303.3
30°	369.9	353.1	301.6	232.4	170.0	320.5	300.2	323.4	329.5	323.4	300.2
32.5°	380.1	361.5	305.6	231.0	164.0	317.6	302.4	317.2	313.5	317.2	302.4
35°	390.4	369.7	309.5	229.3	157.8	309.3	297.0	297.0	286.1	297.0	297.0
37.5°	399.7	377.2	312.7	227.0	151.4	292.1	289.9	269.8	255.9	269.8	289.9
40°	408.5	384.2	315.4	224.5	144.8	269.2	279.6	241.8	227.6	241.8	279.6
42.5°	416.7	390.4	317.4	221.4	137.7	246.5	258.2	213.8	199.8	213.8	258.2
45°	424.1	396.2	318.9	217.9	130.5	233.1	232.5	186.7	173.4	186.7	232.5
47.5°	431.0	401.4	319.9	214.0	123.0	225.9	205.9	161.4	148.6	161.4	205.9
50°	437.1	405.8	320.5	209.7	115.4	218.7	180.0	137.7	125.5	137.7	180.0
52.5°	442.1	409.6	320.8	205.1	107.6	208.5	155.5	115.7	104.9	115.7	155.5
55°	446.3	412.3	320.4	200.2	99.5	196.4	132.4	96.4	89.8	96.4	132.4
57.5°	449.8	414.5	319.5	195.1	91.5	180.1	111.2	85.0	87.8	85.0	111.2
60°	452.8	416.3	318.2	189.8	83.4	158.8	92.0	82.4	88.1	82.4	92.0
62.5°	454.4	416.8	316.3	184.3	75.2	135.2	75.6	82.7	88.3	82.7	75.6
65°	454.4	416.3	313.5	178.4	67.0	112.2	67.0	82.8	88.2	82.8	67.0
67.5°	454.4	415.1	310.2	172.6	58.7	90.6	66.8	82.6	87.9	82.6	66.8
70°	453.9	413.6	306.6	166.4	50.6	71.4	66.7	82.1	87.2	82.1	66.7
72.5°	451.8	410.8	302.2	160.3	42.6	54.6	66.3	81.3	86.2	81.3	66.3
75°	448.7	407.2	297.3	153.9	34.7	41.3	65.6	80.4	85.0	80.4	65.6
77.5°	445.1	403.2	292.2	147.6	27.0	36.5	64.6	78.8	83.4	78.8	64.6
80°	440.4	398.1	286.5	141.1	19.7	36.1	63.2	76.8	81.3	76.8	63.2
82.5°	434.4	392.0	280.1	134.5	12.4	35.3	61.0	77.6	84.1	77.6	61.0
85°	428.3	385.7	273.6	128.2	7.6	34.0	61.4	81.0	87.4	81.0	61.4
87.5°	421.0	378.6	266.8	122.0	4.0	32.0	64.2	83.2	89.7	83.2	64.2
90°	413.9	371.6	260.1	116.0	0.0	32.1	63.5	83.1	90.0	83.1	63.5
92.5°	406.4	364.3	253.5	110.7	2.3	34.7	65.3	85.5	92.5	85.5	65.3
95°	397.0	355.3	245.9	105.4	6.7	38.7	69.4	89.1	96.0	89.1	69.4
97.5°	386.9	345.8	238.0	108.4	13.2	42.1	73.0	92.3	99.1	92.3	73.0
100°	376.1	335.7	229.9	123.2	25.3	43.9	76.2	95.2	101.7	95.2	76.2
102.5°	364.4	325.2	225.4	138.7	38.5	47.6	78.8	97.6	103.9	97.6	78.8
105°	352.8	314.3	228.9	160.6	54.0	52.1	80.1	99.4	105.8	99.4	80.1
107.5°	342.9	311.1	238.1	196.2	70.1	57.9	82.6	100.2	106.7	100.2	82.6
110°	340.9	312.0	251.3	232.3	86.3	71.2	85.6	101.8	107.5	101.8	85.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	341.7	317.1	263.7	254.0	102.3	90.0	89.2	103.7	109.1	103.7	89.2
115°	347.0	326.0	275.2	270.1	118.3	111.6	93.1	106.2	111.0	106.2	93.1
117.5°	354.9	335.7	301.1	290.2	134.2	135.8	97.3	109.1	113.3	109.1	97.3
120°	362.6	344.0	341.1	311.2	149.9	160.8	104.9	112.0	115.8	112.0	104.9
122.5°	369.6	352.6	383.7	357.5	165.2	185.9	122.2	115.1	118.6	115.1	122.2
125°	377.8	384.3	422.1	416.4	180.3	210.1	143.5	118.7	121.7	118.7	143.5
127.5°	411.7	427.0	439.4	468.4	195.1	229.5	166.2	130.1	125.4	130.1	166.2
130°	455.9	471.5	448.3	495.1	209.4	242.9	191.0	150.0	139.0	150.0	191.0
132.5°	500.2	509.9	461.2	509.5	223.3	255.3	217.4	173.3	160.5	173.3	217.4
135°	537.7	522.7	474.4	525.2	236.9	266.8	244.2	198.4	184.6	198.4	244.2
137.5°	546.8	525.9	484.8	541.3	249.8	278.5	271.2	224.7	210.6	224.7	271.2
140°	547.3	532.6	538.8	555.0	262.2	294.1	296.9	253.1	238.2	253.1	296.9
142.5°	552.5	539.1	606.2	563.7	273.9	326.4	319.6	281.9	267.8	281.9	319.6
145°	557.0	543.7	660.2	562.2	285.0	365.3	334.6	310.3	297.0	310.3	334.6
147.5°	565.2	608.5	666.2	552.5	295.4	407.2	341.9	336.9	325.9	336.9	341.9
150°	639.8	681.4	664.1	539.2	304.9	443.1	348.8	359.9	353.1	359.9	348.8
152.5°	712.1	717.3	666.7	522.6	313.8	470.0	354.3	370.6	374.6	370.6	354.3
155°	723.5	704.1	667.2	503.3	321.9	491.3	360.2	374.4	381.7	374.4	360.2
157.5°	709.4	698.1	658.6	483.2	329.2	501.4	389.6	377.8	384.6	377.8	389.6
160°	702.6	691.9	625.8	464.5	335.7	495.6	439.3	380.8	387.0	380.8	439.3
162.5°	690.0	668.8	582.4	446.4	341.6	484.6	492.1	401.2	389.6	401.2	492.1
165°	641.0	613.8	534.3	428.3	346.8	472.0	527.3	459.1	432.5	459.1	527.3
167.5°	573.9	550.4	488.1	411.5	351.2	458.4	545.7	519.6	499.8	519.6	545.7
170°	502.1	486.5	446.2	396.5	354.8	444.0	528.2	551.4	546.7	551.4	528.2
172.5°	440.2	430.9	409.7	383.1	357.5	429.1	495.9	542.4	558.0	542.4	495.9
175°	391.7	388.2	381.3	373.7	359.5	413.4	462.7	498.1	511.7	498.1	462.7
177.5°	373.0	372.2	372.2	372.5	360.5	396.9	429.4	452.6	461.6	452.6	429.4
180°	392.0	392.0	392.0	392.0	392.0	392.0	392.0	392.0	392.0	392.0	392.0



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	217.2	217.2	217.2	217.2	217.2	217.2
2.5°	206.8	204.5	219.4	228.1	233.7	234.9
5°	200.1	203.7	223.2	235.2	243.6	246.1
7.5°	193.9	202.6	226.1	242.1	255.4	258.9
10°	187.5	200.7	228.2	250.1	267.6	272.3
12.5°	180.8	198.6	229.7	258.1	279.8	285.2
15°	177.5	195.8	230.7	265.6	291.2	297.9
17.5°	195.6	192.7	231.9	272.8	302.9	310.8
20°	226.0	189.0	232.9	279.7	313.8	323.3
22.5°	260.4	184.9	233.7	286.0	324.4	335.7
25°	291.3	180.4	233.8	291.9	334.8	347.7
27.5°	313.4	175.4	233.4	297.0	344.3	359.2
30°	320.5	170.0	232.4	301.6	353.1	369.9
32.5°	317.6	164.0	231.0	305.6	361.5	380.1
35°	309.3	157.8	229.3	309.5	369.7	390.4
37.5°	292.1	151.4	227.0	312.7	377.2	399.7
40°	269.2	144.8	224.5	315.4	384.2	408.5
42.5°	246.5	137.7	221.4	317.4	390.4	416.7
45°	233.1	130.5	217.9	318.9	396.2	424.1
47.5°	225.9	123.0	214.0	319.9	401.4	431.0
50°	218.7	115.4	209.7	320.5	405.8	437.1
52.5°	208.5	107.6	205.1	320.8	409.6	442.1
55°	196.4	99.5	200.2	320.4	412.3	446.3
57.5°	180.1	91.5	195.1	319.5	414.5	449.8
60°	158.8	83.4	189.8	318.2	416.3	452.8
62.5°	135.2	75.2	184.3	316.3	416.8	454.4
65°	112.2	67.0	178.4	313.5	416.3	454.4
67.5°	90.6	58.7	172.6	310.2	415.1	454.4
70°	71.4	50.6	166.4	306.6	413.6	453.9
72.5°	54.6	42.6	160.3	302.2	410.8	451.8
75°	41.3	34.7	153.9	297.3	407.2	448.7
77.5°	36.5	27.0	147.6	292.2	403.2	445.1
80°	36.1	19.7	141.1	286.5	398.1	440.4
82.5°	35.3	12.4	134.5	280.1	392.0	434.4
85°	34.0	7.6	128.2	273.6	385.7	428.3
87.5°	32.0	4.0	122.0	266.8	378.6	421.0
90°	32.1	0.0	116.0	260.1	371.6	413.9
92.5°	34.7	2.3	110.7	253.5	364.3	406.4
95°	38.7	6.7	105.4	245.9	355.3	397.0
97.5°	42.1	13.2	108.4	238.0	345.8	386.9
100°	43.9	25.3	123.2	229.9	335.7	376.1
102.5°	47.6	38.5	138.7	225.4	325.2	364.4
105°	52.1	54.0	160.6	228.9	314.3	352.8
107.5°	57.9	70.1	196.2	238.1	311.1	342.9
110°	71.2	86.3	232.3	251.3	312.0	340.9



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	90.0	102.3	254.0	263.7	317.1	341.7
115°	111.6	118.3	270.1	275.2	326.0	347.0
117.5°	135.8	134.2	290.2	301.1	335.7	354.9
120°	160.8	149.9	311.2	341.1	344.0	362.6
122.5°	185.9	165.2	357.5	383.7	352.6	369.6
125°	210.1	180.3	416.4	422.1	384.3	377.8
127.5°	229.5	195.1	468.4	439.4	427.0	411.7
130°	242.9	209.4	495.1	448.3	471.5	455.9
132.5°	255.3	223.3	509.5	461.2	509.9	500.2
135°	266.8	236.9	525.2	474.4	522.7	537.7
137.5°	278.5	249.8	541.3	484.8	525.9	546.8
140°	294.1	262.2	555.0	538.8	532.6	547.3
142.5°	326.4	273.9	563.7	606.2	539.1	552.5
145°	365.3	285.0	562.2	660.2	543.7	557.0
147.5°	407.2	295.4	552.5	666.2	608.5	565.2
150°	443.1	304.9	539.2	664.1	681.4	639.8
152.5°	470.0	313.8	522.6	666.7	717.3	712.1
155°	491.3	321.9	503.3	667.2	704.1	723.5
157.5°	501.4	329.2	483.2	658.6	698.1	709.4
160°	495.6	335.7	464.5	625.8	691.9	702.6
162.5°	484.6	341.6	446.4	582.4	668.8	690.0
165°	472.0	346.8	428.3	534.3	613.8	641.0
167.5°	458.4	351.2	411.5	488.1	550.4	573.9
170°	444.0	354.8	396.5	446.2	486.5	502.1
172.5°	429.1	357.5	383.1	409.7	430.9	440.2
175°	413.4	359.5	373.7	381.3	388.2	391.7
177.5°	396.9	360.5	372.5	372.2	372.2	373.0
180°	392.0	392.0	392.0	392.0	392.0	392.0

(END OF REPORT)