

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: HALO

Report Number: C2103279A001

Luminaire Tested: **LT6089FS231EWHDMR**

Test Date: 2021-01-20



**Test Information**

Test Method: LM-41-14  
Report Number: C2103279A001  
Test Lab: EVERFINE  
Test Date: 2021-01-20  
Issue Date: 2021-02-19 09:53:23  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO  
Catalog Number: LT6089FS231EWHDMR  
Description: LT6089FS231EWHDMR  
Light Source: -  
Ballast/Driver: -

**Summary**

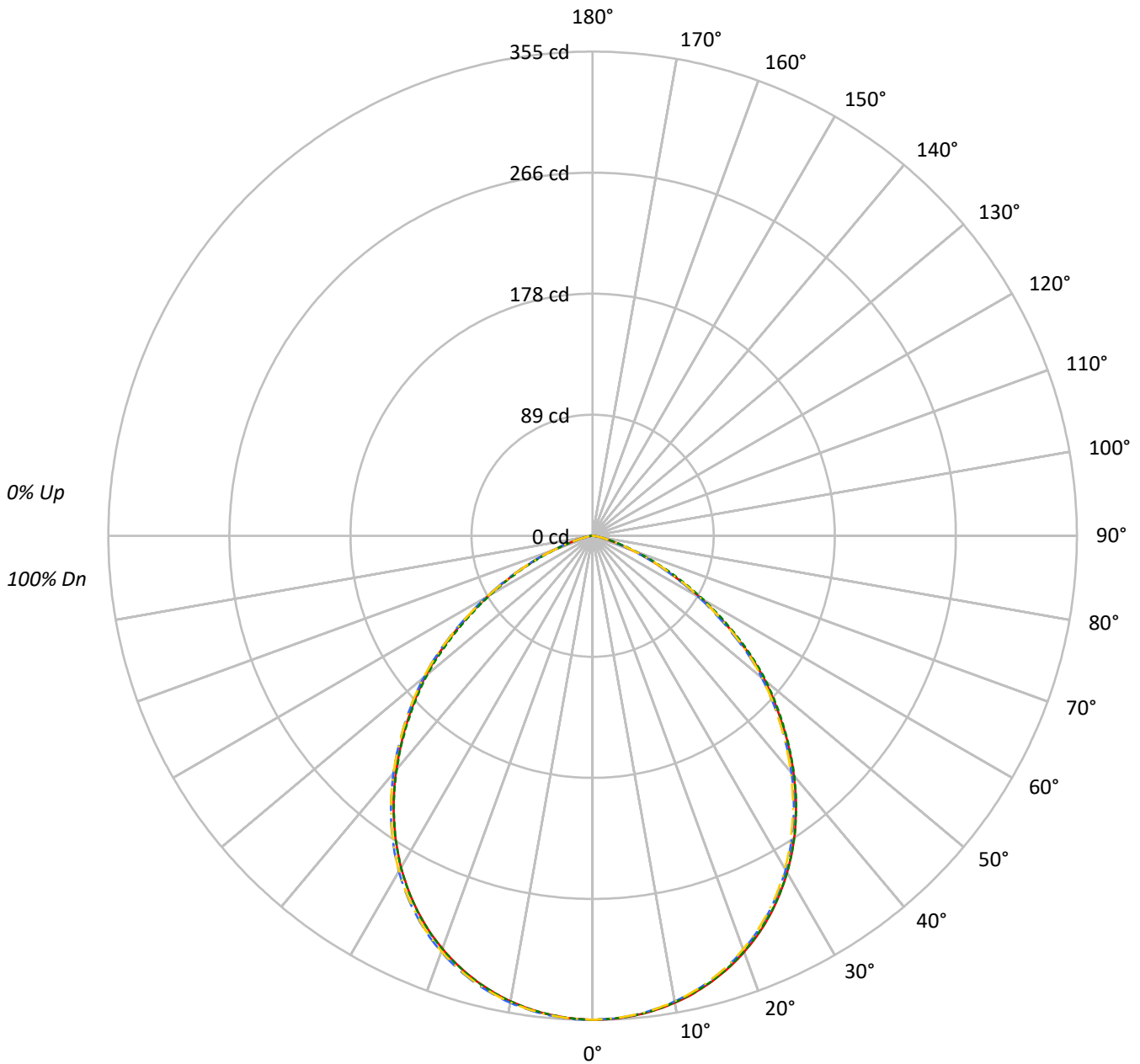
Lumens per Lamp: 766.07 (1 lamp)  
Luminaire Lumens: 766.1 lumens  
Efficiency: 100.0%  
Efficacy: 93.6 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.19 / 1.27  
Luminous Opening: Circular (Dia: 0.5' x H: 0')  
CIE Type: Direct

Input Watts (W): 8.18233  
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	107	104	100	108	105	102	99	101	98	96	97	95	93	93	92	90	88																			
2	102	95	90	85	100	94	88	84	90	86	82	87	83	80	84	81	78	76																			
3	94	85	78	72	92	84	77	72	81	75	71	78	73	69	76	72	68	66																			
4	87	76	69	63	85	75	68	62	73	66	61	70	65	61	68	64	60	58																			
5	81	69	61	55	79	68	60	54	66	59	54	64	58	53	62	57	53	51																			
6	75	62	54	48	73	62	54	48	60	53	48	58	52	47	57	51	47	45																			
7	69	57	49	43	68	56	49	43	55	48	43	53	47	42	52	46	42	40																			
8	65	52	44	39	63	52	44	39	50	43	39	49	43	38	48	42	38	36																			
9	61	48	40	35	59	48	40	35	46	40	35	45	39	35	44	39	35	33																			
10	57	45	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	19455	19455	19455	19455
5°	19430	19424	19407	19401
10°	19355	19338	19292	19293
15°	19192	19180	19091	19100
20°	18944	18928	18793	18805
25°	18580	18569	18363	18378
30°	18056	18053	17777	17781
35°	17344	17348	16990	16980
40°	16423	16456	16016	15977
45°	15306	15370	14882	14809
50°	14037	14156	13611	13472
55°	12231	12440	11854	11627
60°	9993	10316	9713	9504
65°	7535	7955	7369	7132
70°	4895	5366	4792	4546
75°	2690	3001	2648	2408
80°	1316	1547	1256	1143
85°	780	1025	767	761



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture	% Lamp
0°-10°	33.5	4.4	4.4
10°-20°	95.1	12.4	12.4
20°-30°	140.5	18.3	18.3
30°-40°	160.1	20.9	20.9
40°-50°	149.9	19.6	19.6
50°-60°	112.4	14.7	14.7
60°-70°	57.9	7.6	7.6
70°-80°	15.1	2.0	2.0
80°-90°	1.7	0.2	0.2
90°-100°	0.0	0.0	0.0
100°-110°	0.0	0.0	0.0
110°-120°	0.0	0.0	0.0
120°-130°	0.0	0.0	0.0
130°-140°	0.0	0.0	0.0
140°-150°	0.0	0.0	0.0
150°-160°	0.0	0.0	0.0
160°-170°	0.0	0.0	0.0
170°-180°	0.0	0.0	0.0
0°-30°	269.0	35.1	35.1
0°-40°	429.1	56.0	56.0
0°-60°	691.4	90.3	90.3
0°-90°	766.1	100.0	100.0
90°-120°	0.0	0.0	0.0
90°-150°	0.0	0.0	0.0
90°-180°	0.0	0.0	0.0
0°-180°	766.1	100.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	355	355	355	355	355	
5°	353	353	353	353	353	34
15°	338	338	336	337	338	95
25°	307	307	304	304	307	141
35°	259	259	254	254	259	162
45°	197	198	192	191	197	152
55°	128	130	124	122	128	114
65°	58	61	57	55	58	58
75°	13	14	12	11	13	15
85°	1	2	1	1	1	2
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°
0°	354.9	354.9	354.9	354.9	354.9	354.9	354.9	354.9	354.9	354.9	354.9
1°	354.8	354.6	354.8	354.6	354.5	354.7	354.7	354.8	355.0	354.6	354.6
2°	354.7	354.5	354.5	354.4	354.3	354.4	354.4	354.6	354.8	354.4	354.4
3°	354.4	354.1	354.0	354.1	353.8	354.0	354.0	354.2	354.4	353.9	354.1
4°	353.7	353.5	353.4	353.7	353.2	353.4	353.3	353.7	354.0	353.3	353.5
5°	353.1	352.8	352.7	353.0	352.5	352.7	352.7	353.1	353.4	352.6	352.9
6°	352.4	351.9	351.7	352.2	351.6	351.8	351.8	352.2	352.6	351.7	352.1
7°	351.5	350.9	350.6	351.2	350.6	350.8	350.7	351.3	351.7	350.7	351.1
8°	350.4	349.7	349.4	350.1	349.5	349.6	349.4	350.1	350.5	349.5	350.0
9°	349.0	348.4	348.1	348.8	348.0	348.2	348.0	348.8	349.4	348.1	348.8
10°	347.7	346.9	346.5	347.4	346.6	346.7	346.6	347.4	348.0	346.6	347.3
11°	346.1	345.2	344.8	345.8	344.8	345.1	344.9	345.8	346.5	344.9	345.7
12°	344.5	343.5	343.0	344.1	343.0	343.2	343.0	344.0	344.7	343.0	344.0
13°	342.5	341.6	341.0	342.2	341.1	341.2	341.0	342.1	343.0	341.1	342.1
14°	340.4	339.4	338.9	340.1	338.9	339.0	338.8	340.0	340.8	338.9	340.1
15°	338.2	337.2	336.5	338.0	336.6	336.7	336.4	337.8	338.6	336.5	337.8
16°	335.8	334.8	334.1	335.5	334.2	334.2	333.9	335.3	336.3	334.1	335.3
17°	333.3	332.2	331.5	333.0	331.5	331.6	331.2	332.7	333.8	331.4	332.8
18°	330.7	329.5	328.7	330.4	328.7	328.7	328.3	330.0	331.1	328.6	330.1
19°	327.8	326.5	325.8	327.5	325.8	325.7	325.3	327.1	328.2	325.6	327.2
20°	324.7	323.4	322.7	324.5	322.6	322.5	322.1	323.9	325.1	322.4	324.1
21°	321.6	320.2	319.3	321.3	319.4	319.3	318.7	320.7	321.9	319.0	320.9
22°	318.2	316.8	315.9	318.0	315.9	315.8	315.3	317.3	318.5	315.5	317.4
23°	314.7	313.2	312.3	314.4	312.2	312.1	311.5	313.7	314.9	311.7	313.9
24°	311.1	309.4	308.5	310.8	308.4	308.3	307.6	309.9	311.1	307.9	310.1
25°	307.2	305.5	304.6	307.0	304.5	304.4	303.6	305.9	307.2	303.8	306.2
26°	303.2	301.4	300.5	302.9	300.3	300.2	299.4	301.7	303.1	299.5	302.0
27°	298.9	297.2	296.1	298.7	296.0	295.8	295.0	297.4	298.7	295.2	297.7
28°	294.5	292.8	291.7	294.3	291.6	291.3	290.4	293.0	294.3	290.6	293.2
29°	289.9	288.2	287.0	289.8	286.9	286.6	285.7	288.2	289.7	285.8	288.5
30°	285.2	283.6	282.2	285.2	282.0	281.8	280.8	283.4	284.9	280.9	283.7
31°	280.3	278.6	277.3	280.3	277.1	276.8	275.7	278.3	279.8	275.7	278.7
32°	275.3	273.4	272.1	275.4	272.0	271.7	270.5	273.1	274.7	270.4	273.4
33°	270.0	268.2	266.9	270.1	266.6	266.4	265.1	267.8	269.4	265.1	268.2
34°	264.7	262.8	261.4	264.8	261.2	260.9	259.5	262.2	263.8	259.5	262.7
35°	259.2	257.2	255.9	259.2	255.6	255.3	253.9	256.6	258.2	253.7	257.0
36°	253.4	251.5	250.2	253.6	250.0	249.7	248.2	250.8	252.4	248.0	251.2
37°	247.8	245.7	244.4	248.0	244.2	243.8	242.3	244.9	246.4	241.9	245.3
38°	241.7	239.7	238.4	242.1	238.2	237.8	236.2	238.8	240.4	235.8	239.3
39°	235.7	233.6	232.3	236.0	232.2	231.7	230.2	232.5	234.3	229.6	233.1
40°	229.5	227.4	226.1	230.0	226.0	225.7	223.8	226.2	227.9	223.3	226.8
41°	223.2	221.1	219.8	223.7	219.8	219.4	217.6	219.9	221.7	216.9	220.4
42°	216.9	214.7	213.4	217.3	213.5	213.2	211.3	213.4	215.2	210.5	214.0



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**CANDELA DISTRIBUTION (continued):**

	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°
45°	197.4	195.3	194.0	198.3	194.4	194.1	192.0	193.7	195.7	191.0	194.5
46°	190.9	188.7	187.6	191.7	187.9	187.7	185.6	187.1	189.0	184.4	187.9
47°	184.3	182.2	181.2	185.4	181.5	181.4	179.0	180.6	182.3	177.9	181.5
48°	177.8	175.5	174.6	178.9	174.9	175.0	172.6	174.0	175.8	171.3	174.9
49°	171.2	168.9	168.1	172.5	168.5	168.6	166.1	167.4	169.1	164.7	168.3
50°	164.6	162.2	161.5	166.0	161.9	162.2	159.6	160.8	162.4	158.0	161.7
51°	157.7	155.4	154.8	159.3	155.4	155.7	152.9	154.2	155.8	151.0	154.9
52°	150.6	148.3	147.6	152.3	148.5	149.0	145.8	147.2	148.7	143.8	147.9
53°	143.1	140.9	140.2	145.0	141.3	141.9	138.6	139.8	141.5	136.5	140.6
54°	135.5	133.2	132.7	137.6	134.0	134.7	131.3	132.5	134.1	129.0	133.2
55°	128.0	125.7	125.1	130.2	126.6	127.3	124.0	125.1	126.7	121.7	125.7
56°	120.5	118.3	117.7	122.7	119.3	120.0	116.7	117.7	119.3	114.5	118.4
57°	113.0	110.8	110.4	115.4	112.0	112.8	109.5	110.5	112.0	107.2	111.1
58°	105.6	103.4	103.1	108.2	104.9	105.6	102.4	103.3	104.8	100.1	103.9
59°	98.3	96.2	96.1	101.1	97.8	98.6	95.1	96.4	97.7	93.2	96.8
60°	91.1	89.6	89.1	94.1	90.9	91.7	88.6	89.4	90.7	86.7	89.8
61°	84.2	82.9	82.3	87.2	84.5	84.9	82.1	82.6	84.3	80.2	83.0
62°	77.4	76.2	75.7	80.4	78.2	78.2	75.5	76.0	77.9	73.7	76.3
63°	70.8	69.7	69.3	74.0	71.7	71.8	69.1	69.7	71.4	67.3	69.8
64°	64.4	63.4	62.9	67.6	65.4	65.4	62.9	63.5	65.1	61.1	63.4
65°	58.1	57.2	56.8	61.3	59.3	59.2	56.8	57.4	58.9	55.0	57.3
66°	52.1	51.2	51.0	55.3	53.3	53.3	50.9	51.6	52.9	49.2	51.4
67°	46.3	45.5	45.2	49.5	47.6	47.5	45.2	46.0	47.2	43.5	45.6
68°	40.7	40.0	39.8	43.9	42.2	42.0	39.9	40.7	41.7	38.2	40.2
69°	35.5	34.8	34.7	38.5	36.9	36.7	34.7	35.5	36.5	33.1	34.9
70°	30.5	30.0	29.8	33.5	32.0	31.7	29.9	30.7	31.6	28.4	30.1
71°	26.0	25.5	25.4	28.7	27.4	27.0	25.4	26.3	27.0	24.0	25.6
72°	21.9	21.5	21.4	24.4	23.2	22.8	21.5	22.2	22.8	20.1	21.6
73°	18.4	18.0	17.8	20.5	19.4	19.1	18.1	18.7	19.1	16.7	18.0
74°	15.3	14.9	14.8	17.1	16.2	15.9	15.0	15.5	15.9	13.8	14.8
75°	12.7	12.4	12.2	14.2	13.4	13.2	12.5	12.9	13.2	11.4	12.2
76°	10.5	10.2	10.0	11.7	11.0	10.9	10.4	10.7	10.9	9.3	10.0
77°	8.6	8.4	8.2	9.6	9.0	8.9	8.5	8.8	8.9	7.6	8.2
78°	7.0	6.8	6.7	7.8	7.3	7.3	6.9	7.1	7.3	6.1	6.6
79°	5.5	5.5	5.3	6.3	5.9	5.8	5.4	5.7	5.8	4.8	5.2
80°	4.2	4.2	4.1	4.9	4.6	4.5	4.0	4.4	4.6	3.6	4.0
81°	3.1	3.2	3.1	3.8	3.5	3.4	3.1	3.3	3.4	2.9	3.1
82°	2.6	2.6	2.6	3.0	2.8	2.7	2.6	2.7	2.8	2.5	2.6
83°	2.1	2.1	2.2	2.5	2.4	2.3	2.1	2.2	2.4	2.0	2.1
84°	1.6	1.7	1.7	2.1	1.9	1.8	1.6	1.8	1.9	1.6	1.7
85°	1.2	1.3	1.3	1.6	1.5	1.4	1.2	1.3	1.5	1.2	1.3
86°	0.9	0.9	0.9	1.2	1.1	1.0	0.8	0.9	1.1	0.9	0.9
87°	0.5	0.5	0.6	0.9	0.8	0.6	0.5	0.6	0.8	0.5	0.6



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**CANDELA DISTRIBUTION (continued):**

	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°
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):**

	330°	360°
0°	354.9	354.9
1°	354.7	354.8
2°	354.5	354.7
3°	354.2	354.4
4°	353.6	353.7
5°	353.0	353.1
6°	352.2	352.4
7°	351.2	351.5
8°	350.0	350.4
9°	348.9	349.0
10°	347.3	347.7
11°	345.8	346.1
12°	344.0	344.5
13°	342.1	342.5
14°	339.9	340.4
15°	337.8	338.2
16°	335.4	335.8
17°	332.8	333.3
18°	330.1	330.7
19°	327.2	327.8
20°	324.1	324.7
21°	320.8	321.6
22°	317.5	318.2
23°	313.9	314.7
24°	310.2	311.1
25°	306.2	307.2
26°	302.1	303.2
27°	297.8	298.9
28°	293.3	294.5
29°	288.7	289.9
30°	284.0	285.2
31°	279.0	280.3
32°	273.8	275.3
33°	268.5	270.0
34°	263.1	264.7
35°	257.4	259.2
36°	251.7	253.4
37°	245.7	247.8
38°	239.6	241.7
39°	233.5	235.7
40°	227.3	229.5
41°	221.0	223.2
42°	214.6	216.9



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**CANDELA DISTRIBUTION (continued):**

	330°	360°
45°	194.8	197.4
46°	188.2	190.9
47°	181.6	184.3
48°	174.9	177.8
49°	168.2	171.2
50°	161.6	164.6
51°	154.7	157.7
52°	147.6	150.6
53°	140.2	143.1
54°	132.7	135.5
55°	125.2	128.0
56°	117.8	120.5
57°	110.3	113.0
58°	103.0	105.6
59°	95.8	98.3
60°	89.2	91.1
61°	82.6	84.2
62°	75.9	77.4
63°	69.3	70.8
64°	63.1	64.4
65°	56.9	58.1
66°	51.0	52.1
67°	45.2	46.3
68°	39.7	40.7
69°	34.6	35.5
70°	29.8	30.5
71°	25.3	26.0
72°	21.3	21.9
73°	17.8	18.4
74°	14.8	15.3
75°	12.2	12.7
76°	10.1	10.5
77°	8.3	8.6
78°	6.7	7.0
79°	5.3	5.5
80°	4.1	4.2
81°	3.1	3.1
82°	2.5	2.6
83°	2.1	2.1
84°	1.6	1.6
85°	1.2	1.2
86°	0.9	0.9
87°	0.5	0.5



TEST NUMBER: C2103279A001

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**CANDELA DISTRIBUTION (continued):**

	330°	360°
90°	0.0	0.0



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— 0°-180°    - - 45°-225°    - - - - 90°-270°    - · - · 135°-315°









43°	210.5	208.3	207.0	211.1	207.1	206.8	204.9	206.9	208.6	204.0	207.6
44°	204.0	201.8	200.7	204.7	200.8	200.5	198.5	200.3	202.1	197.6	201.0



88°	0.2	0.2	0.3	0.5	0.5	0.3	0.2	0.3	0.4	0.2	0.3
89°	0.0	0.0	0.0	0.2	0.2	0.1	0.0	0.0	0.2	0.0	0.0





43°	208.0	210.5
44°	201.5	204.0



88°	0.2	0.2
89°	0.0	0.0



(END OF REPORT)