

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: C2104245A001

Luminaire Tested: **LT3059FS461EWHDMR**

Test Date: 2021-01-26



**Test Information**

Test Method: LM-41-14  
Report Number: C2104245A001  
Test Lab: EVERFINE  
Test Date: 2021-01-26  
Issue Date: 2021-02-19 09:49:23  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO  
Catalog Number: LT3059FS461EWHDMR  
Description: LT3059FS461EWHDMR  
Light Source: -  
Ballast/Driver: -

**Summary**

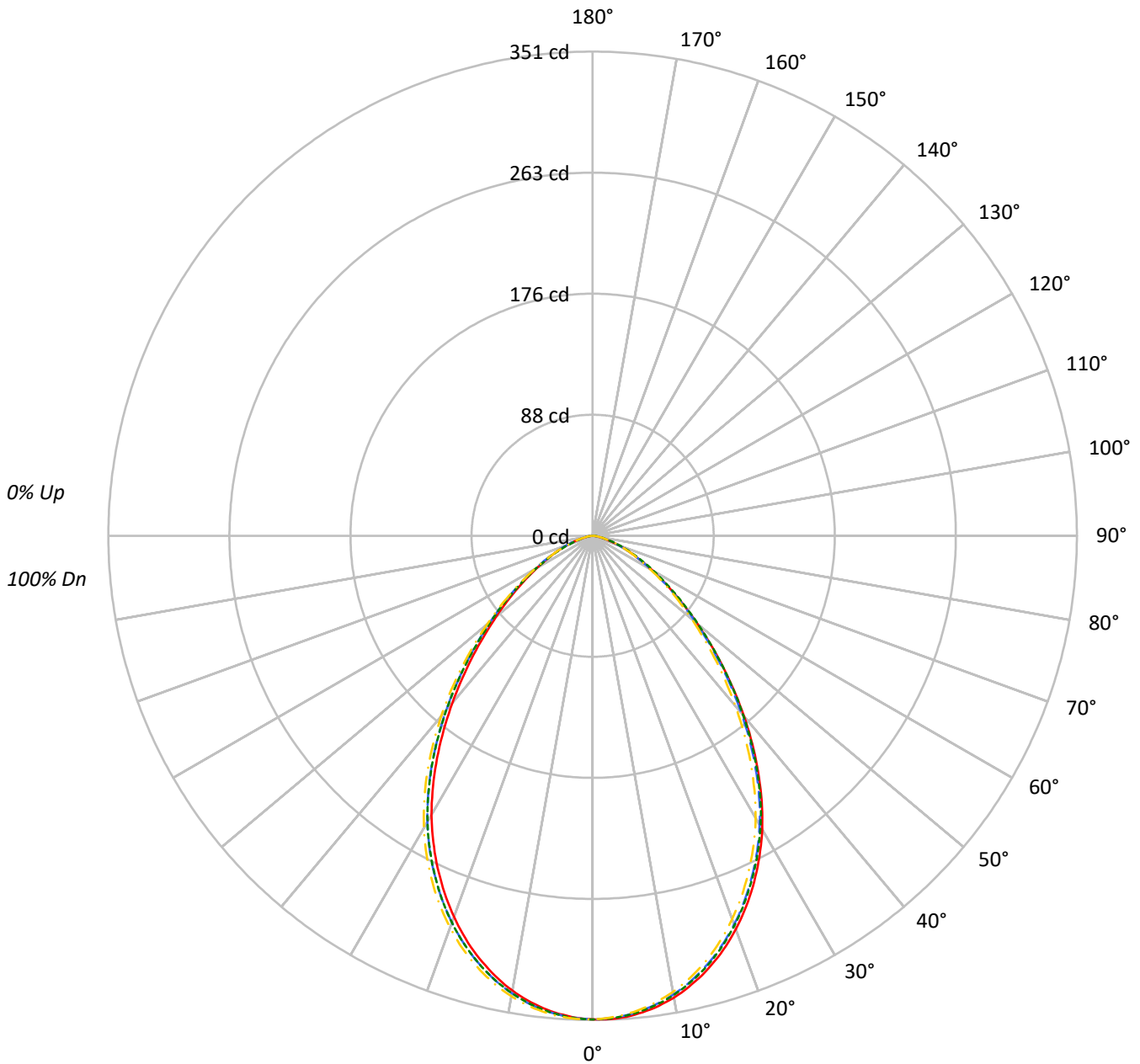
Lumens per Lamp: 583.9 (1 lamp)  
Luminaire Lumens: 583.9 lumens  
Efficiency: 100.0%  
Efficacy: 89.0 lumens/watt  
Spacing Criteria (0/90/45): 1.06 / 1.06 / 1.11  
Luminous Opening: Circular (Dia: 0.25' x H: 0')  
CIE Type: Direct

Input Watts (W): 6.56  
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



0% Up  
100% Dn



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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	105	102	100	101	99	97	98	96	94	94	92	91	89																			
2	103	97	91	87	101	95	90	86	92	88	84	89	85	82	86	83	80	78																			
3	96	87	81	75	94	86	80	75	83	78	74	80	76	72	78	74	71	69																			
4	89	79	72	66	87	78	71	66	76	70	65	73	68	64	71	67	63	62																			
5	83	72	65	59	81	71	64	59	69	63	58	67	62	57	66	61	57	55																			
6	77	66	58	53	76	65	58	53	63	57	52	62	56	52	60	55	51	50																			
7	72	61	53	48	71	60	53	47	58	52	47	57	51	47	56	51	47	45																			
8	68	56	48	43	67	55	48	43	54	48	43	53	47	43	52	47	43	41																			
9	64	52	45	40	63	51	44	40	50	44	39	49	43	39	48	43	39	37																			
10	60	48	41	36	59	48	41	36	47	41	36	46	40	36	45	40	36	34																			

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

	0°	90°	180°	270°
0°	76893	76893	76893	76893
5°	76733	76507	76157	76372
10°	75686	75287	74555	74987
15°	73698	73183	72029	72747
20°	70827	70141	68584	69614
25°	66999	66260	64302	65562
30°	62235	61623	59149	60581
35°	56028	55639	52592	54361
40°	48838	48586	45231	47217
45°	41139	41142	37846	39754
50°	33820	34074	31128	32702
55°	27276	27828	25281	26319
60°	21674	22419	20293	20669
65°	16941	17877	16160	15890
70°	12963	13786	12480	11262
75°	8241	9455	7747	7405
80°	5372	6912	5104	5144
85°	1334	5017	987	3149



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture	% Lamp
0°-10°	32.8	5.6	5.6
10°-20°	90.2	15.4	15.4
20°-30°	124.7	21.4	21.4
30°-40°	127.1	21.8	21.8
40°-50°	99.8	17.1	17.1
50°-60°	63.1	10.8	10.8
60°-70°	32.4	5.6	5.6
70°-80°	11.7	2.0	2.0
80°-90°	2.0	0.3	0.3
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°	247.7	42.4	42.4
0°-40°	374.8	64.2	64.2
0°-60°	537.7	92.1	92.1
0°-90°	583.9	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°	583.9	100.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	351	351	351	351	351	
5°	349	348	346	347	349	33
15°	325	322	317	320	325	91
25°	277	274	266	271	277	127
35°	209	208	196	203	209	130
45°	133	133	122	128	133	103
55°	71	73	66	69	71	64
65°	33	34	31	31	33	33
75°	10	11	9	9	10	11
85°	1	2	0	1	1	1
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°	350.7	350.7	350.7	350.7	350.7	350.7	350.7	350.7	350.7	350.7	350.7
1°	350.7	350.5	350.2	350.5	350.3	350.3	350.3	350.3	350.3	350.4	350.6
2°	350.7	350.1	349.8	350.1	349.7	349.6	349.6	349.7	350.0	350.0	350.4
3°	350.2	349.7	349.1	349.5	348.9	348.8	348.6	349.0	349.3	349.2	349.9
4°	349.6	348.8	348.1	348.7	347.8	347.7	347.4	348.0	348.5	348.2	349.1
5°	348.6	347.8	346.9	347.6	346.5	346.3	346.0	346.6	347.3	347.0	348.2
6°	347.4	346.4	345.4	346.1	344.8	344.6	344.3	345.1	345.8	345.4	346.8
7°	345.9	344.8	343.7	344.6	342.9	342.6	342.2	343.3	344.2	343.6	345.2
8°	344.1	342.8	341.7	342.6	340.9	340.5	340.0	341.2	342.2	341.6	343.3
9°	342.1	340.6	339.4	340.6	338.5	338.1	337.6	338.8	340.0	339.3	341.2
10°	339.9	338.2	336.9	338.1	335.9	335.5	334.8	336.2	337.5	336.8	338.9
11°	337.4	335.6	334.1	335.4	333.0	332.5	331.8	333.5	334.8	334.0	336.3
12°	334.5	332.8	331.2	332.5	329.8	329.3	328.5	330.3	331.9	331.0	333.5
13°	331.4	329.6	327.9	329.3	326.4	325.9	325.0	326.9	328.7	327.8	330.3
14°	328.2	326.2	324.3	325.9	322.8	322.2	321.1	323.2	325.3	324.2	327.0
15°	324.6	322.5	320.6	322.4	319.0	318.3	317.3	319.5	321.5	320.4	323.5
16°	320.9	318.7	316.7	318.4	314.9	314.1	313.1	315.5	317.7	316.5	319.7
17°	316.9	314.6	312.5	314.3	310.5	309.7	308.6	311.2	313.5	312.3	315.6
18°	312.7	310.3	308.1	309.9	306.0	305.0	303.8	306.6	309.1	307.9	311.4
19°	308.2	305.7	303.5	305.4	301.2	300.2	299.0	301.9	304.5	303.2	306.9
20°	303.5	301.0	298.7	300.6	296.2	295.1	293.9	296.9	299.7	298.3	302.1
21°	298.7	296.1	293.7	295.6	291.0	290.0	288.6	291.7	294.7	293.3	297.2
22°	293.5	290.9	288.5	290.5	285.7	284.6	283.2	286.5	289.6	288.0	292.1
23°	288.2	285.5	283.0	285.0	280.2	279.0	277.5	280.9	284.1	282.5	286.8
24°	282.6	280.0	277.5	279.4	274.4	273.1	271.6	275.1	278.5	276.9	281.4
25°	276.9	274.3	271.8	273.9	268.6	267.3	265.8	269.3	272.7	271.0	275.7
26°	271.0	268.3	265.9	268.1	262.6	261.2	259.6	263.4	266.9	265.0	269.7
27°	265.0	262.3	259.9	262.1	256.4	254.9	253.3	257.2	260.7	258.9	263.8
28°	258.7	256.2	253.8	256.1	250.2	248.7	247.0	250.9	254.5	252.5	257.5
29°	252.4	249.9	247.5	249.7	243.8	242.1	240.4	244.3	248.0	246.1	251.2
30°	245.8	243.3	241.0	243.4	237.1	235.4	233.6	237.7	241.4	239.3	244.6
31°	238.8	236.3	234.4	236.9	230.0	228.3	226.3	230.7	234.5	232.4	237.8
32°	231.7	229.2	227.3	229.9	222.9	221.0	219.1	223.6	227.4	225.1	230.8
33°	224.3	221.9	220.1	222.7	215.4	213.5	211.6	216.2	220.1	217.9	223.6
34°	216.9	214.5	212.7	215.4	207.8	205.9	204.0	208.7	212.7	210.5	216.4
35°	209.3	206.9	205.1	207.8	200.2	198.3	196.5	201.2	205.2	203.1	209.0
36°	201.6	199.1	197.6	200.2	192.5	190.7	188.7	193.7	197.5	195.4	201.5
37°	194.0	191.5	190.0	192.7	184.7	183.1	181.0	186.1	189.9	187.9	194.1
38°	186.2	183.7	182.5	185.0	176.9	175.5	173.2	178.5	182.3	180.2	186.5
39°	178.4	175.8	174.9	177.4	169.2	167.7	165.6	170.8	174.7	172.5	179.0
40°	170.6	168.0	167.2	169.7	161.6	160.2	158.0	163.3	167.0	164.9	171.4
41°	162.8	160.3	159.7	162.1	154.1	152.7	150.5	155.8	159.4	157.3	163.7
42°	155.1	152.7	152.1	154.5	146.6	145.3	143.1	148.3	152.0	149.9	156.2



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**CANDELA DISTRIBUTION (continued):**

	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°
45°	132.7	130.6	130.5	132.7	125.4	124.2	122.0	127.0	130.3	128.2	134.1
46°	125.5	123.4	123.5	125.7	118.6	117.5	115.4	120.1	123.3	121.1	127.0
47°	118.6	116.7	116.8	119.0	112.0	111.1	108.9	113.5	116.7	114.5	120.1
48°	111.8	110.0	110.2	112.4	105.7	104.8	102.7	107.1	110.0	107.8	113.4
49°	105.3	103.5	103.9	106.1	99.6	98.8	96.6	100.9	103.6	101.6	106.8
50°	99.1	97.3	97.8	99.9	94.2	93.0	91.2	94.9	97.4	95.9	100.5
51°	93.0	91.7	91.9	94.1	88.8	87.4	86.0	89.2	92.0	90.2	94.3
52°	87.2	86.2	86.2	88.4	83.4	82.1	80.7	83.7	86.5	84.5	88.4
53°	81.7	80.8	80.7	82.9	78.3	77.0	75.6	78.4	81.1	79.1	82.7
54°	76.4	75.6	75.5	77.8	73.4	72.1	70.8	73.4	75.9	73.9	77.2
55°	71.3	70.6	70.5	72.8	68.6	67.4	66.1	68.5	70.8	68.8	71.9
56°	66.5	65.8	65.8	68.0	64.2	63.0	61.8	64.0	66.0	64.0	66.9
57°	61.9	61.2	61.2	63.5	59.9	58.8	57.6	59.5	61.5	59.5	62.1
58°	57.5	56.9	56.8	59.1	55.9	54.8	53.6	55.4	57.1	55.1	57.5
59°	53.4	52.8	52.8	55.1	52.0	51.0	49.8	51.4	53.0	51.0	53.2
60°	49.4	48.9	48.9	51.1	48.3	47.4	46.3	47.7	49.0	47.1	49.1
61°	45.7	45.2	45.2	47.4	44.9	43.9	42.9	44.1	45.3	43.4	45.2
62°	42.1	41.7	41.7	43.9	41.6	40.7	39.7	40.8	41.8	39.9	41.5
63°	38.8	38.4	38.4	40.6	38.5	37.7	36.7	37.6	38.4	36.6	38.1
64°	35.6	35.3	35.3	37.4	35.5	34.8	33.8	34.6	35.3	33.5	34.8
65°	32.7	32.4	32.4	34.5	32.7	32.1	31.1	31.8	32.4	30.6	31.7
66°	29.9	29.6	29.7	31.6	30.1	29.5	28.6	29.2	29.6	27.8	29.0
67°	27.3	27.1	27.1	29.0	27.7	27.1	26.2	26.7	27.0	24.9	26.3
68°	24.8	24.6	24.7	26.5	25.3	24.8	24.0	24.3	24.6	22.2	23.7
69°	22.5	22.3	22.4	24.0	23.1	22.6	21.7	22.1	22.3	19.9	21.3
70°	20.2	20.2	20.2	21.5	20.9	20.5	19.5	20.0	20.1	17.6	19.0
71°	17.9	18.2	18.2	19.2	18.8	18.5	17.2	17.9	18.1	15.4	17.0
72°	15.7	16.2	16.3	17.0	16.8	16.4	15.0	15.9	16.2	13.3	15.0
73°	13.6	14.2	14.5	15.0	15.0	14.4	12.9	13.9	14.4	11.6	13.3
74°	11.6	12.3	12.8	12.9	13.2	12.6	10.9	12.1	12.7	10.1	11.6
75°	9.7	10.6	11.3	11.2	11.6	10.9	9.1	10.4	11.1	8.7	10.1
76°	8.3	9.1	9.8	9.7	10.0	9.4	7.9	8.9	9.6	7.6	8.6
77°	7.2	7.8	8.5	8.3	8.5	8.1	6.9	7.6	8.3	6.6	7.3
78°	6.1	6.8	7.4	7.2	7.4	7.0	5.9	6.6	7.4	5.7	6.4
79°	5.2	5.8	6.5	6.3	6.4	6.1	4.9	5.7	6.5	4.8	5.5
80°	4.3	5.0	5.7	5.5	5.6	5.2	4.0	4.8	5.7	4.1	4.6
81°	3.4	4.1	4.9	4.7	4.7	4.3	3.2	4.0	4.9	3.3	3.9
82°	2.6	3.3	4.2	3.9	4.0	3.5	2.4	3.2	4.1	2.7	3.2
83°	1.9	2.6	3.5	3.2	3.3	2.8	1.7	2.5	3.4	2.2	2.6
84°	1.2	1.9	2.8	2.5	2.7	2.1	1.0	1.8	2.8	1.7	2.1
85°	0.5	1.3	2.2	2.0	2.1	1.5	0.4	1.3	2.2	1.3	1.5
86°	0.2	0.9	1.6	1.5	1.6	1.1	0.2	0.9	1.5	0.8	1.0
87°	0.1	0.6	1.0	1.1	1.1	0.7	0.1	0.5	1.0	0.4	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°	350.7	350.7
1°	350.8	350.7
2°	350.5	350.7
3°	349.9	350.2
4°	349.3	349.6
5°	348.2	348.6
6°	346.9	347.4
7°	345.3	345.9
8°	343.5	344.1
9°	341.5	342.1
10°	339.1	339.9
11°	336.5	337.4
12°	333.8	334.5
13°	330.6	331.4
14°	327.3	328.2
15°	323.7	324.6
16°	319.9	320.9
17°	315.9	316.9
18°	311.6	312.7
19°	307.1	308.2
20°	302.3	303.5
21°	297.4	298.7
22°	292.3	293.5
23°	286.9	288.2
24°	281.4	282.6
25°	275.7	276.9
26°	269.7	271.0
27°	263.8	265.0
28°	257.6	258.7
29°	251.2	252.4
30°	244.5	245.8
31°	237.6	238.8
32°	230.7	231.7
33°	223.4	224.3
34°	216.0	216.9
35°	208.5	209.3
36°	200.9	201.6
37°	193.3	194.0
38°	185.5	186.2
39°	177.8	178.4
40°	170.1	170.6
41°	162.4	162.8
42°	154.8	155.1



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**CANDELA DISTRIBUTION (continued):**

	330°	360°
45°	132.5	132.7
46°	125.3	125.5
47°	118.4	118.6
48°	111.6	111.8
49°	105.0	105.3
50°	98.6	99.1
51°	92.9	93.0
52°	87.3	87.2
53°	81.7	81.7
54°	76.2	76.4
55°	71.0	71.3
56°	66.1	66.5
57°	61.4	61.9
58°	56.9	57.5
59°	52.7	53.4
60°	48.7	49.4
61°	44.9	45.7
62°	41.3	42.1
63°	37.9	38.8
64°	34.8	35.6
65°	31.8	32.7
66°	29.0	29.9
67°	26.4	27.3
68°	24.0	24.8
69°	21.7	22.5
70°	19.6	20.2
71°	17.6	17.9
72°	15.6	15.7
73°	13.7	13.6
74°	11.9	11.6
75°	10.3	9.7
76°	8.9	8.3
77°	7.6	7.2
78°	6.6	6.1
79°	5.7	5.2
80°	4.8	4.3
81°	4.0	3.4
82°	3.2	2.6
83°	2.5	1.9
84°	1.8	1.2
85°	1.3	0.5
86°	0.9	0.2
87°	0.5	0.1



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**CANDELA DISTRIBUTION (continued):**

	330°	360°
90°	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





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









43°	147.5	145.2	144.8	147.1	139.3	138.1	135.8	141.0	144.6	142.5	148.8
44°	139.9	137.8	137.6	139.8	132.3	131.0	128.9	133.9	137.3	135.2	141.3



88°	0.0	0.3	0.5	0.6	0.6	0.3	0.0	0.2	0.4	0.0	0.1
89°	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0





43°	147.2	147.5
44°	139.8	139.9



88°	0.2	0.0
89°	0.0	0.0



(END OF REPORT)