

User Manual

Windscreen for outdoor **WS-15** in combination
with RION sound level meters.



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1. Introduction

The WS-15 wind screen is designed for outdoor installation. It helps to reduce wind noise and is equipped with rainproof features that satisfy the IPX3 water-resistant specifications. It is used with a microphone extension cable, which means that the microphone/preamplifier has to be separated from the sound level meter, before the wind screen can be mounted.

This manual will describe the mounting procedure (paragraph 3), the settings on the sound level meter (paragraph 4) and technical specifications of the wind screen (paragraph 5).

2. Parts

The following parts are needed to mount the WS-15 windscreen onto a microphone/preamplifier combination:

- * WS-15 (WS150000): Windscreen for outdoors WS13S020, Inner cap WS130020
Base assembly WS15S010, Mounting stage for microphone WS15010Z
- * Microphone with preamplifier
- * Extension cable EC-04 series (various lengths)
- * Attachment adapter WS150060
- * All-weather Tripod ST-81

Windscreen for outdoors
WS13S020

Inner cap
WS130020

Base assembly
WS15S010

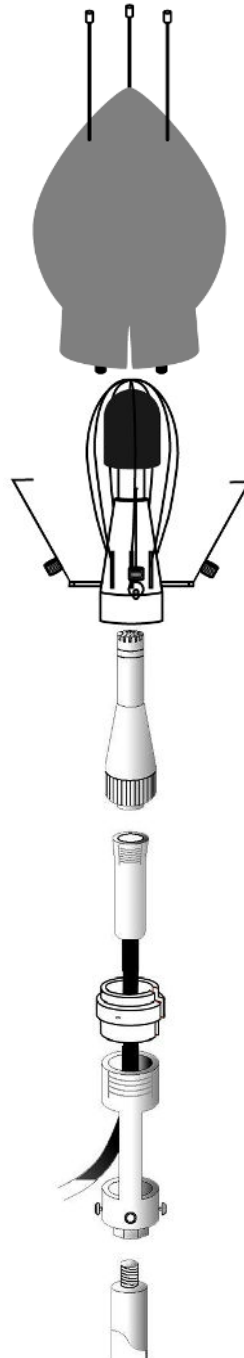
Microphone
with Preamplifier

Extension cable
EC-04 series

Attachment adapter
WS150060

Mounting stage for
microphone **WS15010Z**

Tripod **ST-81**



Extension cable EC-04 series
(7 Pin connector)

EC-04: 2m

EC-04A: 5m

EC-04B: 10m

EC-04C: 30m with reel

EC-04D: 50m with reel

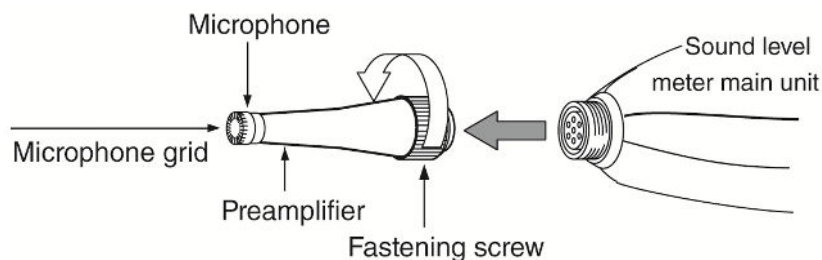
EC-04E: 100m with reel

3. Mounting the windscreen

To mount the windscreen WS-15 onto the microphone/preamplifier combination of a RION sound level meter (when the microphone/preamplifier combination is separated from the sound level meter), please perform the steps below. The tripod, extension cable EC-04 series, and mounting adapter for windscreen are all available as options. Before using equipment such as the sound level meters and preamplifiers, carefully read the instruction manual for each device. The preamplifier models that can be mounted on the WS-15 are as follows: NH-21, NH-23, NH-24, NH-25, and NH-26.

1. Turn off the sound level meter.

Then loosen the preamplifier fastening screw and remove the microphone/preamplifier combination from the main unit. Please refer to the picture on the right.



IMPORTANT:

Do not try to remove the microphone from the preamplifier. This may lead to damage to the microphone or preamplifier. Also, never remove the microphone grid, because this can lead to damage.

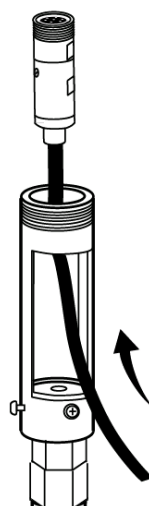
2. Attach the mounting stage for microphone to the tripod.



Mounting stage
WS15010Z

Tripod

3. Insert the extension cable (EC-04 series) through the side of the mounting stage.



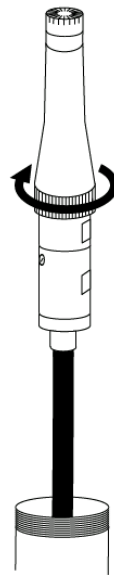
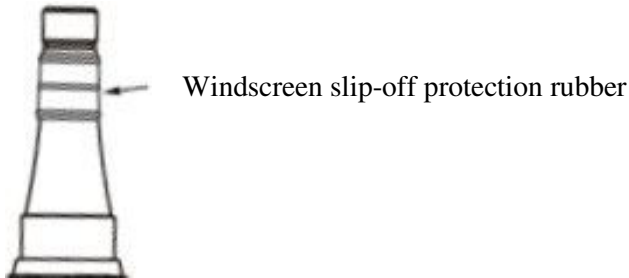
Extension cable
EC-04 series

Mounting stage
WS15010Z

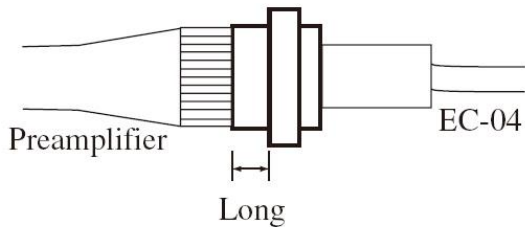
4. Connect the extension cable EC-04 series to the preamplifier. Make sure the fastening screw is turned on hand-tight to ensure a good connection.

IMPORTANT:

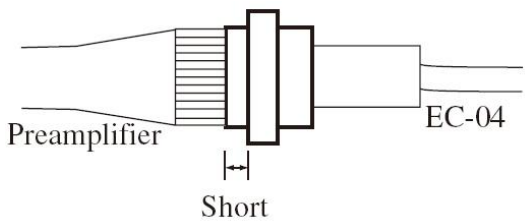
When using WS-15, remove the windscreen slip-off prevention rubber:



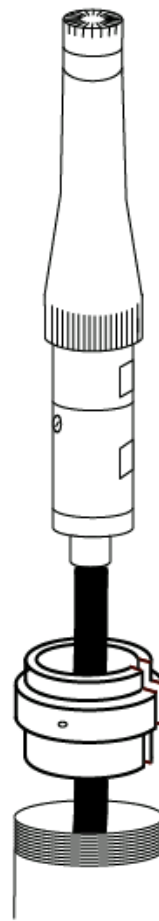
5. Attach the mounting adapter for windscreen. The mounting adapter for windscreen has a slit along the side. To attach the adapter, slide the cable section of the extension cable EC-04 series through the opening. For this step, **it is important to note that the direction in which you insert the mounting adapter for the windscreen differs according to the preamplifier model you are using** (type number can be found on preamplifier housing, or on the name plate of the sound level meter). Please see below:



When attaching the NH-21, NH-24, NH-25 and NH-26



When attaching the NH-23



6. Insert the preamplifier into the mounting stage for microphone from the top.



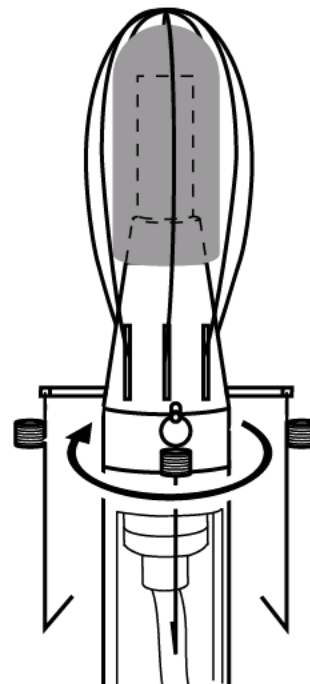
7. Insert the preamplifier into the base of the WS-15 and rotate the base to securely fasten it to the mounting tube. Then insert the inner cap through the wires of the base and cover the preamplifier with the inner cap firmly. While doing this, take care that the tips of the spring tips attached to the base do not come into contact with the microphone.

IMPORTANT:

Be aware that if you put the windscreen and the base together beforehand, the inner cap may be displaced and the preamplifier may not fit into the inner cap.

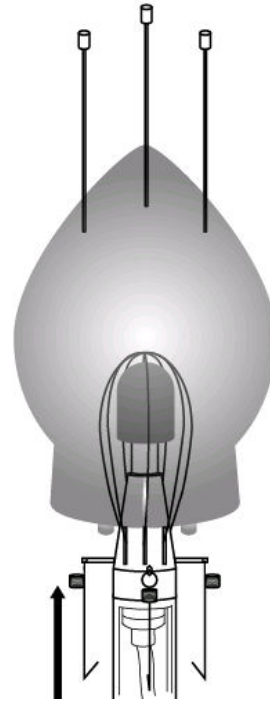
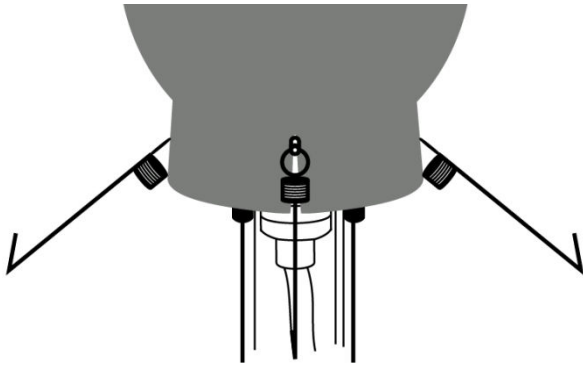
IMPORTANT:

Handle the base with care, to prevent the risk of injury by the sharp spring tips.



8. Mount the windscreen. In the lower part of the windscreen, there are three slits. Align these slits with the hooks on the base and push the windscreen fully onto the base.

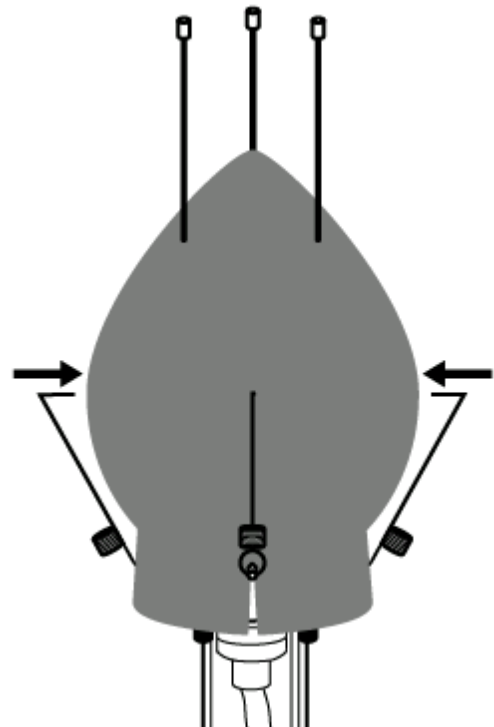
See also the picture below for slit alignment:



9. Push each of the three tips of the springs attached to the hooks firmly into the windscreen, at about the middle section. When pushing the tips into the windscreen, make sure the tips are perpendicular to windscreen surface.

IMPORTANT:

Handle the spring tips with care, to prevent the risk of injury by the pointed spring tips.



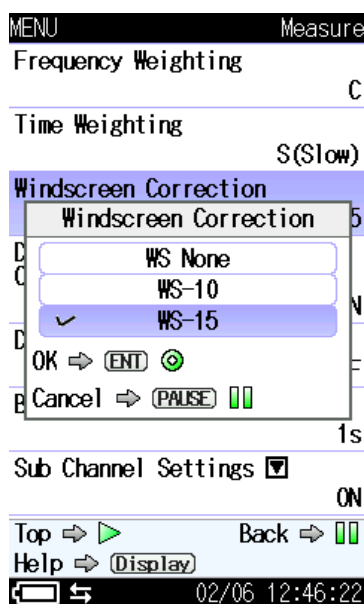
4. Settings on the sound level meter

Besides making the required measurement settings (see user manual for the sound level meter), the appropriate windscreen setting for WS-15 has to be made in the sound level meter menu.

NL-42 or NL-52

To set the appropriate wind screen correction for sound level meter NL-42 or NL-52, please perform the following steps:

1. Press the MENU/ENTER key to bring up the menu list screen.
2. Use the $\Delta/\nabla/\leftarrow/\rightarrow$ keys to select [Measure] and press the MENU/ENTER key. The measurement setting screen appears.
3. Use the Δ/∇ keys to select [Windscreen Correction] and press the MENU/ENTER key. The windscreen selection screen appears.
4. Use the Δ/∇ keys to select the model of windscreen (WS-15) and press the MENU/ENTER key.



5. Press the START/STOP key to return to the measurement screen.

NA-28

No WS-15 correction is available in this instrument.

NL-20, NL-21, NL-22, NL-31, NL-32

No WS-15 correction is available in these instruments.

5. Technical Information

I. Frequency response and windscreen correction

Tab. 1a NL-42 Frequency response and windscreen correction

Nominal Frequency (Hz)	Exact Frequency (Hz)	UC-52 Frequency response (dB)	Windscreen (WS-15) Effect (dB)	Windscreen (WS-15) Correction (dB)	Windscreen Effect + Windscreen Correction (dB)	Total Expanded Uncertainty (dB)
63	63,10	0,0	0,0	0,0	0,0	0,3
80	79,43	0,0	0,0	0,0	0,0	0,3
100	100,0	0,0	0,0	0,0	0,0	0,3
125	125,9	0,0	0,0	0,0	0,0	0,3
160	158,5	0,0	0,0	0,0	0,0	0,3
200	199,5	0,0	0,0	0,0	0,0	0,2
250	251,2	0,0	0,0	0,0	0,0	0,2
315	316,2	0,0	0,0	-0,1	-0,1	0,2
400	398,1	0,0	0,0	-0,1	-0,1	0,2
500	501,2	0,0	0,1	-0,1	0,0	0,2
630	631,0	0,0	0,1	-0,2	-0,1	0,2
800	794,3	0,0	0,3	-0,3	0,0	0,2
1000	1000	0,0	0,2	-0,3	-0,1	0,2
1250	1259	0,0	0,5	-0,4	0,1	0,3
1600	1585	0,1	0,5	-0,5	0,0	0,3
2000	1995	0,2	0,3	-0,5	-0,2	0,3
2500	2512	0,3	0,0	-0,4	-0,4	0,3
3150	3162	0,4	-0,1	-0,1	-0,2	0,3
4000	3981	0,4	-0,4	0,3	-0,1	0,4
5000	5012	0,3	-0,5	0,7	0,2	0,4
6300	6310	0,0	-1,0	1,1	0,1	0,4
8000	7943	-0,5	-1,4	1,6	0,2	0,4
10000	10000	---	-1,6	1,9	0,3	0,6
12500	12589	---	-2,8	2,2	-0,6	0,6
16000	15849	---	-2,8	2,4	-0,4	0,6

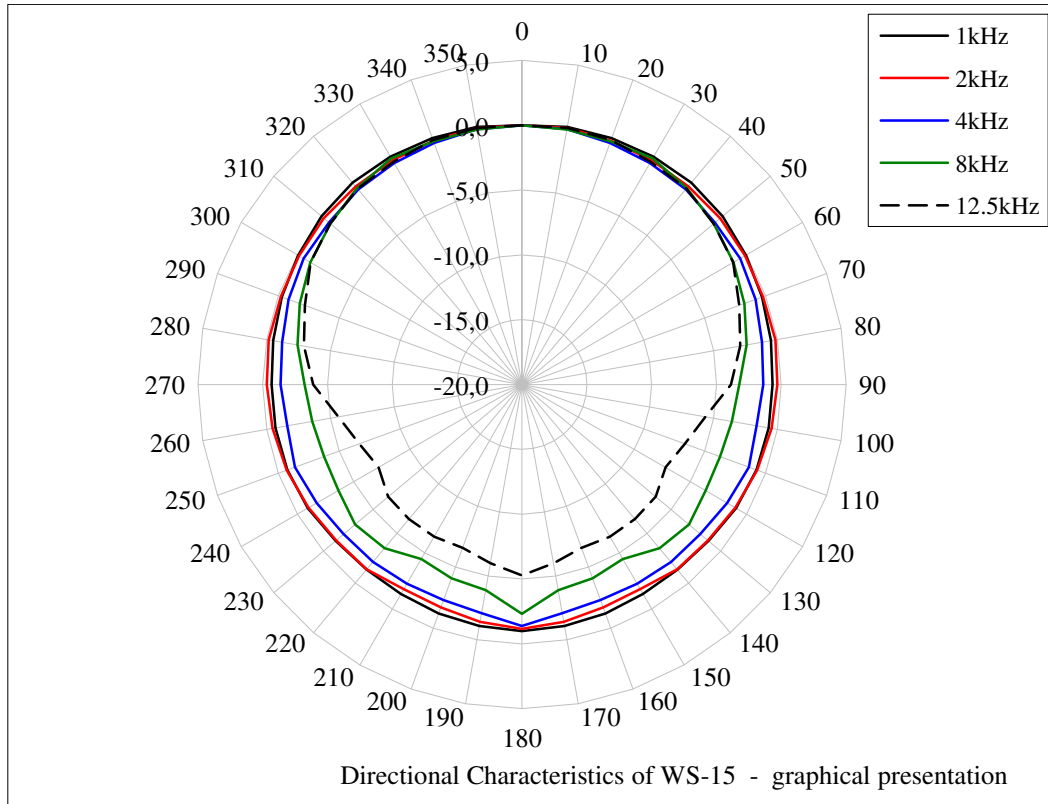
Tab. 1b NL-52 Frequency response and windscreen correction

Nominal Frequency (Hz)	Exact Frequency (Hz)	UC-59 Frequency response (dB)	Windscreen (WS-15) Effect (dB)	Windscreen (WS-15) Correction (dB)	Windscreen Effect + Windscreen Correction (dB)	Total Expanded Uncertainty (dB)
63	63,10	0,1	0,0	0,0	0,0	0,3
80	79,43	0,1	0,0	0,0	0,0	0,3
100	100,0	0,1	0,0	0,0	0,0	0,3
125	125,9	0,1	0,0	0,0	0,0	0,3
160	158,5	0,1	0,0	0,0	0,0	0,3
200	199,5	0,1	0,0	0,0	0,0	0,2
250	251,2	0,1	0,0	0,0	0,0	0,2
315	316,2	0,0	0,0	-0,1	-0,1	0,2
400	398,1	0,0	0,0	-0,1	-0,1	0,2
500	501,2	0,0	0,1	-0,1	0,0	0,2
630	631,0	0,0	0,1	-0,2	-0,1	0,2
800	794,3	-0,1	0,3	-0,3	0,0	0,2
1000	1000,0	0,0	0,2	-0,3	-0,1	0,2
1060	1059,3	0,0	0,3	-0,4	-0,1	0,3
1120	1122,0	0,0	0,4	-0,4	0,0	0,3
1180	1188,5	0,0	0,2	-0,4	-0,2	0,3
1250	1258,9	0,0	0,5	-0,4	0,1	0,3
1320	1333,5	0,0	0,4	-0,5	-0,1	0,3
1400	1412,5	0,0	0,4	-0,5	-0,1	0,3
1500	1496,2	0,0	0,5	-0,5	0,0	0,3
1600	1584,9	0,0	0,5	-0,5	0,0	0,3
1700	1678,8	0,0	0,7	-0,5	0,2	0,3
1800	1778,3	0,0	0,5	-0,5	0,0	0,3
1900	1883,6	0,0	0,4	-0,5	-0,1	0,3
2000	1995,3	0,0	0,3	-0,5	-0,2	0,3
2120	2113,5	0,0	0,3	-0,5	-0,2	0,3
2240	2238,7	0,0	0,3	-0,4	-0,1	0,3
2360	2371,4	0,0	0,3	-0,4	-0,1	0,3
2500	2511,9	0,0	0,0	-0,4	-0,4	0,3
2650	2660,7	0,1	0,1	-0,3	-0,2	0,3
2800	2818,4	0,1	-0,1	-0,3	-0,4	0,3
3000	2985,4	0,1	-0,1	-0,2	-0,3	0,3
3150	3162,3	0,1	-0,1	-0,1	-0,2	0,4
3350	3349,7	0,1	-0,2	0,0	-0,2	0,4
3550	3548,1	0,1	-0,2	0,0	-0,2	0,4
3750	3758,4	0,1	-0,7	0,1	-0,6	0,4
4000	3981,1	0,1	-0,4	0,3	-0,1	0,4
4250	4217,0	0,1	-0,3	0,4	0,1	0,4
4500	4466,8	0,1	-0,8	0,5	-0,3	0,4
4750	4731,5	0,1	-0,7	0,6	-0,1	0,4

Tab. 1b Continued

Nominal Frequency (Hz)	Exact Frequency (Hz)	UC-59 Frequency response (dB)	Windscreen (WS-15) Effect (dB)	Windscreen (WS-15) Correction (dB)	Windscreen Effect + Windscreen Correction (dB)	Total Expanded Uncertainty (dB)
5000	5011,9	0,1	-0,5	0,7	0,2	0,4
5300	5308,8	0,1	-1,4	0,8	-0,6	0,4
5600	5623,4	0,1	-0,6	0,9	0,3	0,4
6000	5956,6	0,1	-0,9	1,0	0,1	0,4
6300	6309,6	0,1	-1,0	1,1	0,1	0,4
6700	6683,4	0,1	-0,8	1,3	0,5	0,4
7100	7079,5	0,0	-1,3	1,4	0,1	0,4
7500	7498,9	0,0	-0,9	1,5	0,6	0,4
8000	7943,3	0,0	-1,4	1,6	0,2	0,4
8500	8414,0	-0,1	-1,4	1,7	0,3	0,6
9000	8912,5	-0,1	-0,7	1,8	1,1	0,6
9500	9440,6	-0,1	-1,2	1,9	0,7	0,6
10000	10000	-0,1	-1,6	1,9	0,3	0,6
10600	10592,5	-0,2	-1,1	2,0	0,9	0,6
11200	11220,2	-0,2	-1,8	2,1	0,3	0,6
11800	11885,0	-0,2	-1,9	2,2	0,3	0,6
12500	12589,3	-0,3	-2,8	2,2	-0,6	0,6
13200	13335,2	-0,4	-2,6	2,3	-0,3	0,6
14000	14125,4	-0,5	-2,6	2,3	-0,3	0,6
15000	14962,4	-0,6	-2,5	2,4	-0,1	0,6
16000	15848,9	-0,8	-2,8	2,4	-0,4	0,6

II. Directional characteristic



Tab. 2 Directional characteristic for WS-15 - Numerical data

	1kHz	2kHz	4kHz	8kHz	12.5kHz
0	0.0	0.0	0.0	0.0	0.0
10	0.2	0.1	0.0	0.0	0.1
20	0.2	0.0	-0.2	-0.1	0.1
30	0.3	0.0	-0.3	0.2	-0.2
40	0.3	-0.1	-0.4	-0.2	-0.3
50	0.2	0.0	-0.6	-0.7	-0.7
60	-0.1	-0.1	-0.6	-1.2	-1.2
70	-0.3	-0.2	-0.8	-1.8	-2.2
80	-0.5	-0.2	-1.2	-2.4	-2.9
90	-0.7	-0.3	-1.4	-3.2	-3.9
100	-0.7	-0.5	-1.6	-3.6	-5.6
110	-0.7	-0.7	-1.4	-3.7	-6.6
120	-0.9	-1.0	-1.7	-3.6	-7.2
130	-1.2	-1.3	-2.1	-3.2	-6.5
140	-1.4	-1.4	-2.1	-3.5	-6.4
150	-1.3	-1.8	-2.3	-4.5	-6.4
160	-1.2	-1.7	-2.3	-4.1	-6.6
170	-1.1	-1.4	-2.1	-3.9	-6.0
180	-1.0	-1.1	-1.4	-2.3	-5.3
190	-1.1	-1.4	-2.1	-3.9	-6.0
200	-1.2	-1.7	-2.3	-4.1	-6.6
210	-1.3	-1.8	-2.3	-4.5	-6.4
220	-1.4	-1.4	-2.1	-3.5	-6.4
230	-1.2	-1.3	-2.1	-3.2	-6.5
240	-0.9	-1.0	-1.7	-3.6	-7.2
250	-0.7	-0.7	-1.4	-3.7	-6.6
260	-0.7	-0.5	-1.6	-3.6	-5.6
270	-0.7	-0.3	-1.4	-3.2	-3.9
280	-0.5	-0.2	-1.2	-2.4	-2.9
290	-0.3	-0.2	-0.8	-1.8	-2.2
300	-0.1	-0.1	-0.6	-1.2	-1.2
310	0.2	0.0	-0.6	-0.7	-0.7
320	0.3	-0.1	-0.4	-0.2	-0.3
330	0.3	0.0	-0.3	0.2	-0.2
340	0.2	0.0	-0.2	-0.1	0.1
350	0.2	0.1	0.0	0.0	0.1