

het beetje

May 2015



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English Version

Measuring Equipment



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Colodings & else

Milieuziektes translated in English means: **Environmental Illnesses.**

Besides Elektrosmog, there are quite a number of other elements in our environment, that can and do cause environmental illnesses.

One of them is **air pollution.**

Thanks to modern industrial society, and the greed for making great benefits, the air is polluted with a number of gasses and fine dust particles. Although many gases are also named, I now pick **fine dust particles** as a subject to write about.

On May 1, on RT.com the following could be read:

France may appear in the European Court of Justice in just two months if the country's authorities fail to tackle high levels of air pollution in 10 areas, including Paris, the European Commission has warned.

"The European Commission has asked France to comply with EU legislation requiring Member States to limit citizens' exposure to fine dust particles (PM10) by defining specific limit values to be observed," the commission said in a statement on its website on Wednesday.

These tiny particles are some of the most dangerous to public health and can cause asthma, allergies and other respiratory ailments.

Maximum daily limits have been recorded in 10 zones, including Paris, Marseille, Lyon and Nice.

"The Commission considers that France has failed to take measures that should have been in place since 2005 to protect citizens' health, and is asking it to take forward-looking, speedy and effective action to keep the period of non-compliance as short as possible."

If France "fails to act within two months, the Commission may take the matter to the EU Court of Justice," they concluded.

There are European guidelines for **fine dust particles** for humans:

PM10 (particles of 10µm): Year average **40** µg/m³

Daily average **50** µg/m³, but exceedings are allowed but maximal **35 days** a year.

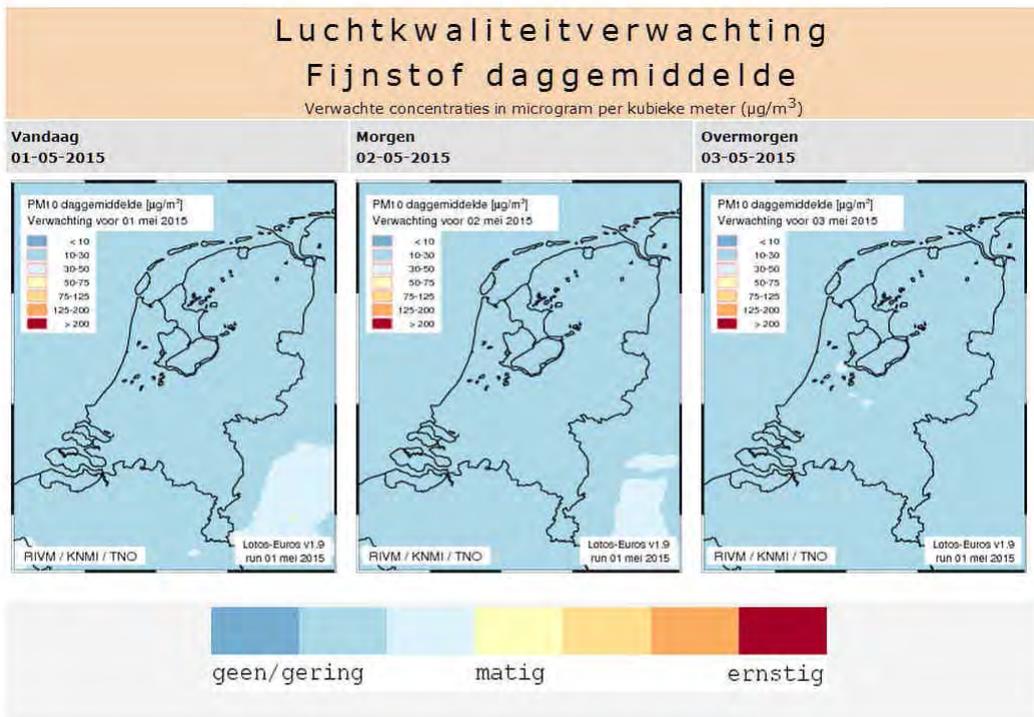
PM2,5 (particles of 2,5µm): Year average **25** µg/m³

Year average **20** µg/m³, (2015) but on urban background locations, the so-called exposure concentration.

Year average **18** µg/m³ (2020)

A lot of information can be found on: <http://www.compendiumvoordeleefomgeving.nl/>

In the Netherlands, the RIVM, a state organisation, publishes air measurements. See below that for 01-05-2015, the average in the country is between 10-30µg/m³, and across the border in Germany, a light-blue spot has 30-50µg/m³, which seems to diminish.

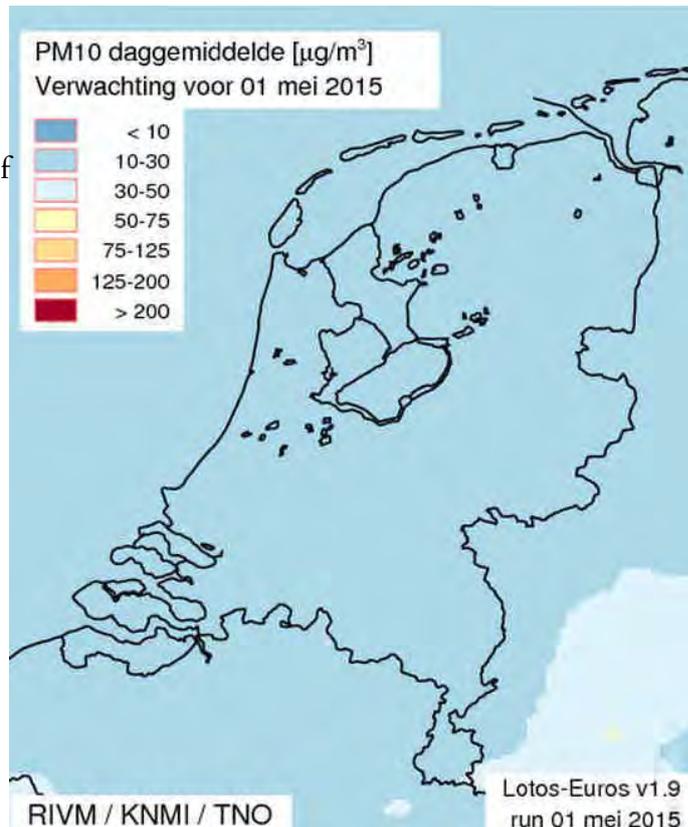


See for RIVM:
<http://www.lml.rivm.nl/>

See for DCMR (Rotterdam)
<http://www.dcmr.nl/>
 Here are also statistics of emissions of large companies in the area Rotterdam/Rijnmond.

Also:
<http://www.luchtmeetnet.nl/>

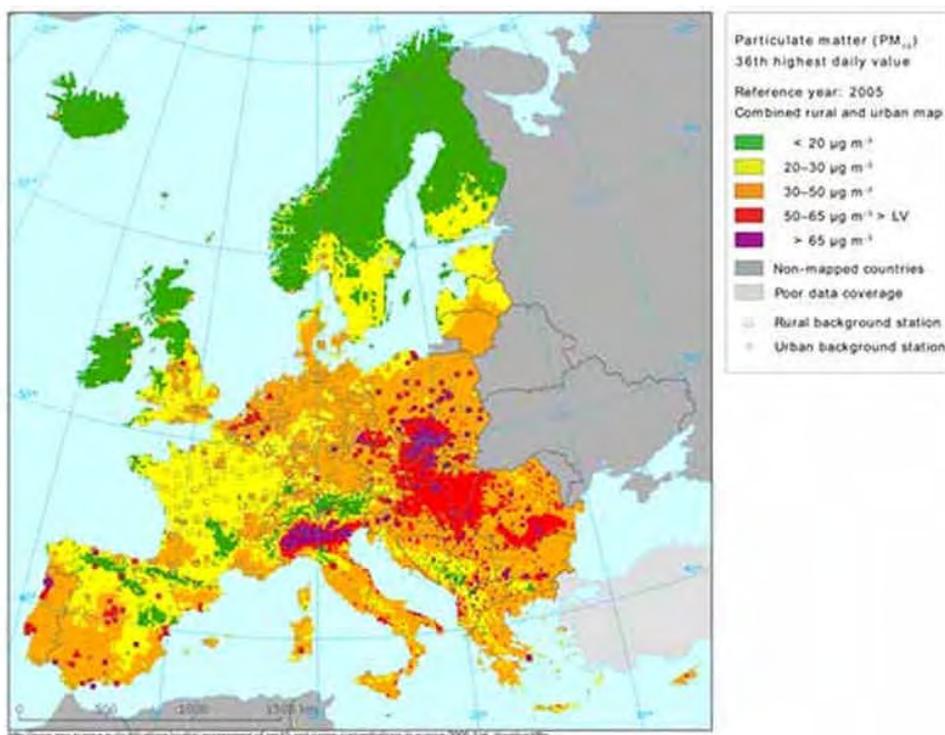
For Belgium:
<http://www.ircline.be/nl>



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Here a general picture of Europe around 2005.

Below the Netherlands.
The black spot in the south is Breda, where I live.

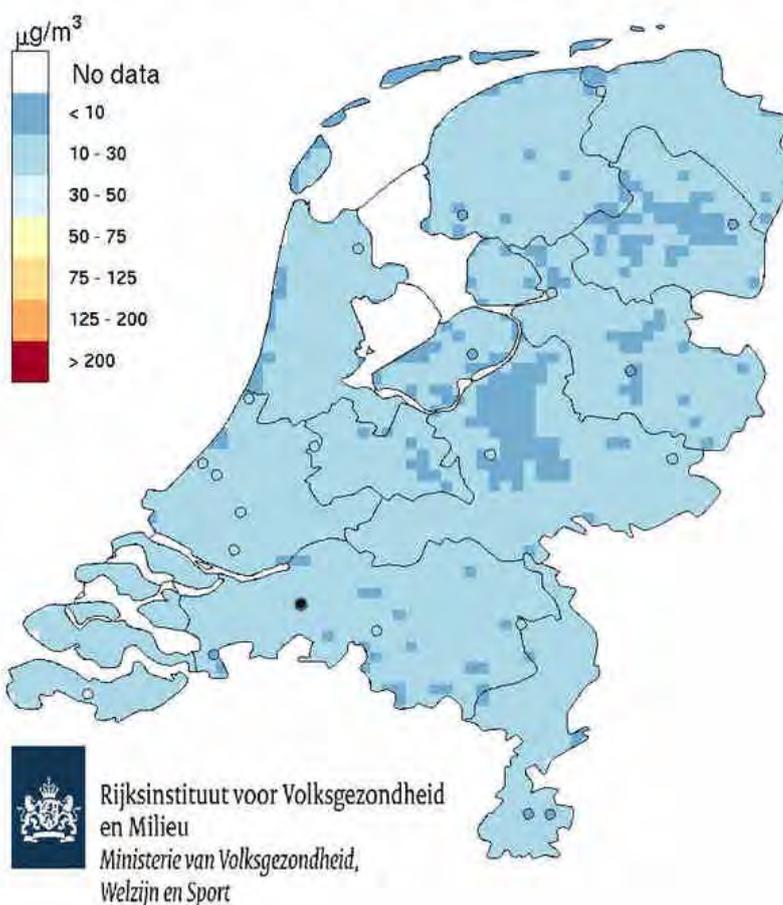
This place is particular, and dependant of the winds.

The winds may be coming from Maasvlakte Rotterdam, or the plants of Antwerp, or from the Ruhr area in Germany.

At this moment it is fair, although not optimal.

The most part of the country has 10-30µg/m³ and a number of spots show <10µg/m³, which is good.

PM₁₀: glijdend 24-h gemiddelde
01-05-2015 14:00 - 15:00



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NL10033	Zeydel-Doornmeijer	44	40	43	40	41	47	3	6	6
NL10644	Cabauw-Wielsekade	-	-	-	-	-	2*	7	8	6
NL10722	Eibergen-Lintveldseweg	21	10	21	26	25	9	4	4	10
NL10738	Wekerom-Riemterdijk	21	14	18	12	23	11	6	6	10
NL10807	Hellendoorn-Luttenbergerweg	18*	11	14	20	16	10	9	13	8
NL10818	Barsbeek-De Veenen	19	8	13	13	14	6	6	12	8
NL10918	Balk-Trophornsterweg	14	13	11	26	25	9	3	9	10
NL10929	Valthermond-Noorderdiep	10	4	10	23	21*	5	4	15	5
NL10934	Kollumerwaard-Hoöge Zuidwal	14	7	9	16	18	9	2	10	3
Stedelijke achtergrondstations		2007	2008	2009	2010	2011	2012	2013	2014	2015
NL10138	Heerlen-Jamboreepad	-	-	-	-	-	-	-	4	9
NL102	Breda-Bastenakenstraat	29	19	19	20	27*	17	13	10	12
NL10247	Veldhoven-Europalaan	-	-	-	22	34	23	15	6	8
NL10404	Den Haag-Rebecquestraat	31	14	21	23	34	10	10	14	5
NL10418	Rotterdam-Schiedamsevest	33	15	19	16	22	11	9	7	8
NL10442	Dordrecht-Bamendaweg	-	-	-	5*	22	8	10	9	7
NL10446	Den Haag-Bleriotlaan	15	23	17	17	18	6	8	6	6
NL10549	Laren-Jagerspad	-	6	17	15	19	9	8	7	6
Verkeersbelaste stations		2007	2008	2009	2010	2011	2012	2013	2014	2015
NL10136	Heerlen-Looierstraat	40	13	19	19	27	19	18	5	9
NL10236	Eindhoven-Genovevalaan	42	24	28	19	36	19	18	8	6
NL10237	Eindhoven-Noordbrabantlaan	38	27	29	25	41	21	20	11	10
NL10400	Breda-Tilburgseweg	36	20	23	32	37	16	14	11	10
NL10433	Vlaardingen-Floreslaan	27	18	14	21	24	12	9	13	8
NL10445	Den Haag-Amsterdams Veerkade	3*	-	4*	35	35	9	12	14	9
NL10447	Leiden-Willem de Zwijgerlaan	26	20	24	27	48	11	9	9	16
NL10545	Amsterdam-A10 west	10*	27	29	28	40	7	8	15	11
NL10550	Haarlem-Schipholweg									6
NL10636	Utrecht-Kardinaal de Jongweg	20	20	15	22	44	19	7*	11	12

Above is an overview in which places the norm has been exceeded yearly (so $> 50\mu\text{g}/\text{m}^3$). Breda-Bastenakenstraat is not far from where I live, a relatively calm street, and this year it was exceeded already 12 times!

Breda-Tilburgseweg is a heavy road point for traffic. Here it was exceeded 10 times this year.

But this data sheet does also show a decline in the exceedings in most measuring points, seen over a couple of years.

Emission by traffic, for instance by diesel engines; also those in ships and locomotives. Fine dust particles are produced by friction of brakes, grating of rubber tyres and the road surface;

Emissions by industry. Also by trans-shipment of bulk goods;

Emissions by cattle stock farms, by straw and dried manure in stables;

Emissions by electricity power plants;

Emissions by houses, by open fire, a wood stove, a multi-burner, a barbecue, and smoke of tobacco; Gas-stoves, gas central heating, gas geysers.

And of course by natural sources like sea salt or dust from the soil.

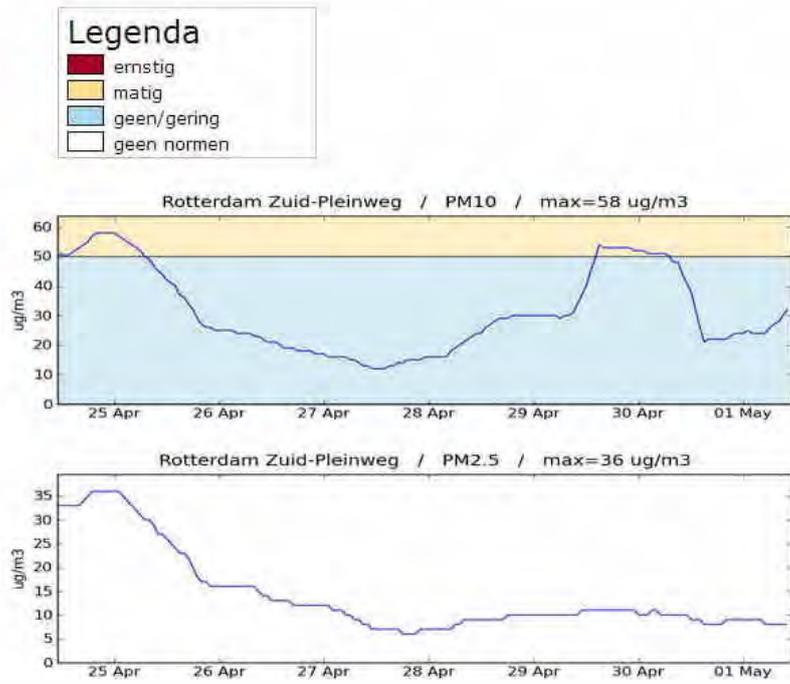
It is known that health damages especially do occur by the smaller fractions of the particle size partition: The PM_{2.5}. These particles do penetrate deepest in the lungs, and are causing the most damage. A greater part of this is caused by mankind, especially by traffic. Generally only the PM₁₀ is measured, because that is simpler and because so historical series can be compared with each other.

The fine particles end up in the lungs if inhaled. Particles larger than 10 microns (one hundredth of a millimetre) can be retained by the nose and excreted through the mucous membrane.

The hypothesis is that the tiny particles cause inflammatory reactions and complicate the oxygen. These inflammatory responses, where radicals are released, are harmful to the heart. Possibly fine particles causes that the blood becomes more viscous, thus increasing the chance of a heart attack. There are neurological effects found, that for example the heart muscle function can be affected.

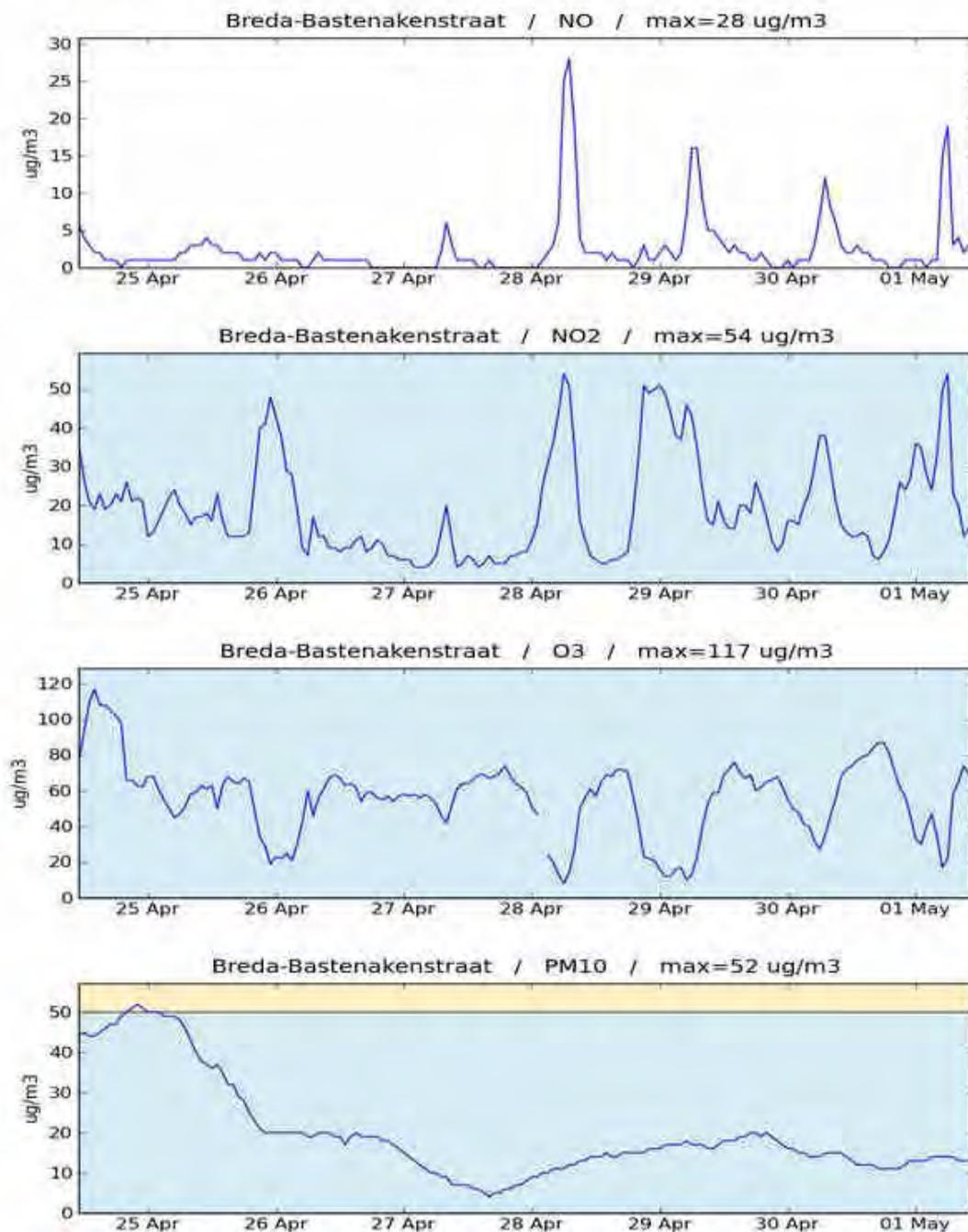
Finally radicals are associated with premature aging.

Epidemiological and toxicological studies show that in the Netherlands, several thousand people annually die prematurely by a short-term exposure to fine dust particles. The mortality rate due to chronic exposure may be a multiple thereof.



Legenda

- ernstig
- matig
- geen/gering
- geen normen



These graphs do show measurements over a certain period.
 It is remarkable that there does not seem to be a correlation in the curves between the different parts of the air pollution.
 So, no correlation between NO, NO2 and PM10 can be observed.

From the shown graphs it is clear, that the amount of air pollution, that is fine dust particles, is not a steady amount, but with ups and downs, where the ups are more important to know, especially when the wind direction is changing, and especially in my town.

Therefore I am now using a particle counter, in order to know when to shut the windows and start our air cleaner.

Be aware that most air cleaners do work with negative ions. That process produces a lot of *dirty air*, meaning a lot of **dirty frequencies, so elektrosmog**.

Because I have good experience with Chinese products, I am using the Particle Counter LJ-0A5 made by LanJia Environmental Protection Technology Co., Ltd.

Contact: katrina at e-mail: lanjia.katrina@gmail.com

<http://www.ionaircleaner.com/>

<https://www.youtube.com/watch?v=fqXYDKkdp0A&feature=youtu.be>



The LJ-0A5 costs a fraction of comparable meters.

It has a Lithium battery, and a USB loader is in the package. However, it lacks a European plug.

But a converter USA/EU is not difficult to find.

Accuracy $\pm 15\%$.

When pressing the middle button, the sampling time of 35 seconds starts automatically, with counting the number of particles $0,3\mu\text{m}$ and $2,5\mu\text{m}$, and at the end it shows the readings.

Pressing the upper button starts the counting of the PM_{2,5} and PM₁₀ values.

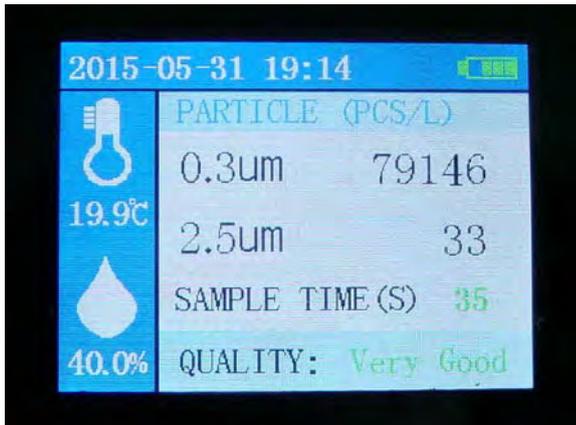
The lower button shows the last 6 results.

The meter works with a German laser.

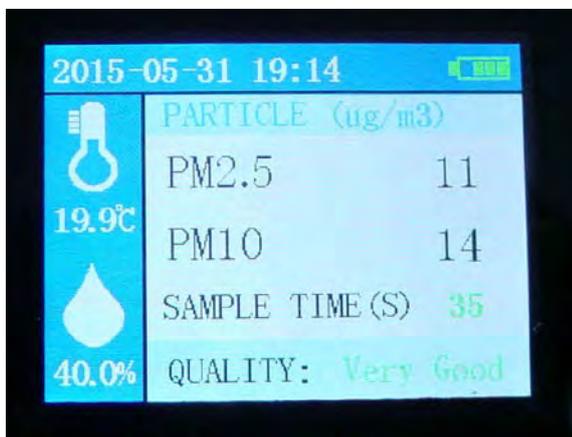


This meter measures TWO different units: The **number** as well as the **weight** of particles:

1. The **number** of particles per litre: 0,3µm as well as 2,5µm.



2. The **weight** of particles in µg/m³: PM2,5 and PM10.



The last 6 values are recorded: the latest is green.



I am very satisfied with this meter.
It is affordable, small and hand held.

Sure there is iSPEX. That is an adapter for the iPhone. A number of photographs are taken, and transmitted to a laboratory, where the results are calculated. But you do not know directly what is going on, I assume.

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InDesign CS, Acrobat 6.0, Photoshop CS, Paint Shop Pro 9, XaraX 1.0,
Painter IX, KPT 5, S-Spline 2.2 en veel fantasie [1938 was toch wel een goed jaar].

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U dient dit dan wel via een e-mail kenbaar te maken aan:

info@hetbitje.nl

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