

**Institut  
für  
Wärme-, Klima- & Verfahrenstechnik e.V.**

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44879 Bochum

**TEST PROTOCOL  
AND  
CERTIFICATE**

IWK 06-009e

Vereinsregister Bochum Nr. 1858  
IWK Steuer Nr.: 350/5702/0071

**Managing Director Dr.-Ing. K. Bolst,**

1. Chairman Prof. Dr.-Ing. M. Petermann, 2. Chairman Dipl.-Ing. G. Brandin

**Measurement protocol  
VITALI-Leuchte (single device),  
20 W-Energy saving Lamp with Ionizer  
IWK 06-009e**

Client: Eudemon international LTD.

1. The measurement with an energy saving lamp with Ionizer from Eudemon should be made of
  - negative Ions,
  - produced Ozon,
  - and dust retainment.
2. Measurements were made according to the clients request:

**Task**

Sales : Eudemon International LTD  
Origin : China  
Type : **VITALI-LEUCHTE**  
(sold under this brand in Germany);  
equals:

**Description of device**

**Trade name RICHER**  
(CE-certificated under this name.),

3. Instruments:  
**Ionometer IM5005**, Umweltanalytik Holbach,  
Serial-No.: 13IM057,  
Program IM5005.EXE, Version 1.7

**Measurement equip-  
ment**

Closed test box made of glass

**Ozone sensor SDM-O3-06**,  
Unitronics**Universal Hygro-/Thermometer GFTH 200**,  
GreisingerAll measurements were done between  
07/06 to 08/01/2006.surrounding air conditions:

T = 22-26 °C,  
RH = 51-59 %,  
Air pressure = 1026 hPa

**Time of investigation**

4. >> This Protocol contains 12 pages <<

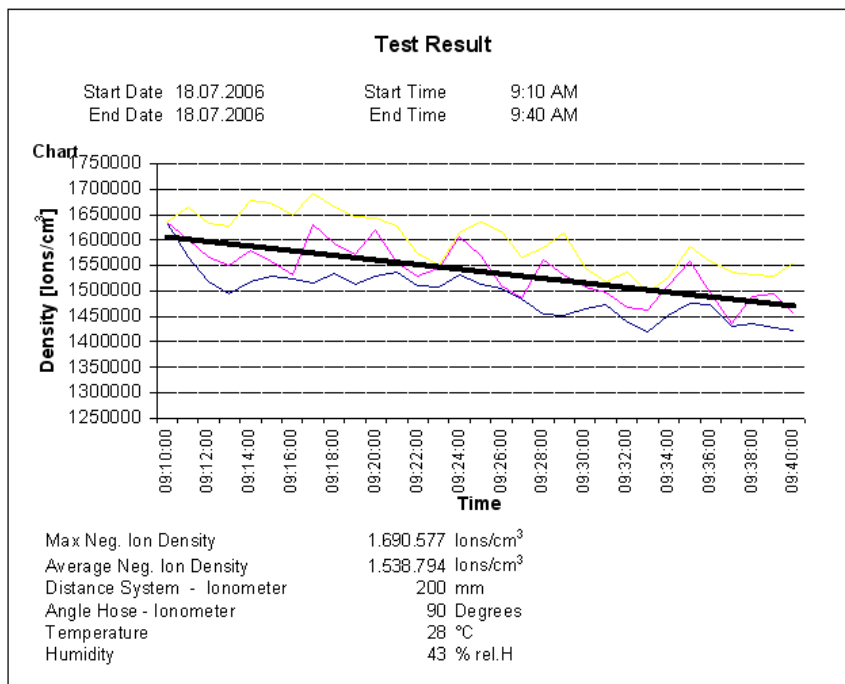
**Results**

5. Results of measurements  
(4 + 1 graphics)

Test sample  
-07/18/06-  
200mm  
1sec

System Type: **Forest Anion 20 W**

Serial-No: **Test 1**



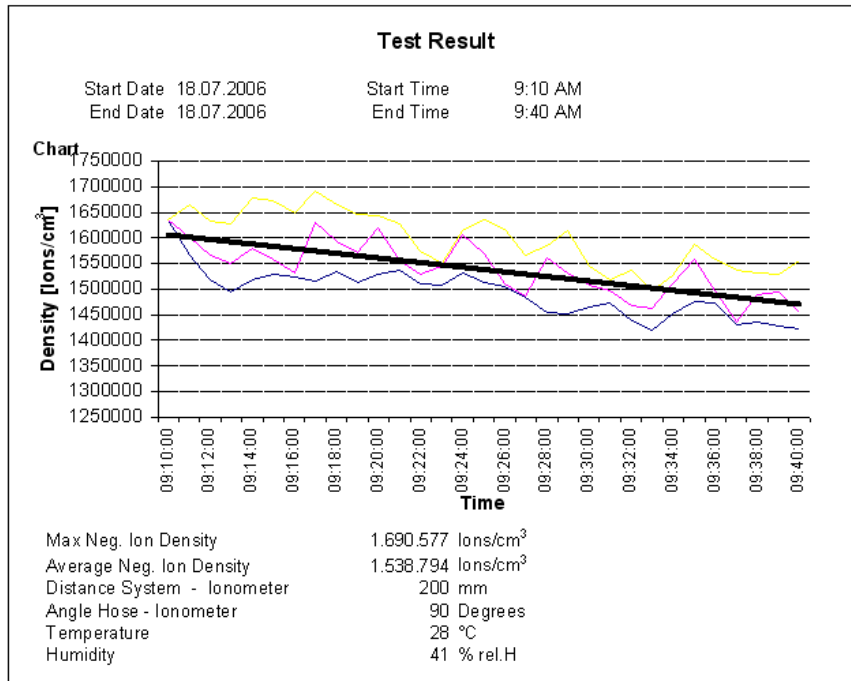
**Graphic 1**  
**Density of negative Ions**

Test Equipment
Ionometer IM 5005 Serien-Nr.: 13IM057

Test sample  
-07/18/06-  
200mm  
1sec

System Type: forest Anion 20W

Serial-No: Test2



Graphic 2

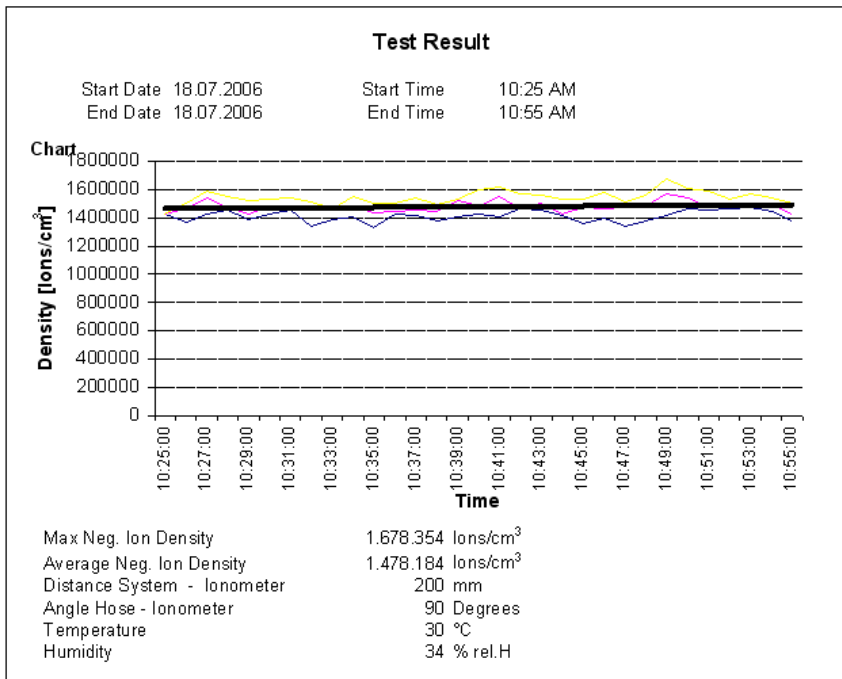
Density of  
negative Ions

Test Equipment  
Ionometer IM5005    Serien-Nr.: 13IM057

Test sample  
-07/18/06-  
200mm  
1sec

System Type: 0

Serial-No: Test 3



Graphic 3

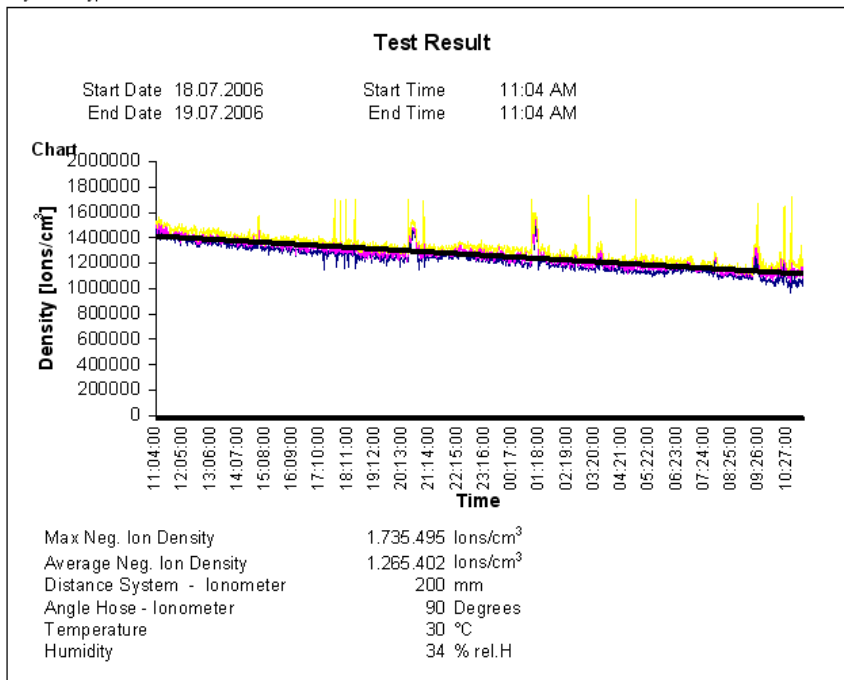
Density of  
negative Ions

Test Equipment  
Ionometer IM 5005    Serien-Nr.: 13IM057

Test sample  
-07/18/06-  
200mm  
1min  
24h

System Type: **Forest Anion 20 W**

Serial-No: **Test 4-24h**



Graphic 4

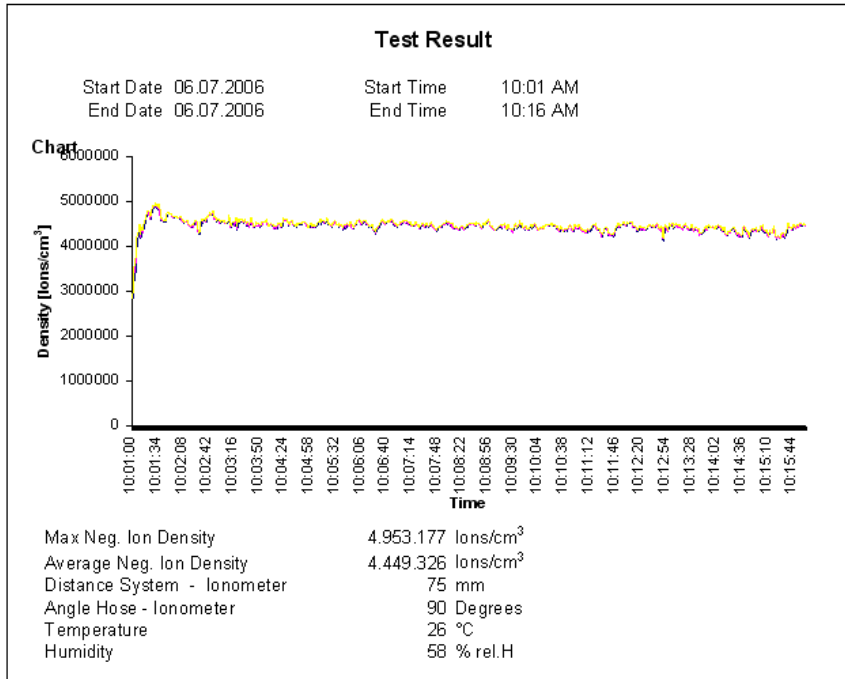
Density of  
negative Ions

Test Equipment  
Ionometer IM 5005    Serien-Nr.: 13IM057

additionally a further ideal measurement of the lamp.

System Type: **KOREAN Product**

Serial-No: **Prototype 20W**



Graphics 5

(additionally)

Density of  
negative Ions

Test Equipment	
Ionometer IM5005	Serien-Nr.: 13IM057

**REVIEW**

The Energy saving lamp is built as a lamp for inside living room.

It has an ion gun at its bottom in the middle. By its spiral geometry the ionizer is protected so far that one cannot touch it without using a tool.

The main task was to make some high resolution measurements between 15 and 30 minutes and a long term Measurement of about 24 hours.

The short time measurements (Graphics 1-3, page 3-5) show extremely constant high values within a range of 30 minutes at measurement intervals of one second within 30 minutes and the mean value of 30 measurements per second.

Graphic 4 (page 6) of the long-term-measurement is self-explaining:

"high values", "very constant" and only "small oscillations around the mean".

## Ozonwerte

The ozone-measurement was made according to the guideline  
**EN 60335-2-65 - Abschnitt 32.**

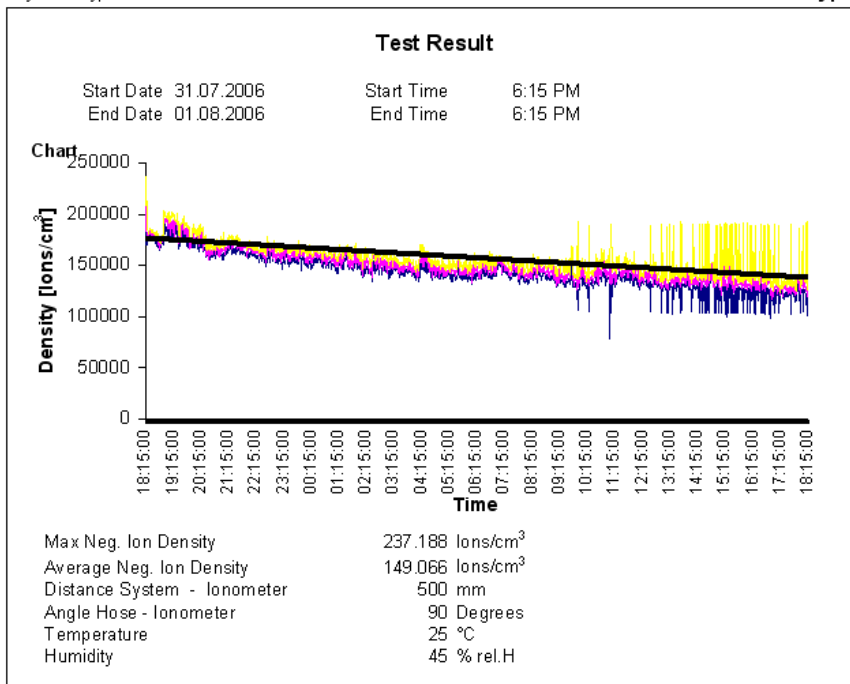
No ozone could be measured 50 mm from the outlet.

Within the framework of the 24 hours EN-testing further pa-  
rameters were measured, which speak for this lamp.

The mean concentration of ions was about 149,066 negative  
Ions.

Test Sample  
-07/31/06-  
500mm  
24 h  
1 min

System Type: **Vitali-Leuchte 20 W** Serial-No: **Prototype**



Grafik 6

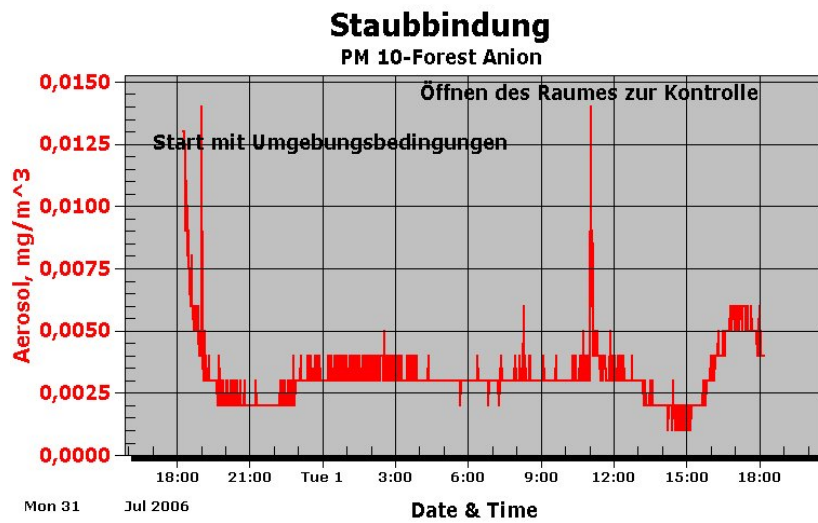
Density of  
negative Ions

Test Equipment  
Ionometer IM5005 Serien-Nr.: 13IM057

This a Value that most of the "only air purifiers" do not reach.

The dust quantities in this room went down from 14  $\mu\text{g}/\text{m}^3$  to 1  $\mu\text{g}/\text{m}^3$ .

This is a dust reduction of about 92 %.



Graphic 7  
Dustreduction

**More test results:**

The surface temperature of the lamp was between 70 °C and 75 °C.

Die high voltage of the ionizer was constantly at 3,79 kV without any AC-overlays and a very constant DC-power (look to the following 3 photos)

photo 1: High voltage



Photo 2: DC

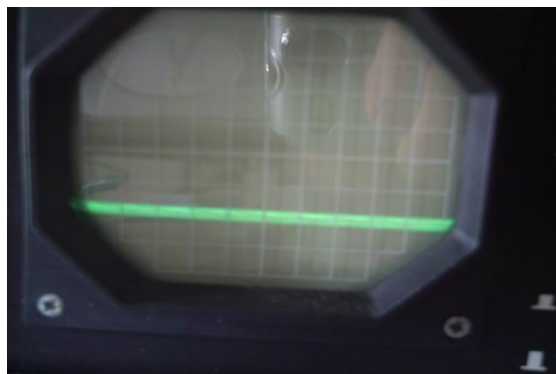
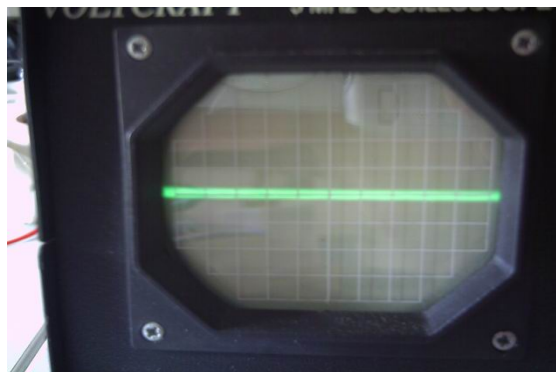


photo 3: AC



**EXECUTIVE SUMMARY:**

**Because of the measurement results I find out,  
that this energy saving lamp is very good in producing  
reliable negative ions.**

**The dust reduction was measured in a test room of  
25 m<sup>3</sup> . For larger rooms you only need the correspond-  
ing amount of lamps.**

**We could not measure any additional ozone.**

**IWK**

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