



VIRUSFREEAIR®  
clean air everywhere



VFA®-Solutions

To Who it may concern,

August 2, 2017

Subject: Translation of ECN test certificate

Our ref:

Your ref:

Dear Sir or Madam:

This document form a translation of the test certification performed by Energy research Centre of the Netherlands (ECN) on 16 December 2010. The tested system was the first generation of the ASPRA L 1000 stand-alone system, **using only 1 layer of collector** and having much higher face velocities in the system (speeds 1, 2, 3 and 4 are representative with face velocities of: 1.4, 2.5, 3.2 and 3.3 m/sec).

Since then the ASPRA has been modified and improved for better performance, face velocities and filtration efficiencies. The original certificate is attached to this document.

Sincerely,

Eliane Khoury, Managing Director and founder of VFA Solutions B.V. and Virus Free Air B.V.

(Name / Function)

Schiedam

(Place)

14-01-2017

(Date)

(Signature)

**VFA-Solutions**

*The specialist in air treatment  
and indoor air quality*

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## Translation of certificate

# Air purification capacities for the ASPRA air purifier of Virus Free Air registered company at Delft

*The Air purifier of Virus Free Air BV from Delft, is tested in the large aerosol test chamber of the air quality group of the department BKM at the Energy Research Centre of the Netherlands (ECN), located at Westerduinweg 3 in Petten, North-Holland, The Netherlands.*

*The results indicate that the ASPRA Air purifiers of Virus Free Air BV from Delft comply with the requirements and criteria as stated in the table below.*

*The capture efficiency is dependent on the airflow speed, which is defined here as face velocity. The efficiency at different ventilation speeds (capacities) are stated in the tables below based on aerosol particles size of 0.3 micrometers (in diameter).*

*For Salt-aerosols the filtration system complies with the criteria in table 1*

**Table 1**

Speed of the VFA air purifier	Face Velocity in m/s	Filtration efficiency in percentage (salt)	Comply with NEN-EN 1822-1 class	Comply with Eurovent class	Comply with DIN 24183 class
1	1.4	96%	H11	EU 11	R
2	2.5	93%	H10	EU 10	Q
3	3.2	88%	H10	EU 10	Q
4	3.3	83%	Less than H 10	Less than EU 10	< Q

*For Cigarette Smoke - aerosols the filtration system complies with the criteria in table 2*

**Table 2**

Speed of the VFA air purifier	Face Velocity in m/s	Filtration efficiency in percentage (salt)	Comply with NEN-EN 1822-1 class	Comply with Eurovent class	Comply with DIN 24183 class
1	1.4	91%	H11	EU 10	Q
2	2.5	78%	Less than H10	< EU 10	< Q
4	3.3	73%	Less than H10	< EU 10	< Q

## Original Certificate:

### **Certificaat Luchtreinigende Capaciteit Voor de ASPRA van Virus Free Air gevestigd te Delft**

*De luchtreiniger ASPRA van Virus Free Air BV te Delft, is getest in de grote aerosolkamer van de groep Luchtkwaliteit van afdeling BKJ bij ECN (Energieonderzoek Centrum Nederland) Westerduinweg 3 in Petten Noord-Holland. De resultaten geven aan dat de luchtreiniger ASPRA van Virus Free Air BV te Delft voldoet aan de criteria zoals die in de onderstaande tabel vermeld staan. De afvangst-efficiency is mede afhankelijk de aanstroomsnelheid van de lucht, hier gedefinieerd als face velocity. De efficiency bij de verschillende ventilatiestanden is in tabellen weergegeven en geldt voor een aerosolgrootte van 0.3 µm (diameter).*

*Voor zout-aerosol voldoet het filtersysteem aan de criteria gesteld in tabel 1*

**Tabel 1**

Stand VFA-reiniger	Face velocity in m/s	Afvangst in procent (zouten)	Voldoet aan NEN-EN 1822-1 klasse	Voldoet aan Eurovent klasse	Voldoet aan DIN 24183 klasse
1	1.4	96 %	H11	EU-11	R
2	2.5	93 %	H10	EU-10	Q
3	3.2	88 %	H10	EU-10	Q
4	3.3	83%	Minder dan H10	< EU-10	< Q

*Voor sigarettenrook voldoet het filtersysteem aan criteria gesteld in tabel 2:*

**Tabel 2**

Stand VFA-reiniger	Face velocity in m/s	Afvangst in procent (rook)	Voldoet aan NEN-EN 1822-1 klasse	Voldoet aan Eurovent klasse	Voldoet aan DIN 24183 klasse
1	1.4	91 %	H10	EU-10	Q
2	2.5	78 %	Minder dan H10	< EU-10	< Q
4	3.3	73%	Minder dan H10	< EU-10	< Q

*Aldus opgemaakt d.d. 16 december 2010 door:*

*G.P.A. Kops*

*onderzoeker / aerosolresearch*

*Groep Luchtkwaliteit en klimaatverandering*

*ECN postbus 1, 1755 ZG Petten*

*Handtekening:*

