



# EN 1822 - 2009 EPA, HEPA and ULPA filter testing





- EN 1822 describes a test method and classification system for /EPA/HEPA/ULPA filters
- HEPA/ULPA filters have a minimum efficiency (maximum penetration) at a specific particle size = MPPS
- Efficiency is the initial value of a new filter

## 5.2 Groups of filters

According to this standard, filter elements fall into one of the following Groups:

—	Group E:	EPA filters	(Efficient Particulate Air filter);
—	Group H:	HEPA filters	(High Efficiency Particulate Air filter);
—	Group U:	ULPA filters	(Ultra Low Penetration Air filter).

**Table 1 — Classification of EPA, HEPA and ULPA filters**

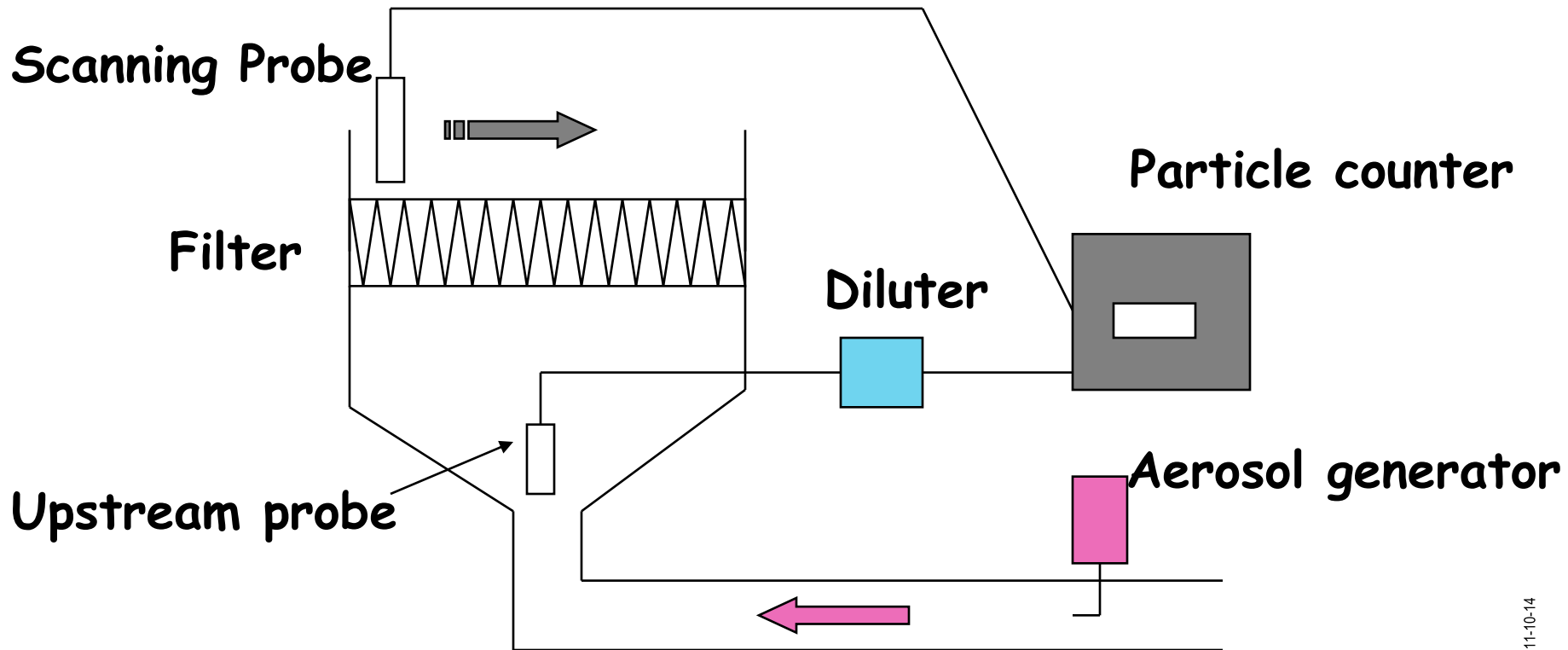
Filter Group Filter Class	Integral value		Local value <sup>a b</sup>	
	Efficiency (%)	Penetration (%)	Efficiency (%)	Penetration (%)
E 10	≥ 85	≤ 15	--- <sup>c</sup>	--- <sup>c</sup>
E 11	≥ 95	≤ 5	--- <sup>c</sup>	--- <sup>c</sup>
E 12	≥ 99,5	≤ 0,5	--- <sup>c</sup>	--- <sup>c</sup>
H 13	≥ 99,95	≤ 0,05	≥ 99,75	≤ 0,25
H 14	≥ 99,995	≤ 0,005	≥ 99,975	≤ 0,025
U 15	≥ 99,999 5	≤ 0,000 5	≥ 99,997 5	≤ 0,002 5
U 16	≥ 99,999 95	≤ 0,000 05	≥ 99,999 75	≤ 0,000 25
U 17	≥ 99,999 995	≤ 0,000 005	≥ 99,999 9	≤ 0,000 1

<sup>a</sup> See 7.5.2 and EN 1822-4.

<sup>b</sup> Local penetration values lower than those given in the table may be agreed between supplier and purchaser.

<sup>c</sup> Group E filters (Classes E10, E11 and E12) cannot and shall not be leak tested for classification purposes.

# EN 1822 test rig principle







# Camfil Farr EN 1822 test rig

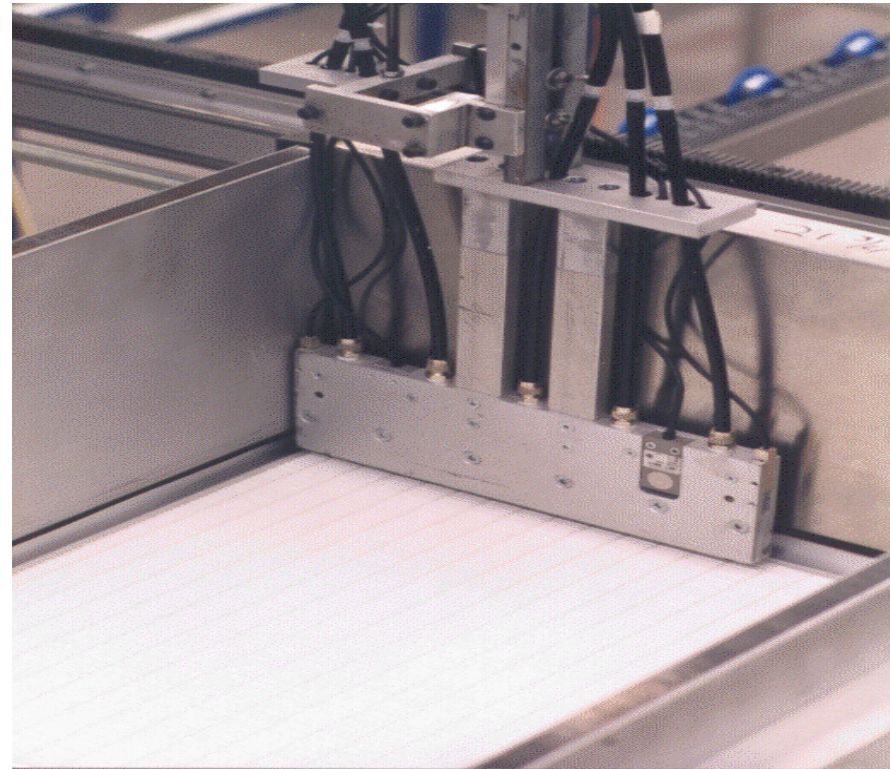
- **Test for**
  - **Leakage**
  - **Overall Efficiency**
  - **Pressure Drop**





# Camfil Farr EN 1822 test rig

- **Computer -Controlled**
- **6 particle counters(fast & accurate leak detection)**
- Detects leaks, measures dp and overall efficiency



# Individual scanner report:

- Filter model
- Filter serial number
- Actual pressure drop
- Actual MPPS efficiency
- Leak test/local penetration
- Test air flow

