



**BESTÄTIGUNG
CONFIRMATION**

**Nr./No. 002-2 RLT-E
Short Summary**

**Prüfstelle
Testing station
Kälte-und Klimatechnik
Klima-und Lufttechnik
Laboratorium für Kälte-und Klimatechnik**

**TÜV SÜD Industrie Service GmbH
Center of Competence für**

**Prüfgegenstand
Test unit**

**Operationsdeckensystem mit turbolenzärmer Strömung
Ausführungsart: TAV-System
Air-supply ceiling with unilateral air flow
Type of construction: TAV-System**

**Auftraggeber
Orderer**

**Tecnair LB s.r.l
Via Caduti della Liberazione, 53
21040 Uboldo - Varese
Italy**

**Auftragsumfang
Scope of the order**

**Dichtheitsprüfung und Partikelmessung
Ermittlung Partikelabscheidegrad und Schutzgradwirkung
Leakage test and measuring of the particle concentration
Determination of the particle separation efficiency and protective effect**

**Prüfzeitraum
Date of testing**

24.05.2005

**Prüfort
Place of test**

Uboldo - Italy

Grundlage

TÜV-Report 002 RLT - E. dated 23.06.2005

**Basic of Confirmation
Conceptual formulation**

The task of this test was to prove the operability of the air-supply ceiling and the determination of the protection class. The detailed results are written down in TÜV SÜD Report 002 RLT - E dated 23.06.2005.

The tests on the prototype have been finished with the following results:

1. The measurement of the separation efficiency on the new prototype design, first version of the air-supply ceiling, fulfil the requirement concerning the leakage.
2. Particle measurement according to draft VDI 2167 did not reached in first routine the required class 4.
3. To go ahead with tests, the decision was made to modify the Dummies. Flexible tube of the Dummies were replaced by aluminium foil with a thickness of 1mm and provisionally closed on the top similar to a collapsible tube.

Temperature inside the room after the modification of the Dummies:

Inside the unilateral air flow: 20,0 °C
Outside the unilateral air flow: 20,3 °C

The function of the unilateral air flow ceiling has to be assured through a sufficient large temperature difference between the save area and the room within a spectra of ΔT from 0.5 to 3 K. In the case under consideration a temperature difference of 0.3 K was determined. Normally at least a temperature difference of 1-2 K is necessary.

This edge conditions were not fulfilled by the existing experimental set-up.

4. The final test of the particle measurement, after all optimization are given under optimal conditions; the prototype of unilateral air flow ceiling has protection class 4.4.

5. The previous command variable is an constant overpressure of 33 Pa inside the surgical room is not useful.

6. In the area of the unilateral air flow ceiling actually slightest or no particles could be measured. The function of the ceiling according to draft DIN 1946-4 is fulfilled in principle.

7. The requirement of turbulent current $\leq 5\%$ if fulfilled.

8. The hermetically sealed ending is coercible necessary, because in fact of eventually possible leakage on the filter sealing, this leakage will be sucked off with under pressure over a kind of hollow space around the filters frames.

This is a major design feature of the complete system.

**Center of Competence for
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Bernhard Schrempf**

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