ICTR

International Collaboration for Turbulence Research

http://www.ictr.eu

ICTR is a collaborative effort of experiment, simulation, and theory focusing on the spatio-temporal **dynamics of particles in turbulent flows**. This Lagrangian approach is key to the understanding of many environmental, technical, and biological systems.ICTR was born out of the realization that progress in turbulence requires going beyond the financial, technical, and manpower capabilities of a single researcher or a single research group. ICTR uses and develops shared experimental facilities, data analysis technology, and new theoretical concepts and approaches. ICTR fosters opportunities for exchange of students, postdocs and senior researchers. ICTR provides an open-access knowledge base of its experimental, numerical and theoretical findings.

Monash University

Risoe Nat. Lab., Danish Nat. U., Kopenhagen U.

University of Helsinki

Grenoble, Nice, Lyon, Paris

MPI Göttingen, University of Ilmenau

Imperial College

University of Reykjavik

Indian Inst. of Technology

Tel Aviv University, Weizmann Institute

Genoa, Rome, Torino

University of Delft, Eindhoven, Twente.

Warsaw University

ETH Zürich

Cornell University, Johns Hopkins, Los Alamos National Laboratory, Michigan Tech.

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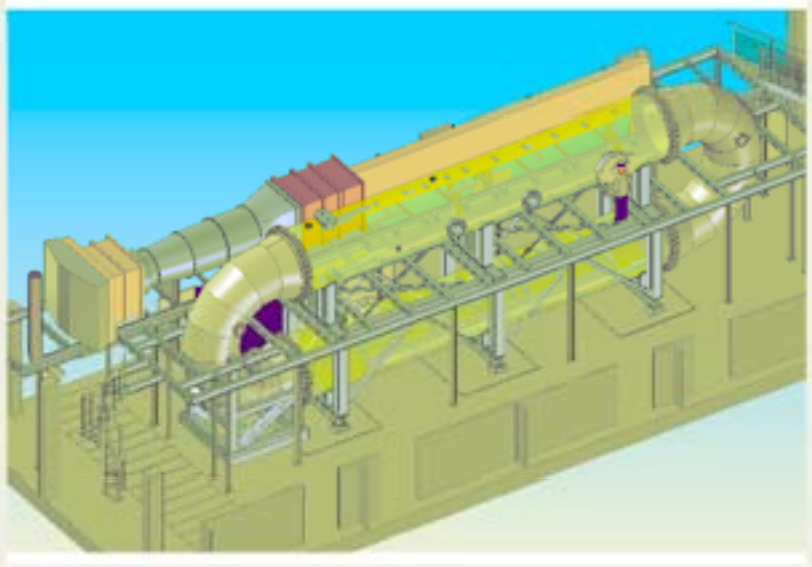
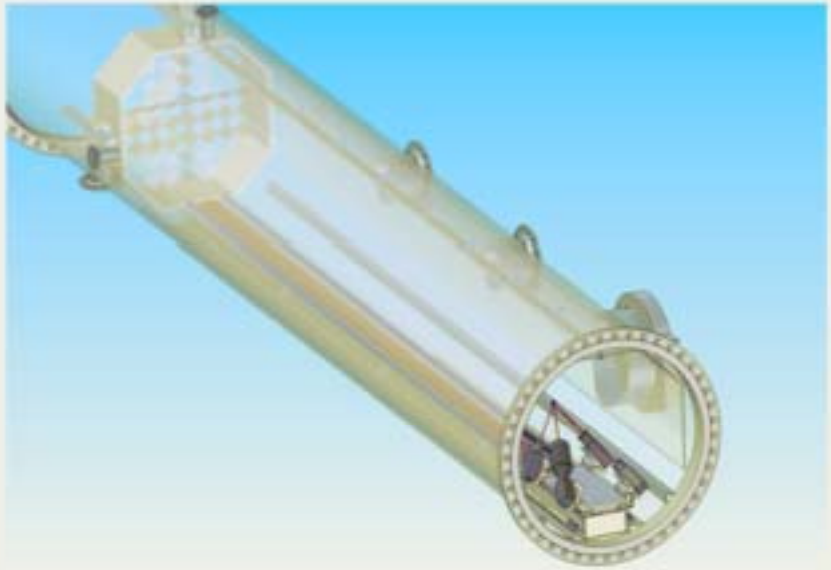
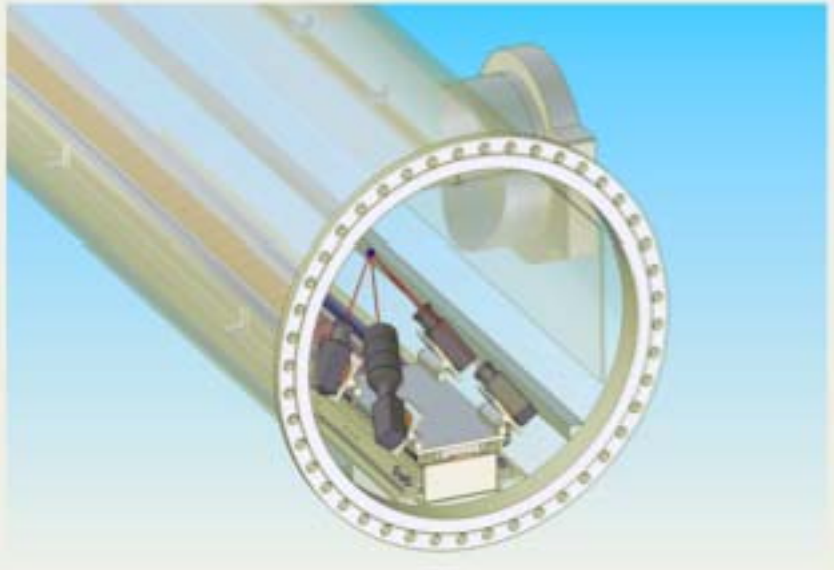
Max-Planck-Institut für Dynamik und Selbstorganisation



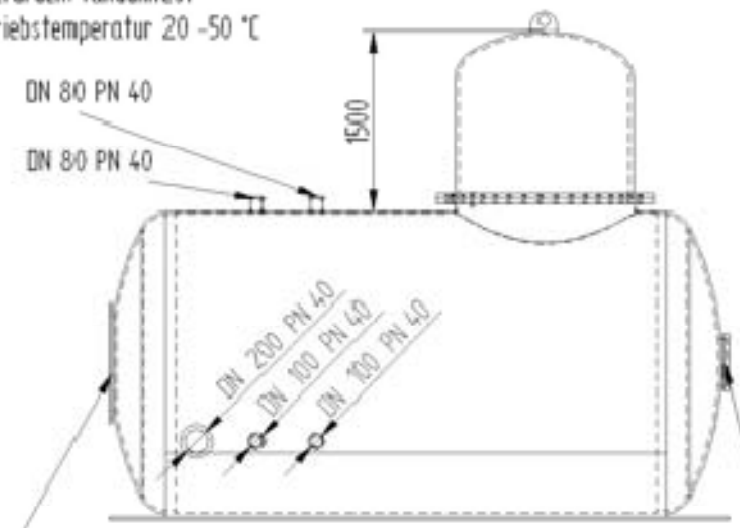
Characteristics:

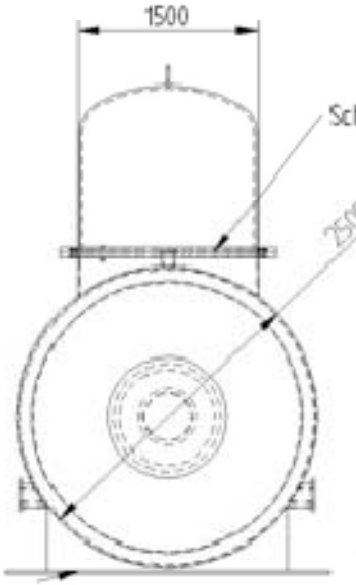
R_λ > 10.000
η > 10 μm
τ > 0.5 ms
<U> < 5 m/s
L < 50 cm
u_{rms} < 1m/s

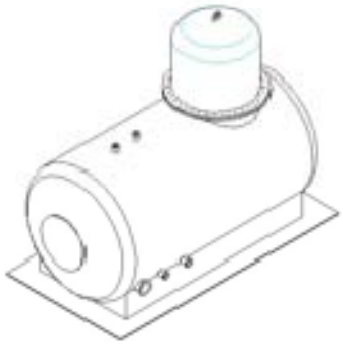




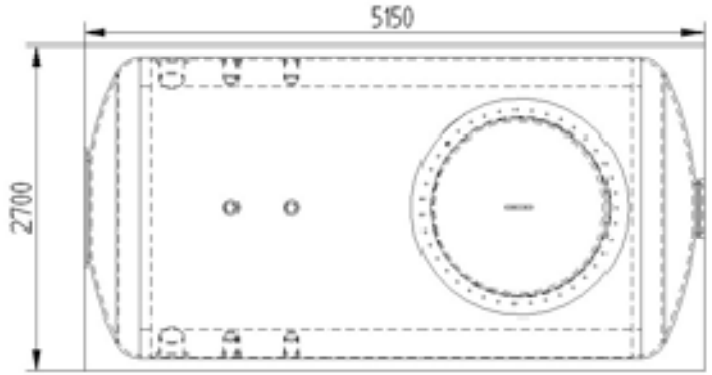
Betriebsdruck Behälter: 1 mbar – 15 bar
Auslegungsdruck (Überdruck): 19 bar
Unterdruck: vakuumfest
Betriebstemperatur 20 -50 °C







Flanschstutzen DN 400 PN 40 mit Blinddeckel



Allg.-toleranzen n. DIN ISO 2768 T1 u. T2 Toleranzkl. m-K		Oberfl. Angb. n. DIN 3142 oder ISO-1302
	Datum	Name
Gez.	28.03.07	KUB
Gepr.		
Gen.		

MPIDS

Maßstab: 1 : 50, 1 : 100

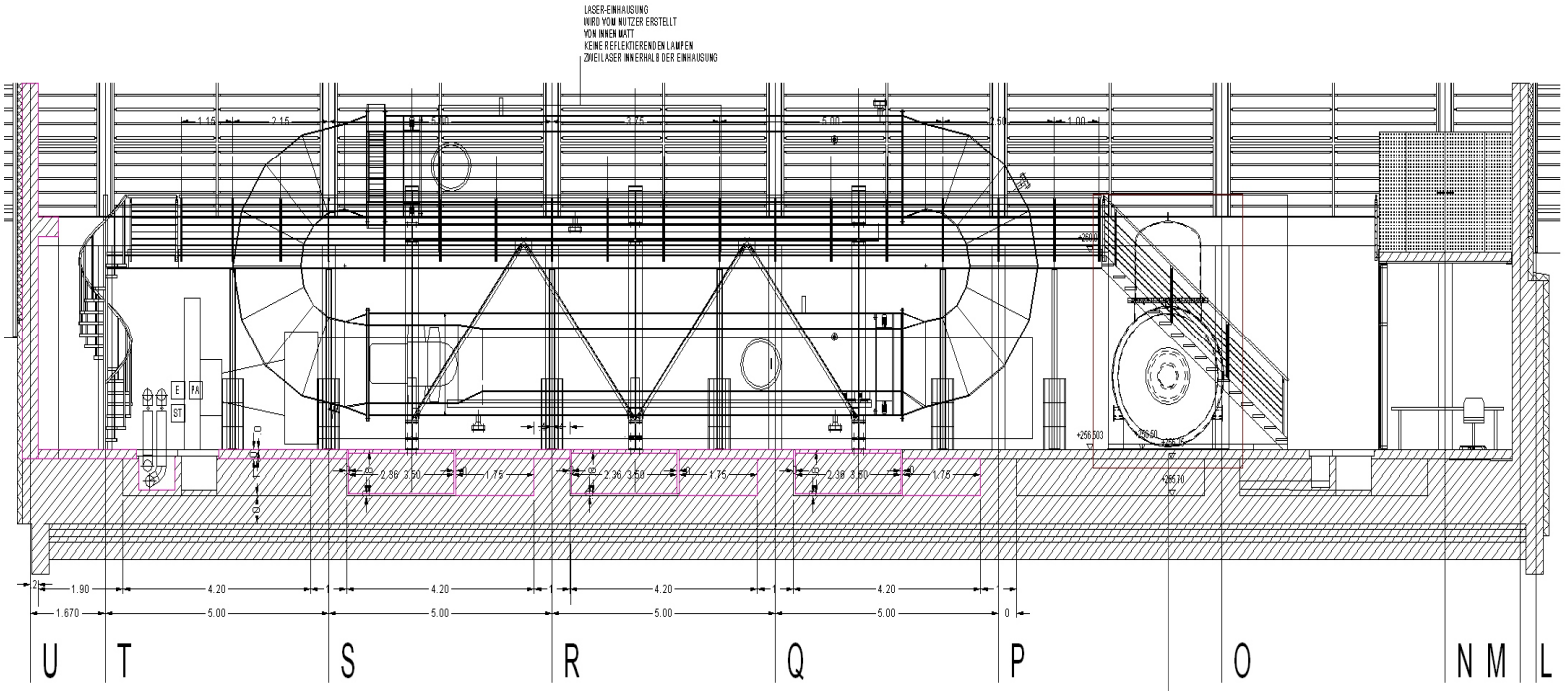
Werkstoff: Behälter: P265GH; Dichtungen: EPDM

Druckbehälter

Oberfläche: Sandgestrahlt SA 2.5 grundiert,

Decklack: RAL

Facility in Goettingen: Re = $7x10^6$, Ra = 10^{15}



In 1963 Richard Feynman wrote:

"Finally, there is a physical problem that is common to many fields, that is very old, and that has not been solved. It is not the problem of finding new fundamental particles, but something left over from a long time ago – over a hundred years. Nobody in physics has really been able to analyze it mathematically satisfactorily in spite of its importance to the sister sciences.
It is the analysis of circulating or turbulent fluids."

Communities

- Boundary Layers - shear flows
- Homog. Isotropic Turb.
- Rayleigh-Benard
- Rayleigh-Taylor
- Multiphase Flows
- Complex Fluids
- Chemistry
- Particles
- Plasmas …

Questions

- What?
- Why?
- Where?
- How?