

||||| Precise measuring instruments  
for viscosity and surface science

Product range 2022 / 2023

Version 2022-06-01

# Measuring stand S5

Precise data. Constant values.

## Measuring stand S5



The S5 is the measuring part of the PVS system. Its head is comprised of the opto-electronic meniscus detectors as well as the entire control of the measuring process including miniature pump and valves. The accuracy and resolution of the light sensor measurement system is among the best of its class. The robust micro-pump for pushing the sample up into the measuring ball as well as the chemical-resistant valves in the head of the stand allows reliable and continuous operation.

### Special Features:

- || Completely micro-processor controlled for a highly precise time measurement
- || Adaptive infrared (NIR) detection
- || Short tubing to the viscometer
- || Electrical connections only
- || For (Micro-) Ubbelohde, Cannon-Fenske-Routine and Micro-Ostwald capillaries

### Scope of supply:

- || Measuring stand S5
- || Connection cable
- || Set of viton connection caps
- || Tubing

### Not included:

- || Control unit PVS Box
- || Measuring software
- || Viscometer capillaries

Technical features	S5 stand (LMVZ948)
Sample temperature range	-65...160 °C
Time measurement range	0...9,999.99 s
Recommended measurement range of flow time	30...1,000 s
Viscosity range	0.3...50,000 mm <sup>2</sup> /s
Resolution of time measurement	0.01 s
Meniscus detection	Optical (infrared)
Light sensor control	Digital (μP)
Dimensions (W x D x H)	90 x 90 x 500 mm
Weight, net	4.5 kg

## Accessories for S5 stand

### UG 003 Viscometer frame

For better handling of Ubbelohde/Micro-Ubbelohde capillaries

### UG 094 Viscometer frame

For better handling of Micro-Ostwald capillaries

### EZ 054 Viscometer holder

For 2-legged glass capillaries

### HKB 532 Adapter

For use with Micro-Ubbelohde capillaries



**HKB 532**

## Control unit PVS Box



The PVS control unit is the core of the system as well as the switching station between the PC and individual components. It can be equipped with up to four plugin-in boards depending on the configuration (up to 8 S5 stands, up to 4 VRM modules, up to 4 MT dosing systems and 4 motor locks on the VAS auto-sampler systems).

### LMV 812 Control unit PVS 1/2

For 2 measuring stands

### LMV 813 Control unit PVS 1/4

For 4 measuring stands

### LMV 814 Control unit PVS 1/6

For 6 measuring stands

### LMV 815 Control unit PVS 1/8

For 8 measuring stands

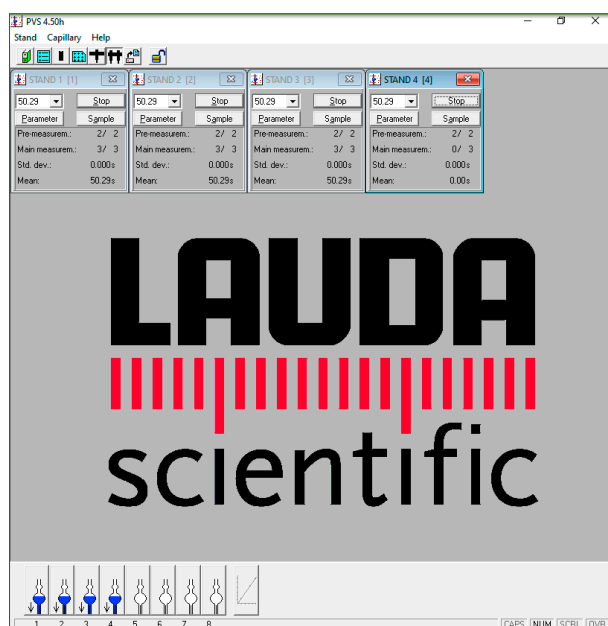
### Scope of supply:

- || Control unit PVS Box
- || Measuring software
- || RS 232 connection cable
- || Power cable (Schuko/EU)

### Note:

Each control unit can be upgraded up to max. 8 measuring stands. This number can be reduced by using additional options (e.g. dilution systems, Autosampler etc.).

Technical features	Control unit PVS Box
Interface to the PC	RS 232 C
Dimensions (WxDxH)	340x270x105 mm
Weight, net	4.6 kg
Ambient temperature	10...45°C
Total power consumption	100 W
Compatible Windows versions	7, 8, 8.1, 10, 11

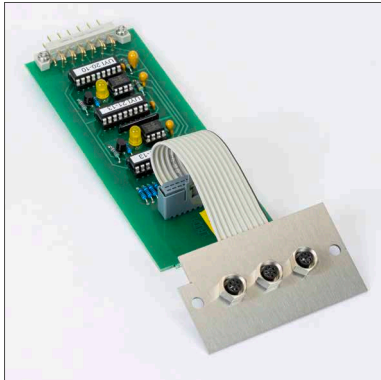


## Software based on Windows

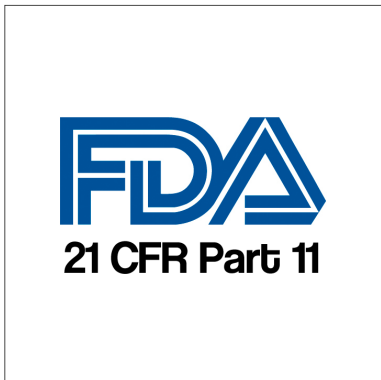
All PVS system configurations are controlled by a standard PC through an interface. In addition, the high-performance and user-friendly standard version of the software calculates the intrinsic, kinematic, dynamic, relative, reduced and inherent viscosity and the K-value from the measured running times. Further key material properties can be determined using additional software modules.

The measuring results and evaluations can be printed out and saved in a file in ASCII format. The measurements report logs all measuring data on a day in chronological order and saves them in a file marked with the day's date. This data can be viewed at all times which means that consistent documentation is guaranteed. Further processing in other programs like MS Excel and in other networks is possible.

## Accessories for control unit PVS Box



LMVZ930



SDE 998-7



LRZ 913

### LMVZ930 2-place plug-in unit ME 2

For additional 2 measuring stands and one additional VRM module

### Viscosity software support services

#### SDE 998-2 PVS software upgrade to Windows 10/11

Upgrade from a former Microsoft Windows version (Windows 7, 8, 8.1) to the latest version, upgrade from older version on request

#### SDE 998-3 PVS data transfer

Individualized installation file for Microsoft Windows 10/11, incl. methods and data from an already existing system (backup)

#### SDE 998-4 PVS-LIMS implementation standard

**Standard** development service for connecting the PVS software to existing database systems via ASCII data storage

#### SDE 998-5 PVS-LIMS implementation individual

**Individual** development service for connecting the PVS software to existing database systems e.g. SAP, Oracle, MS-SQL, MS-Access etc.

#### SDE 998-7 PVS support module "21 CFR part 11"

This module of our PVS software supports you in implementing the requirements of 21 CFR Part 11 for your LAUDA viscosity measurement system. Main criteria are the availability of a password-controlled 4-level user registration and the cryptic data storage. The module includes as well the IQ/OQ documentation.

### Application software

#### LDVM2017 PVS software module ENZ-DLL

For determination of enzyme activity

#### LDVM2023 PVS software module TEMP-DLL

For software control of LAUDA thermostats, incl. USB- and RS 232 connection cable, requires an LAUDA thermostat with RS 232/585 interface (LRZ 913)

#### LRZ 913 RS 232/485 Interface for PV(L) visco thermostats

Plug-in module upgrading a LAUDA PV(L) visco thermostat with a RS 232/485 interface



## General accessories for viscosity



EG 094 | ED 062 | EG 066

### Sample preparation

#### 30 ml flasks

**EG 066** Sample bottle 30 ml  
With 24 mm thread, for PG 30

**EZV 104** Connection screw cap with hole  
White, for sample bottle (EG 066)

**EDF 124** Sealing rings  
For connection screw cap (EZV 104), 50 units

**EDF 092** Small aluminum plates  
For sample bottle (EG 066), 1,000 units



EDF 093

#### 50 ml flasks

**EG 062** Sample bottle GL 32, 50 ml  
For PG 50

**EZV 100** Connection screw cap with hole  
Red, GL 32, for sample bottle (EG 062)

**EZV 141** Screw cap GL 32  
PTFE coated, red, for sample bottle (EG 062)

**EDF 122** Sealing rings  
For connection screw cap (EZV 100), 50 units

**EDF 093** Small aluminum plates  
For sample bottle (EG 062), 1,000 units



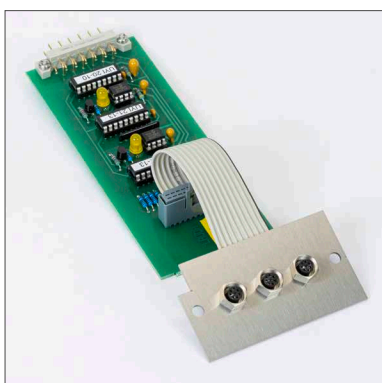
EBK 013

#### 100 ml flasks

**EG 094** Sample bottle GL 45, 30 ml  
For PG 100

**EZ 165** Connection screw cap with hole  
Red, GL 45, for sample bottle (EG 094)

**EDF 097** Small aluminum plates  
For sample bottle (EG 094), 1,000 units



LMVZ930

**EBK 010** Multi-place magnetic stirrer RT 35  
Not heated, 35 positions, for 50 ml sample bottle (EG 062)

**EBK 013** Magnetic stirrer block MRH 15  
Heated, 15 positions, for 50 ml sample bottle (EG 062)

**EZ 195** PTFE stirrer  
Small, 5x 25 mm

### Upgrade PVS box

**LMVZ930** 2-place plug-in unit ME 2  
For additional 2 measuring stands and one additional VRM module

## General accessories for viscosity

### Particle separation

**LMVZ958** Insert filter for EG 062 (50 ml)

Incl. 100 units filter plates (EZ 209)

**LMVZ988** Insert filter for EG 094 (100 ml)

Incl. adapter (HKF 048) and 100 units filter plates (EZ 209)

**HKF 048** Adapter for insert filter (LMVZ988)

For 100ml flasks

**EZ 209** Filter plates

Mw. 0.077 for insert filter (LMVZ958), 100 units

**EZ 209-2** Filter plates

Mw. 0.01 for insert filter (LMVZ958), 100 units



LMVZ958

### Dosing and sample handling

**EG 060** Glass funnel

For easy and clean handling of samples

**UD 410** Filter inserts for glass funnel (EG 060)

Stainless steel, 20 units, 0.03 mm

**HX 615** Funnel for granules

PVDF

**EGP 012** Disposable syringe

20 ml, 100 units, PE / PP

**EGZ 015** Steel needles for disposable syringe (EGP 012)

Stainless steel, 100 units

**EGZ 019** Glass syringe

For applying polymer samples



EGP 012 | EGZ 015

### Waste and reservoir bottles

**LMRZ931** Set of flasks and tubings 15

5x flasks DURAN (1x 2 liter, 4x 1 liter), 3x stopper with tubings

**LMRZ930** Set of flasks and tubings 24

6x flasks DURAN (1x 5 liter, 2x 2 liter, 3x 1 liter), 3x stopper with tubings

**LMRZ907** Stopper with tubings



LMRZ931



LMRZ907

Technical modifications, errors  
and omissions excepted.



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