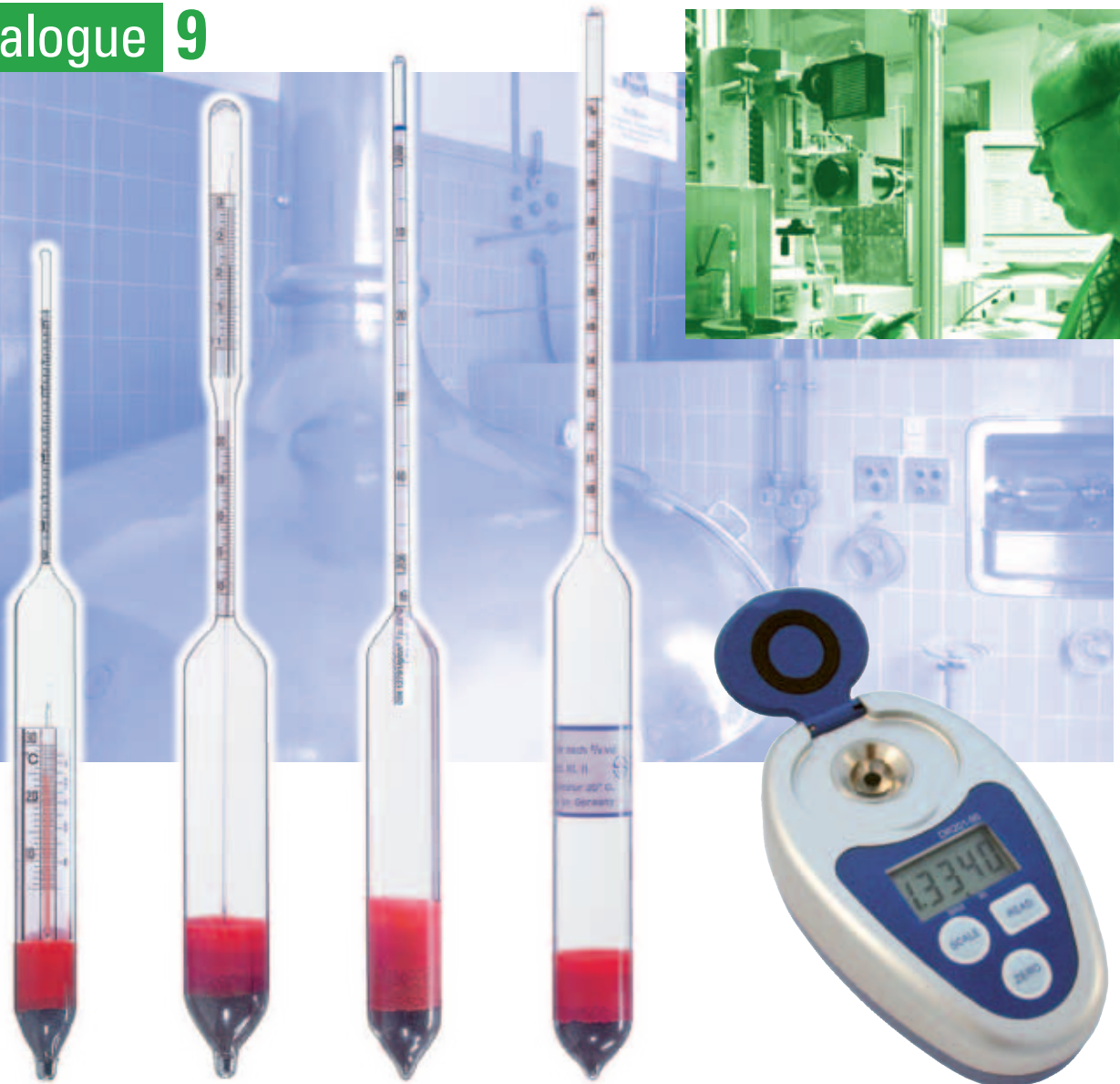


# Precision Hydrometers and Refractometers

## High-precision instruments for density and content

Hydrometers acc. to DIN/ISO/BS/ASTM, special hydrometers,  
digital refractometers, hand-held refractometers

## Catalogue 9



**Ludwig Schneider** 

*High-precision measuring instruments for  
temperature and density*

# DKD calibration laboratory for temperature and density

Ludwig Schneider is one of the world's leading manufacturers of precision measuring instruments for temperature and density. Based on these experiences its subsidiary company Ludwig Schneider Messtechnik GmbH (LSM) offers calibration services for temperature measurements for more than 15 years.

Since late in 2005 it is the first private-sector company in Germany with DKD accreditation for density measurements of hydrometers.

International customers of the chemical, pharmaceutical, mineral oil/refinery and food processing industries as well as oceanography are using the LSM calibration services.

## PTB accreditation

Ludwig Schneider Messtechnik is accredited by "Akkreditierungsstelle des DKD bei der Physikalisch-Technischen Bundesanstalt (PTB)" under Registration No. DKD-K-06701 for density measurements within the range of 450 kg/m<sup>3</sup> up to 2,000 kg/m<sup>3</sup>.

## Innovative calibration technology

LSM is calibrating according to the buoyancy system (Cuckow method of measurement). Developed by experienced engineers this most precise calibration unit, fitted with innovative sensor technology, reliably determines all required parameters.

## Services

- DKD calibration certificates
- factory test certificates

## PTB-accredited measuring tolerances

### Hydrometers

Density: 450 up to 2,000 kg/m<sup>3</sup>

### Alcoholmeters

Content: 0 up to 100%

### Saccharometers

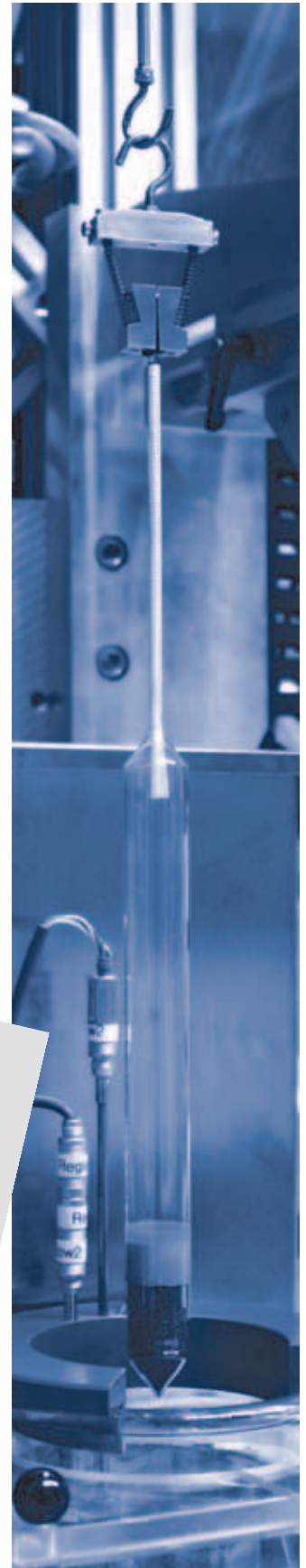
Content: 0 up to 70%



Anlage 04 zur Akkreditierungsurkunde des Kalibrierlaboratoriums

DKD-K-06701  
Seite 2 von 2

Messgröße / Kalibriergegenstand	Messbereich / Messspanne	Messbedingungen / Verfahren	kleinste angebbare Messunsicherheit <sup>1)</sup>	Bemerkungen
Temperatur-Blockkalibratoren	-30 °C bis 133 °C > 133 °C bis 660 °C		0,20 K 1,5 mK / 1 °C	Vergleich mit Normal-Widerstandsthermometern; t = Messwert in °C
Dichte Aräometer und abgeleitete Instrumente	0 °C bis 660 °C > 660 °C bis 1000 °C > 1000 °C bis 1300 °C		1,5 K 2,5 K 4,5 K	Vergleich mit Normal-Thermoelementen
Gehalt Alkoholometer	450 kg/m <sup>3</sup> bis 2000 kg/m <sup>3</sup>	Auftriebswägung	0,04 kg/m <sup>3</sup>	
Gehalt Saccharimeter	0 % bis 100 %	Auftriebswägung	0,016 %	keine relative Messunsicherheit
	0 % bis 70 %	Auftriebswägung	0,012 %	



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# Digital precision refractometers

## DR 6000/DR 6100-T

Digital, high-precise refractometers for measuring content and density. The measuring ranges of the instrument cover a wide application spectrum in food, chemical and further industries. Refractometers are frequently used in production and quality control for analysing mixing ratios.

The instruments have an easy-to-clean prism and need only small sample quantities for precise measurements. A funnel cell for larger probe quantities is available on request.

### Technical data and specifications

Type	DR 6000	DR 6100-T
Measuring range	1.33-1.58 nD; 0.00-95.00% Brix	1.33-1.70 nD; 0.00-95.00% Brix
Accuracy/resolution	0.0001 nD; 0,1% Brix	
Measuring modes	Single, Interval, Singletemp., Continuous	
Preset standard scales	Refractive index (nD), %-Brix, Saccharose, Inverted sugar, Glucose, Fructose, temperature corrected (nD), temperature corrected (%-Brix)	
Calibration	1-, 2-, 3-point calibration possible	
Measuring time	approx. 4 sec.	
Prism	Sapphire	
Illumination	LED 590 nm (estimated life time >100.000 hours)	
Electrical connection	100...250 V, 50/60 Hz, 60 W	
Display	LCD 5.7", 320 x 240 pixel, monochrome	
Protection class	IP 65 (for analysis basin)	
Temperature measuring range	0-100 °C	
Temperature resolution	0.1 °C	
Temperature accuracy	0.2 °C	
Temperature compensation	ICUMSA user defined 3-point	
Probe temperature	0-80 °C	
Ambient temperature	0-40 °C	
<b>Integrated Peltier thermostat</b>	<b>no</b>	<b>yes</b>
Temperature control range	–	10-40 °C (optional 10-80 °C)
Temperature accuracy	–	0.1 °C
Temperature stability	–	005 °C
Ref.-No.	3401101	3401110



### Quality features

- Wide measuring range and high resolution
- User-friendly touch screen panel
- Various measuring units programmable
- User-defined scales can be initialized
- High-class ceramic sensor (Pt 1000)
- Casing and analysis basin made of stainless steel
- User-friendly USB and RS 232 interfaces for direct connection to printer or PC
- Password protection for all important settings and measurements
- Full GLP capability
- Calibration certificate acc. to N.I.S.T.
- Meets ASTM D1218 standard

# Mobile digital precision refractometer DR 301-95

Digital, high-precise refractometer for measuring content and density. Flexible and mobile on-site device due to battery operation (mains adapter optional).

The device is equipped with a serial interface, programmable scales and analysis software.

For the integrated tolerance alarm function an upper and a lower limit can be defined.

## Quality features

- Wide measuring range and high resolution
- User-defined scales can be initialized
- Display with battery charge status
- Analysis basin made of stainless steel
- Serial interface RS 232
- Mains adapter optional
- Analysis software included
- Tolerance alarm function
- Automatic switch-off function after 3 minutes

## Technical data and specifications

Type	DR 301-95	
Display	LCD	
Measuring range	1.3330-1.5318 nD; 0.00-95.00% Brix; 0-30% Salt	
Accuracy/resolution	0.0001 nD; 0.1% Brix; 0.1% Salinity	
Preset standard scales	Refractive index (nD), %-Brix	
Scale division	0.0001 nD; 0.1% Brix; 0.1% Salinity	
Dimensions	L 180 x W 100 x H 60 mm	
Power supply	9 V block battery, mains adapter available as an option	
Automatic switch-off	3 minutes after last input	
Interface	RS 232	
Weight	500 g	
<b>Temperature units</b>	<b>°C</b>	<b>°F</b>
Temperature compensation	5-40	41-104
Temperature measuring range	0-40	32-104
Temperature accuracy	± 1	± 2
Temperature resolution	0.1	0.1
Ref.-No.	3401102	



# Digital hand-held refractometer

## DR 201-95

Compact, digital hand-held refractometer for measuring of content and density in food, beverage, pharmaceutical and chemical industries.

The user-friendly device enables easy and precise measurements covering a wide measuring range (0-95% Brix). The user can select between different scales.

The device will be calibrated simply with water and has an integrated automatic temperature compensation to ensure that concentration readings of liquid solutions will be accurate as regards to the sample temperature.

### Quality features

- Wide measuring range and high resolution
- Ergonomical, compact shape
- 2 scales selectable (nD and Brix)
- Automatical temperature compensation
- Automatical switch-off
- Easy calibration

### Technical data and specifications

Type	DR 201-95	
Display	LCD	
Standard scales	Refractive index (nD), %-Brix	
Dimensions	L 130 x W 80 x H 40 mm	
Power supply	1.5 V Battery (for more than 8.000 measurements)	
Automatic switch-off	30 seconds after last input	
Temperature compensation	integrated	
Weight	100 g	
<b>Measuring units</b>	<b>nD</b>	<b>% Brix</b>
Measuring range	1.3330-1.5318	0-95
Accuracy	± 0.0003	± 0.2
Temperature resolution	0.0001	0.1
Ref.-No.	3401103	



# Hand-held refractometers

Compact and precise hand-held refractometers for quick measuring of solid contents in liquids (e.g. sugar, salt etc.).

The optical measuring principle is based on the refractive index (nD). A few drops of the sample has to be placed on the refractometer prism and the index of refraction is measured in seconds.

The devices are well used in quality control of food, beverage and chemical industries.

The hand-held refractometers fit in every pocket and they are delivered in a compact storage case with conversion tables.

## Technical data and specifications

Type	Measuring range	Scale	Ref.-No.
Determination of sugar concentration in fruit juices, vegetables, food etc; analysis of cooling lubricants			
HRN 18/1	0-18% Brix	0.1% Brix	3401104
HRN 18/2	0-18% Brix	0.2% Brix	3401105
HRN 32	0-32% Brix	0.2% Brix	3401081
Analysis of alcohol concentration in cider (Oechsle)			
HR0 32	0-32% Brix, 30-130 °Oe, 4.4-18.5% alcohol	0.2% Brix, 1.0° Oe, 0,1% alcohol	3401091
Analysis of chemical and technical liquids e.g. oils, fats, coolants, lubricants etc.			
HRN 62	28-62% Brix	0.2% Brix	3401082
Analysis of highly concentrated sugar solutions, water content in honey, oils, fats, lubricants, cooking oil etc.			
HRN 82	45-82% Brix	0.5% Brix	3401106
HR 92	58-92% Brix, 38-45° Baumé, 12-27% Water	0.5% Brix, 0.5° Baumé, 1% Water	3401083
Analysis of serum protein and specific urine weight			
HRM 18	0-12 g/dl, 1.333-1.360 nD, 1.000-1.050 UW	0.2 g/dl, 0.0005 nD, 0,02 UW	3401107
Salinity analysis			
HR 27/100	0-10% Salt	0.1% Salt	3401108
HRS 16	0-16% Brix, 1.333-1.373 nD Salt	0.2% Salt	3401109



# Precision density hydrometers



## Product information

- All hydrometers shown in this catalogue are available with DKD calibration certificate or factory test certificate
- Most hydrometer types are available with integrated thermometer, too
- Hydrometer sets are available with case on request
- Ludwig Schneider is specialized in manufacturing tailor-made hydrometers according to customer's individual specifications
- All Instruments will be single-packed in transparent square-end tubes
- Technical details are subject to change without notice

# Precision density hydrometers

## L 20 series

**Grey colour code = suitable for official testing**

Additional order no.:

- ...../01 officially calibrated without certificate
- ...../02 officially calibrated with certificate
- ...../03 with works certificate
- ...../04 with DKD calibration certificate

Precision density hydrometers

**L 20 series acc. to DIN 12791**

Ref. temperature (Tp.): 20 °C

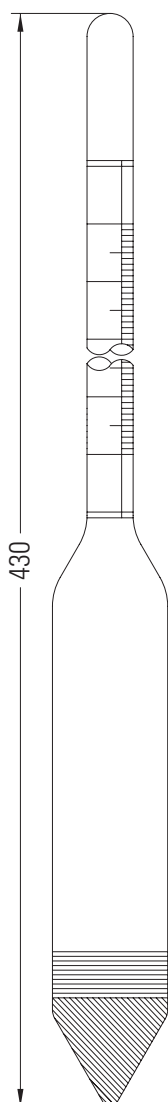
**Measuring span: 0.020 g/cm<sup>3</sup>**

**Scale units: 0.0002 g/cm<sup>3</sup>**

Total length (L): 430 mm

Also available with thermometer

(0 to +25 °C in 0.2 °C)



Type	Range	Ref.-
L 20	g/cm <sup>3</sup>	No.
L 20-060	0.600-0.620	3112001
L 20-062	0.620-0.640	3112002
L 20-064	0.640-0.660	3112003
L 20-066	0.660-0.680	3112004
L 20-068	0.680-0.700	3112005
L 20-070	0.700-0.720	3112006
L 20-072	0.720-0.740	3112007
L 20-074	0.740-0.760	3112008
L 20-076	0.760-0.780	3112009
L 20-078	0.780-0.800	3112010
L 20-080	0.800-0.820	3112011
L 20-082	0.820-0.840	3112012
L 20-084	0.840-0.860	3112013
L 20-086	0.860-0.880	3112014
L 20-088	0.880-0.900	3112015
L 20-090	0.900-0.920	3112016
L 20-092	0.920-0.940	3112017
L 20-094	0.940-0.960	3112018
L 20-096	0.960-0.980	3112019
L 20-098	0.980-1.000	3112020
L 20-100	1.000-1.020	3112021
L 20-102	1.020-1.040	3112022
L 20-104	1.040-1.060	3112023
L 20-106	1.060-1.080	3112024
L 20-108	1.080-1.100	3112025
L 20-110	1.100-1.120	3112026
L 20-112	1.120-1.140	3112027
L 20-114	1.140-1.160	3112028
L 20-116	1.160-1.180	3112029
L 20-118	1.180-1.200	3112030
L 20-120	1.200-1.220	3112031
L 20-122	1.220-1.240	3112032
L 20-124	1.240-1.260	3112033
L 20-126	1.260-1.280	3112034
L 20-128	1.280-1.300	3112035
L 20-130	1.300-1.320	3112036
L 20-132	1.320-1.340	3112037

Type	Range	Ref.-
L 20	g/cm <sup>3</sup>	No.
L 20-134	1.340-1.360	3112038
L 20-136	1.360-1.380	3112039
L 20-138	1.380-1.400	3112040
L 20-140	1.400-1.420	3112041
L 20-142	1.420-1.440	3112042
L 20-144	1.440-1.460	3112043
L 20-146	1.460-1.480	3112044
L 20-148	1.480-1.500	3112045
L 20-150	1.500-1.520	3112046
L 20-152	1.520-1.540	3112047
L 20-154	1.540-1.560	3112048
L 20-156	1.560-1.580	3112049
L 20-158	1.580-1.600	3112050
L 20-160	1.600-1.620	3112051
L 20-162	1.620-1.640	3112052
L 20-164	1.640-1.660	3112053
L 20-166	1.660-1.680	3112054
L 20-168	1.680-1.700	3112055
L 20-170	1.700-1.720	3112056
L 20-172	1.720-1.740	3112057
L 20-174	1.740-1.760	3112058
L 20-176	1.760-1.780	3112059
L 20-178	1.780-1.800	3112060
L 20-180	1.800-1.820	3112061
L 20-182	1.820-1.840	3112062
L 20-184	1.840-1.860	3112063
L 20-186	1.860-1.880	3112064
L 20-188	1.880-1.900	3112065
L 20-190	1.900-1.920	3112066
L 20-192	1.920-1.940	3112067
L 20-194	1.940-1.960	3112068
L 20-196	1.960-1.980	3112069
L 20-198	1.980-2.000	3112070

# Precision density hydrometers

## L 50 series

## M 50 series

### Grey colour code = suitable for official testing

Additional order no.:

- ...../01 officially calibrated without certificate
- ...../02 officially calibrated with certificate
- ...../03 with works certificate
- ...../04 with DKD calibration certificate

Precision density hydrometers

### L 50 series acc. to DIN 12791

Ref. temperature (Tp.): 20 °C

**Measuring span: 0.050 g/cm<sup>3</sup>**

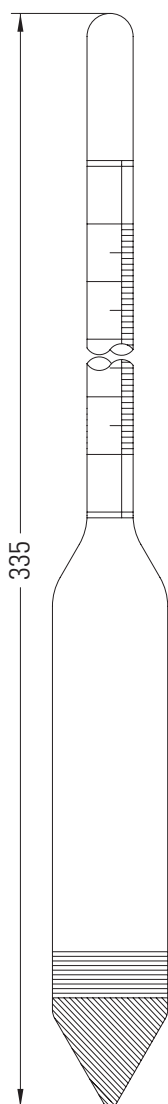
**Scale units: 0.0005 g/cm<sup>3</sup>**

Total length (L): 335 mm

Also available with thermometer

(0 to +30 °C in 0.5 °C, total length 370 mm)

Type	Range	Ref.-
L 50	g/cm <sup>3</sup>	No.
L 50-060	0.600-0.650	3132001
L 50-065	0.650-0.700	3132002
L 50-070	0.700-0.750	3132003
L 50-075	0.750-0.800	3132004
L 50-080	0.800-0.850	3132005
L 50-085	0.850-0.900	3132006
L 50-090	0.900-0.950	3132007
L 50-095	0.950-1.000	3132008
L 50-100	1.000-1.050	3132009
L 50-105	1.050-1.100	3132010
L 50-110	1.100-1.150	3132011
L 50-115	1.150-1.200	3132012
L 50-120	1.200-1.250	3132013
L 50-125	1.250-1.300	3132014
L 50-130	1.300-1.350	3132015
L 50-135	1.350-1.400	3132016
L 50-140	1.400-1.450	3132017
L 50-145	1.450-1.500	3132018
L 50-150	1.500-1.550	3132019
L 50-155	1.550-1.600	3132020
L 50-160	1.600-1.650	3132021
L 50-165	1.650-1.700	3132022
L 50-170	1.700-1.750	3132023
L 50-175	1.750-1.800	3132024
L 50-180	1.800-1.850	3132025
L 50-185	1.850-1.900	3132026
L 50-190	1.900-1.950	3132027
L 50-195	1.950-2.000	3132028
Complete set in 2 cases		3132041
Case for 14 types		477050



Precision density hydrometers

### M 50 series acc. to DIN 12791

Ref. temperature (Tp.): 20 °C

**Measuring span: 0.050 g/cm<sup>3</sup>**

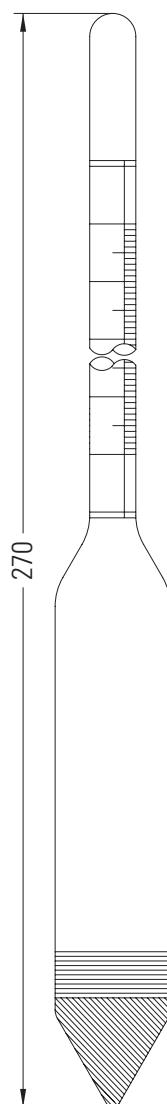
**Scale units: 0.001 g/cm<sup>3</sup>**

Total length (L): 270 mm

Also available with thermometer

(0 to +30 °C in 1.0 °C, Total length 310 mm)

Type	Range	Ref.-
M 50	g/cm <sup>3</sup>	No.
M 50-060	0.600-0.650	3172001
M 50-065	0.650-0.700	3172002
M 50-070	0.700-0.750	3172003
M 50-075	0.750-0.800	3172004
M 50-080	0.800-0.850	3172005
M 50-085	0.850-0.900	3172006
M 50-090	0.900-0.950	3172007
M 50-095	0.950-1.000	3172008
M 50-100	1.000-1.050	3172009
M 50-105	1.050-1.100	3172010
M 50-110	1.100-1.150	3172011
M 50-115	1.150-1.200	3172012
M 50-120	1.200-1.250	3172013
M 50-125	1.250-1.300	3172014
M 50-130	1.300-1.350	3172015
M 50-135	1.350-1.400	3172016
M 50-140	1.400-1.450	3172017
M 50-145	1.450-1.500	3172018
M 50-150	1.500-1.550	3172019
M 50-155	1.550-1.600	3172020
M 50-160	1.600-1.650	3172021
M 50-165	1.650-1.700	3172022
M 50-170	1.700-1.750	3172023
M 50-175	1.750-1.800	3172024
M 50-180	1.800-1.850	3172025
M 50-185	1.850-1.900	3172026
M 50-190	1.900-1.950	3172027
M 50-195	1.950-2.000	3172028
Complete set in 2 cases		3172041
Case for 14 types		477051



# Precision density hydrometers

## S 50 series

## M 100 series

**Grey colour code = suitable for official testing**

Additional order no.:

- ...../01 officially calibrated without certificate
- ...../02 officially calibrated with certificate
- ...../03 with works certificate
- ...../04 with DKD calibration certificate

Precision density hydrometers

**S 50 series acc. to DIN 12791**

Ref. temperature (Tp.): 20 °C

**Measuring span: 0.050 g/cm<sup>3</sup>**

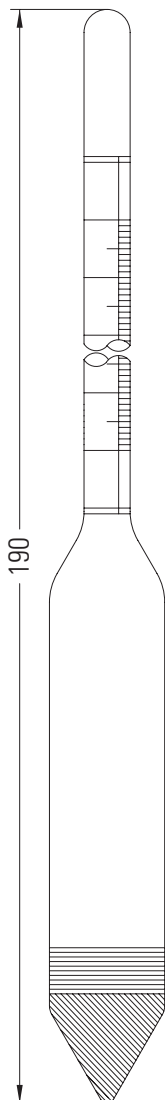
**Scale units: 0.001 g/cm<sup>3</sup>**

Total length (L): 190 mm

Also available with thermometer

(0 to +30 °C in 1.0 °C, total length 240 mm)

Type	Range g/cm <sup>3</sup>	Ref.-No.
S 50-060	0.600-0.650	3152001
S 50-065	0.650-0.700	3152002
S 50-070	0.700-0.750	3152003
S 50-075	0.750-0.800	3152004
S 50-080	0.800-0.850	3152005
S 50-085	0.850-0.900	3152006
S 50-090	0.900-0.950	3152007
S 50-095	0.950-1.000	3152008
S 50-100	1.000-1.050	3152009
S 50-105	1.050-1.100	3152010
S 50-110	1.100-1.150	3152011
S 50-115	1.150-1.200	3152012
S 50-120	1.200-1.250	3152013
S 50-125	1.250-1.300	3152014
S 50-130	1.300-1.350	3152015
S 50-135	1.350-1.400	3152016
S 50-140	1.400-1.450	3152017
S 50-145	1.450-1.500	3152018
S 50-150	1.500-1.550	3152019
S 50-155	1.550-1.600	3152020
S 50-160	1.600-1.650	3152021
S 50-165	1.650-1.700	3152022
S 50-170	1.700-1.750	3152023
S 50-175	1.750-1.800	3152024
S 50-180	1.800-1.850	3152025
S 50-185	1.850-1.900	3152026
S 50-190	1.900-1.950	3152027
S 50-195	1.950-2.000	3152028
Complete set in 2 cases		3152041
Case for 14 types		201341



Precision density hydrometers

**M 100 series acc. to DIN 12791**

Ref. temperature (Tp.): 20 °C

**Measuring span: 0.100 g/cm<sup>3</sup>**

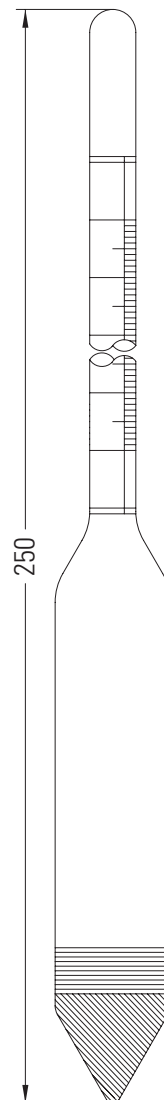
**Scale units: 0.002 g/cm<sup>3</sup>**

Total length (L): 250 mm

Also available with thermometer

(0 to +30 °C in 1.0 °C, total length 290 mm)

Type	Range g/cm <sup>3</sup>	Ref.-No.
M 100-060	0.600-0.700	3192001
M 100-070	0.700-0.800	3192002
M 100-080	0.800-0.900	3192003
M 100-090	0.900-1.000	3192004
M 100-100	1.000-1.100	3192005
M 100-110	1.100-1.200	3192006
M 100-120	1.200-1.300	3192007
M 100-130	1.300-1.400	3192008
M 100-140	1.400-1.500	3192009
M 100-150	1.500-1.600	3192010
M 100-160	1.600-1.700	3192011
M 100-170	1.700-1.800	3192012
M 100-180	1.800-1.900	3192013
M 100-190	1.900-2.000	3192014
Complete set with case		3192031
Range finder 0.700-2.000		3071095
Set with range finder + case		3192032
Case for 15 types		201321



# Precision density hydrometers acc. to DIN 12791 (old), acc. to DIN 12792

## Grey colour code = suitable for official testing

Additional order no.:

- ...../01 officially calibrated  
without certificate
- ...../02 officially calibrated  
with certificate
- ...../03 with works certificate
- ...../04 with DKD  
calibration certificate

Precision density hydrometers

**acc. to DIN 12791 (old)**

Ref. temperature (Tp.): 20 °C

**Measuring span: see table**

**Scale units: 0.001 g/cm<sup>3</sup>**

Total length (L): 240 mm

Type	Range g/cm <sup>3</sup>	Ref.- No.
1	0.630-0.715	3092001
2	0.715-0.790	3092002
3	0.790-0.860	3092003
4	0.860-0.930	3092004
5	0.930-1.000	3092005
6	1.000-1.110	3092006
7	1.090-1.210	3092007
8	1.190-1.310	3092008
9	1.290-1.410	3092009
10	1.390-1.510	3092010
11	1.490-1.610	3092011
12	1.600-1.720	3092012
13	1.720-1.840	3092013
14	1.840-2.000	3092014

Precision density hydrometers

**acc. to DIN 12792**

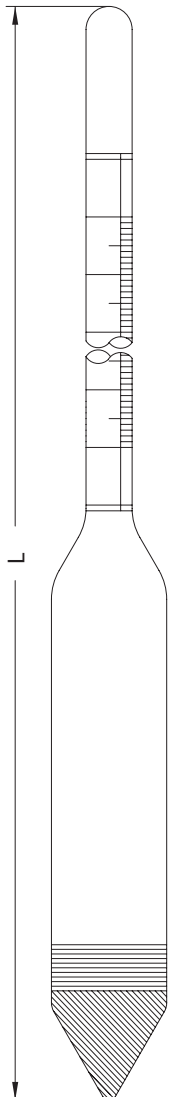
Ref. temperature (Tp.): 20 °C

**Measuring span: see table**

**Scale units: 0.002 g/cm<sup>3</sup>**

Total length (L): 325 mm

Type	Range g/cm <sup>3</sup>	Ref.- No.
1	0.610-0.716	3102001
2	0.716-0.790	3102002
3	0.790-0.910	3102003
4	0.890-1.000	3102004
5	1.000-1.210	3102005
6	1.190-1.410	3102006
7	1.390-1.610	3102007
8	1.610-1.842	3102008
9	1.842-2.000	3102009



## Range finders

General range finders

Ref. temperature (Tp.): 20 °C

**Measuring span: see table**

**Scale units: 0.005 g/cm<sup>3</sup>**

Total length (L): 240 mm

Type	Range g/cm <sup>3</sup>	Ref.- No.
A	0.600-0.850	3091001
B	0.850-1.100	3091002
C	1.100-1.500	3091003
D	1.500-2.000	3091004

General range finders

Ref. temperature (Tp.): 20 °C

**Measuring span: 1.300 g/cm<sup>3</sup>**

Scale units and total length (L):  
see table

Range g/cm <sup>3</sup>	Scale g/cm <sup>3</sup>	Length mm	Ref.- No.
0.700-2.000	0.100	160	3071091
0.600-2.000	0.100	260	3021025
0.700-2.000	0.100	300	3071092
0.700-2.000	0.010	360	3071093
0.700-2.000	0.020	360	3071094

# Precision density hydrometers

Precision density hydrometers

Ref. temperature (Tp.): 20 °C

**Measuring span: 0.100 g/cm<sup>3</sup>**

**Scale units: 0.001 g/cm<sup>3</sup>**

Total length (L): 300 mm

Also available with thermometer

(0 to +35 °C in 1.0 °C,

total length 350 mm)

Type	Range g/cm <sup>3</sup>	Ref.- No.
1	0.600-0.700	3031001
2	0.700-0.800	3031002
3	0.800-0.900	3031003
4	0.900-1.000	3031004
5	1.000-1.100	3031005
6	1.100-1.200	3031006
7	1.200-1.300	3031007
8	1.300-1.400	3031008
9	1.400-1.500	3031009
10	1.500-1.600	3031010
11	1.600-1.700	3031011
12	1.700-1.800	3031012
13	1.800-1.900	3031013
14	1.900-2.000	3031014
Complete set with case		3031031
Case for 14 types		203031

Precision density hydrometers

Ref. temperature (Tp.): 20 °C

**Measuring span: 0.060 g/cm<sup>3</sup>**

**Scale units: 0.001 g/cm<sup>3</sup>**

Total length (L): 260 mm

Also available with thermometer

(0 to +35 °C in 1.0 °C,

total length 320 mm)

Type	Range g/cm <sup>3</sup>	Ref.- No.
00	0.600-0.660	3021001
0	0.650-0.710	3021002
1	0.700-0.760	3021003
2	0.760-0.820	3021004
3	0.820-0.880	3021005
4	0.880-0.940	3021006
5	0.940-1.000	3021007
6	1.000-1.060	3021008
7	1.060-1.120	3021009
8	1.120-1.180	3021010
9	1.180-1.240	3021011
10	1.240-1.300	3021012
11	1.300-1.360	3021013
12	1.360-1.420	3021014
13	1.420-1.480	3021015
14	1.480-1.540	3021016
15	1.540-1.600	3021017
16	1.600-1.660	3021018
17	1.660-1.720	3021019
18	1.720-1.780	3021020
19	1.780-1.840	3021021
20	1.840-1.900	3021022
21	1.900-1.960	3021023
22	1.960-2.020	3021024
Complete set with case		3021041
Case for 24 types		201302

Precision density hydrometers

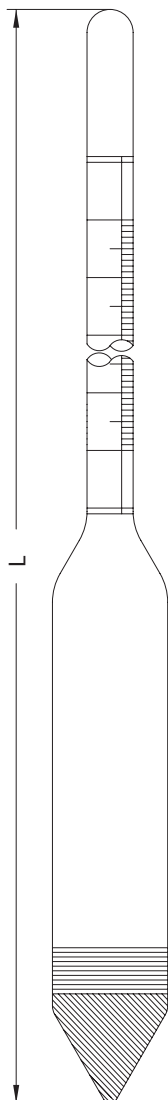
Ref. temperature (Tp.): 20 °C

**Measuring span: 0.060 g/cm<sup>3</sup>**

**Scale units: 0.001 g/cm<sup>3</sup>**

Total length (L): 160 mm

Type	Range g/cm <sup>3</sup>	Ref.- No.
00	0.600-0.660	3011001
0	0.650-0.710	3011002
1	0.700-0.760	3011003
2	0.760-0.820	3011004
3	0.820-0.880	3011005
4	0.880-0.940	3011006
5	0.940-1.000	3011007
6	1.000-1.060	3011008
7	1.060-1.120	3011009
8	1.120-1.180	3011010
9	1.180-1.240	3011011
10	1.240-1.300	3011012
11	1.300-1.360	3011013
12	1.360-1.420	3011014
13	1.420-1.480	3011015
14	1.480-1.540	3011016
15	1.540-1.600	3011017
16	1.600-1.660	3011018
17	1.660-1.720	3011019
18	1.720-1.780	3011020
19	1.780-1.840	3011021
20	1.840-1.900	3011022
21	1.900-1.960	3011023
22	1.960-2.020	3011024
Complete set with case		3011041
Case for 24 types		201301



# Precision density hydrometers

Precision density hydrometers

Ref. temperature (Tp.): 20 °C

**Measuring span: 0.200 g/cm<sup>3</sup>**

**Scale units: 0.002 g/cm<sup>3</sup>**

Total length (L): 280 mm

Also available with thermometer

(0 to +35 °C in 1.0 °C,

total length 330 mm)

Type	Range g/cm <sup>3</sup>	Ref.- No.
1	0.600-0.800	3071001
2	0.800-1.000	3071002
3	1.000-1.200	3071003
4	1.200-1.400	3071004
5	1.400-1.600	3071005
6	1.600-1.800	3071006
7	1.800-2.000	3071007
Complete set with case		3071009
Case for 7 types		201091

Precision density hydrometers

Ref. temperature (Tp.): 20 °C

**Measuring span: 0.200 g/cm<sup>3</sup>**

**Scale units: 0.001 g/cm<sup>3</sup>**

Total length (L): 380 mm

Also available with thermometer

(0 to +35 °C in 1.0 °C,

total length 400 mm)

Type	Range g/cm <sup>3</sup>	Ref.- No.
1	0.600-0.800	3071021
2	0.800-1.000	3071022
3	1.000-1.200	3071023
4	1.200-1.400	3071024
5	1.400-1.600	3071025
6	1.600-1.800	3071026
7	1.800-2.000	3071027
Complete set with case		3071029
Case for 7 types		201092

Precision density hydrometers

Ref. temperature (Tp.): 20 °C

**Measuring span: 0.200 g/cm<sup>3</sup>**

**Scale units: 0.002 g/cm<sup>3</sup>**

Total length (L): 300 mm

Also available with thermometer

(0 to +35 °C in 1.0 °C,

total length 350 mm)

Type	Range g/cm <sup>3</sup>	Ref.- No.
1	2.000-2.200	3402701
2	2.200-2.400	3402702
3	2.400-2.600	3402703
4	2.600-2.800	3402704
5	2.800-3.000	3402705
6	3.000-3.200	3402706
7	3.200-3.400	3402707
8	3.400-3.600	3402708
9	3.600-3.800	3402709
10	3.800-4.000	3402710

Precision density hydrometers

Ref. temperature (Tp.): 20 °C

**Measuring span: see table**

**Scale units: 0.005 g/cm<sup>3</sup>**

**\* 0.010 g/cm<sup>3</sup>**

Types 1-7 also available with

thermometer (0 to +35 °C in

1.0 °C, total length 320/350 mm)

Type	Range g/cm <sup>3</sup>	Length mm	Ref.- No.
1	0.700-1.000	300	3071041
2	1.000-1.500	300	3071043
3	1.500-2.000	300	3071044
4	1.000-1.300	270	3071042
5	1.300-1.600	270	3071053
6	1.600-2.000	270	3071054
7*	1.000-2.000	300	3071045
8*	2.000-2.500	300	3071046
9*	2.500-3.000	300	3071047
10*	3.000-3.500	300	3071048
11*	3.500-4.000	300	3071049

Precision density hydrometers

Ref. temperature (Tp.): 20 °C

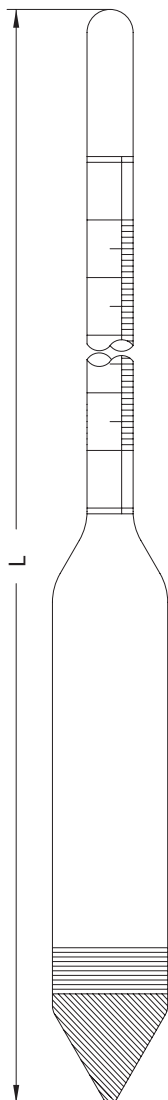
**Measuring span: see table**

**Scale units: 0.005 g/cm<sup>3</sup>**

Total length (L): 180 mm

Type	Range g/cm <sup>3</sup>	Ref.- No.
1	0.600-0.800	3071221
2	0.800-1.000	3071222
3	1.000-1.200	3071223
4	1.200-1.400	3071224
5	1.400-1.600	3071225
6	1.600-1.800	3071226
7	1.800-2.000	3071227
Complete set with case		3071228
Case for 7 types		201142

Type	Range g/cm <sup>3</sup>	Ref.- No.
1	0.700-0.850	3061001
2	0.850-1.000	3061002
3	1.000-1.250	3061003
4	1.250-1.500	3061004
5	1.500-1.750	3061005
6	1.750-2.000	3061006
Complete set with case		3071029
Case for 6 types		201141



# Precision density hydrometers

**Grey colour code = suitable for official testing**

Additional order no.:

- ...../01 officially calibrated  
without certificate
- ...../02 officially calibrated  
with certificate
- ...../03 with works certificate
- ...../04 with DKD  
calibration certificate

Precision density hydrometers

Ref. temperature (Tp.): 20 °C

**Measuring span: 0.010 g/cm<sup>3</sup>**

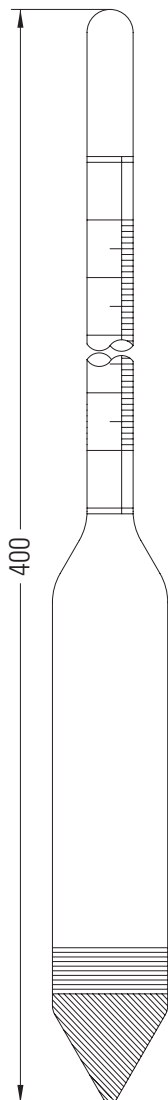
**Scale units: 0.0001 g/cm<sup>3</sup>**

Total length (L): 400 mm

Also available with thermometer

(+5 to +25 °C in 0.2 °C,

total length 400 mm)



Type	Range g/cm <sup>3</sup>	Ref.- No.
1	0.600-0.610	3412001
2	0.610-0.620	3412002
3	0.620-0.630	3412003
4	0.630-0.640	3412004
5	0.640-0.650	3412005
6	0.650-0.660	3412006
7	0.660-0.670	3412007
8	0.670-0.680	3412008
9	0.680-0.690	3412009
10	0.690-0.700	3412010
11	0.700-0.710	3412011
12	0.710-0.720	3412012
13	0.720-0.730	3412013
14	0.730-0.740	3412014
15	0.740-0.750	3412015
16	0.750-0.760	3412016
17	0.760-0.770	3412017
18	0.770-0.780	3412018
19	0.780-0.790	3412019
20	0.790-0.800	3412020
21	0.800-0.810	3412021
22	0.810-0.820	3412022
23	0.820-0.830	3412023
24	0.830-0.840	3412024
25	0.840-0.850	3412025
26	0.850-0.860	3412026
27	0.860-0.870	3412027
28	0.870-0.880	3412028
29	0.880-0.890	3412029
30	0.890-0.900	3412030
31	0.900-0.910	3412031
32	0.910-0.920	3412032
33	0.920-0.930	3412033
34	0.930-0.940	3412034
35	0.940-0.950	3412035

Type	Range g/cm <sup>3</sup>	Ref.- No.
36	0.950-0.960	3412036
37	0.960-0.970	3412037
38	0.970-0.980	3412038
39	0.980-0.990	3412039
40	0.990-1.000	3412040
41	1.000-1.010	3412041
42	1.010-1.020	3412042
43	1.020-1.030	3412043
44	1.030-1.040	3412044
45	1.040-1.050	3412045
46	1.050-1.060	3412046
47	1.060-1.070	3412047
48	1.070-1.080	3412048
49	1.080-1.090	3412049
50	1.090-1.100	3412050
51	1.100-1.110	3412051
52	1.110-1.120	3412052
53	1.120-1.130	3412053
54	1.130-1.140	3412054
55	1.140-1.150	3412055
56	1.150-1.160	3412056
57	1.160-1.170	3412057
58	1.170-1.180	3412058
59	1.180-1.190	3412059
60	1.190-1.200	3412060
61	1.200-1.210	3412061
62	1.210-1.220	3412062
63	1.220-1.230	3412063
64	1.230-1.240	3412064
65	1.240-1.250	3412065
66	1.250-1.260	3412066
67	1.260-1.270	3412067
68	1.270-1.280	3412068
69	1.280-1.290	3412069
70	1.290-1.300	3412070
Case for 5 types		202012
Case for 10 types		202013

# Precision hydrometers acc. to British Standard (BS 718)

**Grey colour code =  
suitable for official testing**

Additional order no.:

- ...../01 officially calibrated  
without certificate
- ...../02 officially calibrated  
with certificate
- ...../03 with works certificate
- ...../04 with DKD  
calibration certificate

Precision hydrometers

**L 20 series acc. to BS 718**

Ref. temperature (Tp.): 15 °C

**Measuring span: 0.020 g/cm<sup>3</sup>**

**Scale units: 0.0002 g/cm<sup>3</sup>**

Total length (L): 335 mm

Type	Range g/cm <sup>3</sup>	Ref.- No.
L 20	0.600-0.620	3071201
L 20	0.620-0.640	3071202
L 20	0.640-0.660	3071203
L 20	0.660-0.680	3071204
L 20	0.680-0.700	3071205
L 20	0.700-0.720	3071206
L 20	0.720-0.740	3071207
L 20	0.740-0.760	3071208
L 20	0.760-0.780	3071209
L 20	0.780-0.800	3071210
L 20	0.800-0.820	3071101
L 20	0.820-0.840	3071102
L 20	0.840-0.860	3071103
L 20	0.860-0.880	3071104
L 20	0.880-0.900	3071105
L 20	0.900-0.920	3071106
L 20	0.920-0.940	3071107
L 20	0.940-0.960	3071108
L 20	0.960-0.980	3071109
L 20	0.980-1.000	3071110
L 20	1.000-1.020	3071111
L 20	1.020-1.040	3071112
L 20	1.040-1.060	3071113
L 20	1.060-1.080	3071114
L 20	1.080-1.100	3071115
L 20	1.100-1.120	3071116
L 20	1.120-1.140	3071117
L 20	1.140-1.160	3071118
L 20	1.160-1.180	3071119
L 20	1.180-1.200	3071120
L 20	1.200-1.220	3071121
L 20	1.220-1.240	3071122
L 20	1.240-1.260	3071123
L 20	1.260-1.280	3071124
L 20	1.280-1.300	3071125
L 20	1.300-1.320	3071126

Precision hydrometers

**L 50 series acc. to BS 718**

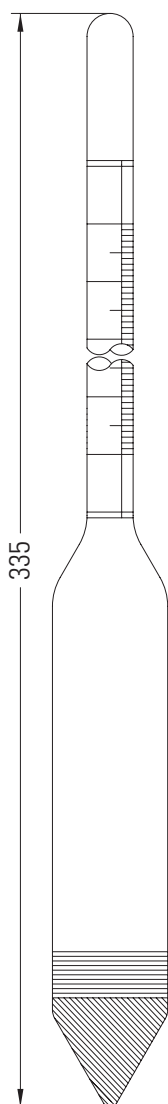
Ref. temperature (Tp.): 15 °C

**Measuring span: 0.050 g/cm<sup>3</sup>**

**Scale units: 0.0005 g/cm<sup>3</sup>**

Total length (L): 335 mm

Type	Range g/cm <sup>3</sup>	Ref.- No.
L 50	0.600-0.650	3071211
L 50	0.650-0.700	3071212
L 50	0.700-0.750	3071213
L 50	0.750-0.800	3071214
L 50	0.800-0.850	3071131
L 50	0.850-0.900	3071132
L 50	0.900-0.950	3071133
L 50	0.950-1.000	3071134
L 50	1.000-1.050	3071135
L 50	1.050-1.100	3071136
L 50	1.100-1.150	3071137
L 50	1.150-1.200	3071138
L 50	1.200-1.250	3071139
L 50	1.250-1.300	3071140
L 50	1.300-1.350	3071141
L 50	1.350-1.400	3071142
L 50	1.400-1.450	3071143
L 50	1.450-1.500	3071144
L 50	1.500-1.550	3071145
L 50	1.550-1.600	3071146
L 50	1.600-1.650	3071147
L 50	1.650-1.700	3071148
L 50	1.700-1.750	3071149
L 50	1.750-1.800	3071150
L 50	1.800-1.850	3071215
L 50	1.850-1.900	3071216
L 50	1.900-1.950	3071217
L 50	1.950-2.000	3071218

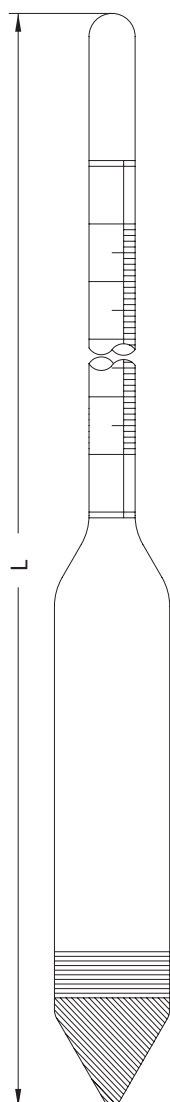


# Precision hydrometers acc. to British Standard (BS 718/734)

**Grey colour code =  
suitable for official testing**

Additional order no.:

- ...../01 officially calibrated  
without certificate
- ...../02 officially calibrated  
with certificate
- ...../03 with works certificate
- ...../04 with DKD  
calibration certificate



Precision hydrometers

**M 50 series acc. to BS 718**

Ref. temperature (Tp.): 15 °C

**Measuring span: 0.050 g/cm<sup>3</sup>**

**Scale units: 0.001 g/cm<sup>3</sup>**

Total length (L): 270 mm

Type	Range g/cm <sup>3</sup>	Ref.- No.
M 50	0.600-0.650	3071321
M 50	0.650-0.700	3071322
M 50	0.700-0.750	3071323
M 50	0.750-0.800	3071324
M 50	0.800-0.850	3071151
M 50	0.850-0.900	3071152
M 50	0.900-0.950	3071153
M 50	0.950-1.000	3071154
M 50	1.000-1.050	3071155
M 50	1.050-1.100	3071156
M 50	1.100-1.150	3071157
M 50	1.150-1.200	3071158
M 50	1.200-1.250	3071159
M 50	1.250-1.300	3071160
M 50	1.300-1.350	3071161

Precision hydrometers

**M 100 series acc. to BS 718**

Ref. temperature (Tp.): 15 °C

**Measuring span: 0.100 g/cm<sup>3</sup>**

**Scale units: 0.002 g/cm<sup>3</sup>**

Total length (L): 250 mm

Type	Range g/cm <sup>3</sup>	Ref.- No.
M 100	0.600-0.700	3071231
M 100	0.700-0.800	3071232
M 100	0.800-0.900	3071171
M 100	0.900-1.000	3071172
M 100	1.000-1.100	3071173
M 100	1.100-1.200	3071177
M 100	1.200-1.300	3071174
M 100	1.300-1.400	3071175
M 100	1.400-1.500	3071176

Precision hydrometers

**S 50 series acc. to BS 718**

Ref. temperature (Tp.): 15 °C

**Measuring span: 0.050 g/cm<sup>3</sup>**

**Scale units: 0.002 g/cm<sup>3</sup>**

Total length (L): 190 mm

Type	Range g/cm <sup>3</sup>	Ref.- No.
S 50	0.600-0.650	3071241
S 50	0.650-0.700	3071242
S 50	0.700-0.750	3071243
S 50	0.750-0.800	3071244
S 50	0.800-0.850	3071181
S 50	0.850-0.900	3071182
S 50	0.900-0.950	3071183
S 50	0.950-1.000	3071184
S 50	1.000-1.050	3071185
S 50	1.050-1.100	3071186
S 50	1.100-1.150	3071187
S 50	1.150-1.200	3071188
S 50	1.200-1.250	3071189
S 50	1.250-1.300	3071190
S 50	1.300-1.350	3071191

Precision hydrometers

**acc. to BS 734**

Ref. temperature (Tp.): 20 °C

**Measuring span: see table**

**Scale units: see table**

Total length (L): see table

Type	Range g/cm <sup>3</sup>	Scale g/cm <sup>3</sup>	Length mm	Ref.- No.
1	1.025-1.035	0.0002	240	3071011
2	1.025-1.035	0.0005	215	3071012
3	1.025-1.035	0.0005	160	3071013
1A	1.015-1.025	0.0002	240	3071014
2A	1.015-1.025	0.0005	215	3071015
3A	1.015-1.025	0.0005	160	3071016

# Precision hydrometers acc. to ASTM, A.P.I.

Precision hydrometers

**acc. to ASTM**

Ref. temperature (Tp.): 60 °F

**Measuring span: 12 °A.P.I.**

**Scale units: 0.1 °A.P.I.**

Total length (L): 330 mm

Type	Range API grade	Ref.- No.
1 H	-1 to +11	3202001
2 H	+9 to +21	3202002
3 H	+19 to +31	3202003
4 H	+29 to +41	3202004
5 H	+39 to +51	3202005
6 H	+49 to +61	3202006
7 H	+59 to +71	3202007
8 H	+69 to +81	3202008
9 H	+79 to +91	3202009
10 H	+89 to +101	3202010

Precision hydrometers

**acc. to ASTM**

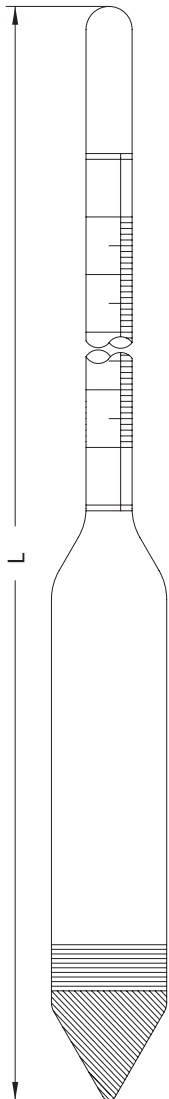
Ref. temperature (Tp.): 60 °F

**Measuring span: 6 °A.P.I.**

**Scale units: 0.1 °A.P.I.**

Total length (L): 160 mm

Type	Range API grade	Ref.- No.
21 H	0-6	3202051
22 H	5-11	3202052
23 H	10-16	3202053
24 H	15-21	3202054
25 H	20-26	3202055
26 H	25-31	3202056
27 H	30-36	3202057
28 H	35-41	3202058
29 H	40-46	3202059
30 H	45-51	3202060
31 H	50-56	3202061
32 H	55-61	3202062
33 H	60-66	3202063
34 H	65-71	3202064
35 H	70-76	3202065
36 H'	75-81	3202066
37 H	80-86	3202067
38 H	85-91	3202068
39 H	90-96	3202069
40 H	95-101	3202070



Precision hydrometers

**acc. to ASTM**

Ref. temperature (Tp.): 60 °F

**Measuring span: 12 °A.P.I.**

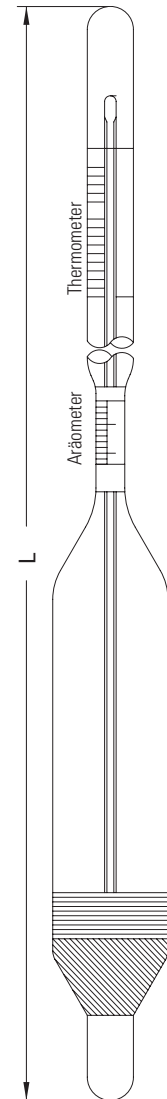
**Scale units: 0.1 °A.P.I.**

With thermometer

(+30 to +220 °F in 2 °F)

Total length (L): 380 mm

Type	Range API grade	Ref.- No.
71 H	-1 to +11	3212051
72 H	+9 to +21	3212052
73 H	+19 to +31	3212053
74 H	+29 to +41	3212054



# Precision hydrometers acc. to ASTM, A.P.I.

Precision hydrometers

**acc. to ASTM**

Ref. temperature (Tp.): 60 °F

**Measuring span: 8 °A.P.I.**

**Scale units: 0.1 °A.P.I.**

Total length (L): 380 mm

**With thermometer  
(0 to +150 °F in 2 °F)**

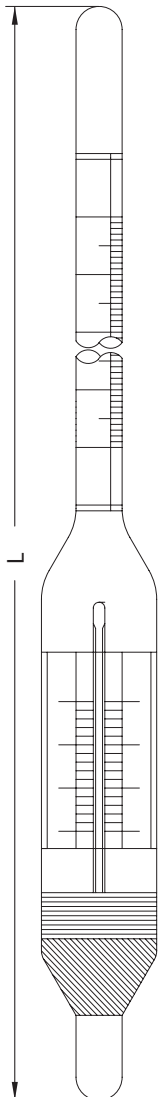
Type	Range API grade	Ref.- No.
41 HL	15-23	3032001
42 HL	22-30	3032002
43 HL	29-37	3032003
44 HL	36-44	3032004
45 HL	43-51	3032005

**With thermometer  
(+30 to +180 °F in 2 °F)**

Type	Range API grade	Ref.- No.
41 HM	15-23	3032006
42 HM	22-30	3032007
43 HM	29-37	3032008
44 HM	36-44	3032009
45 HM	43-51	3032010

**With thermometer  
(+60 to +220 °F in 2 °F)**

Type	Range API grade	Ref.- No.
41 HH	15-23	3032011
42 HH	22-30	3032012
43 HH	29-37	3032013
44 HH	36-44	3032014
45 HH	43-51	3032015



Precision hydrometers

**acc. to ASTM**

Ref. temperature (Tp.): 60 °F

**Measuring span: 12 °A.P.I.**

**Scale units: 0.1 °A.P.I.**

Total length (L): 380 mm

**With thermometer  
(0 to +150 °F in 2 °F)**

Type	Range API grade	Ref.- No.
51 HL	-1 to +11	3122036
52 HL	+9 to +21	3122037
53 HL	+19 to +31	3122038
54HL	+29 to +41	3122039
55 HL	+39 to +51	3122040
56 HL	+49 to +61	3122041
57 HL	+59 to +71	3122042
58 HL	+69 to +81	3122043
59 HL	+79 to +91	3122044
60 HL	+89 to +101	3122045

**With thermometer  
(+30 to +180 °F in 2 °F)**

Type	Range API grade	Ref.- No.
51 HM	-1 to +11	3122046
52 HM	+9 to +21	3122047
53 HM	+19 to +31	3122048
54HM	+29 to +41	3122049
55 HM	+39 to +51	3122050
56 HM	+49 to +61	3122051
57 HM	+59 to +71	3122052
58 HM	+69 to +81	3122053
59 HM	+79 to +91	3122054
60 HM	+89 to +101	3122055

**With thermometer  
(+60 to +220 °F in 2 °F)**

Type	Range API grade	Ref.- No.
51 HH	-1 to +11	3122056
52 HH	+9 to +21	3122057
53 HH	+19 to +31	3122058
54HH	+29 to +41	3122059
55 HH	+39 to +51	3122060
56 HH	+49 to +61	3122061
57 HH	+59 to +71	3122062
58 HH	+69 to +81	3122063
59 HH	+79 to +91	3122064
60 HH	+89 to +101	3122065

# Precision hydrometers acc. to ASTM E100

Precision hydrometers

**acc. to ASTM E100**

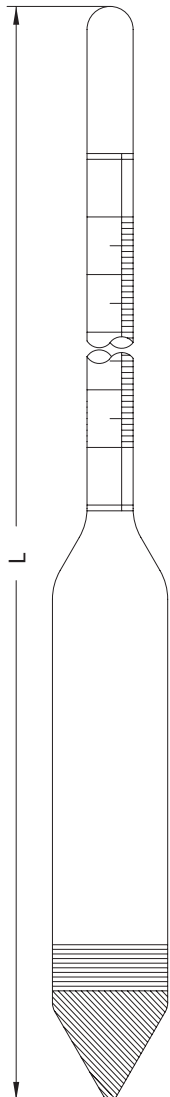
Ref. temperature (Tp.): 60/60 °F

**Measuring span: 0.050 sp/gr**

**Scale units: 0.001 sp/gr**

Total length (L): 260 mm

Type	Range sp/gr	Ref.- No.
102 H	0.650-0.700	3222001
103 H	0.700-0.750	3222002
104 H	0.750-0.800	3222003
105 H	0.800-0.850	3222004
106 H	0.850-0.900	3222005
107 H	0.900-0.950	3222006
108 H	0.950-1.000	3222007
125 H	1.000-1.050	3222011
126 H	1.050-1.100	3222012
127 H	1.100-1.150	3222013
128 H	1.150-1.200	3222014
129 H	1.200-1.250	3222015
130 H	1.250-1.300	3222016
131 H	1.300-1.350	3222017
132 H	1.350-1.400	3222018
133 H	1.400-1.450	3222019
134 H	1.450-1.500	3222020
135 H	1.500-1.550	3222021
136 H	1.550-1.600	3222022
137 H	1.600-1.650	3222023
138 H	1.650-1.700	3222024
139 H	1.700-1.750	3222025
140 H	1.750-1.800	3222026
141 H	1.800-1.850	3222027



Precision hydrometers

**acc. to ASTM E100**

Ref. temperature (Tp.): 60/60 °F

**Measuring span: 0.050 sp/gr**

**Scale units: 0.0005 sp/gr**

Total length (L): 330 mm

Type	Range sp/gr	Ref.- No.
82 H	0.650-0.700	3222051
83 H	0.700-0.750	3222052
84 H	0.750-0.800	3222053
85 H	0.800-0.850	3222054
86 H	0.850-0.900	3222055
87 H	0.900-0.950	3222056
88 H	0.950-1.000	3222057
89 H	1.000-1.050	3222058
90 H	1.050-1.100	3222059
98 H	0.950-1.000	3222060
111 H	1.000-1.050	3222061
112 H	1.050-1.100	3222062
113 H	1.100-1.150	3222063
114 H	1.150-1.200	3222064
115 H	1.200-1.250	3222065
116 H	1.250-1.300	3222066
117 H	1.300-1.350	3222067
118 H	1.350-1.400	3222068
119 H	1.400-1.450	3222069
120 H	1.450-1.500	3222070

Precision hydrometers

**acc. to ASTM E100**

Ref. temperature (Tp.): 15 °C

**Measuring span: 50 kg/m³**

**Scale units: 0.5 kg/m³**

Total length (L): 330 mm

Type	Range sp/gr	Ref.- No.
311 H	600-650	3222151
312 H	650-700	3222152
313 H	700-750	3222153
314 H	750-800	3222154
315 H	800-850	3222155
316 H	850-900	3222156
317 H	900-950	3222157
318 H	950-1000	3222158
319 H	1000-1050	3222159
320 H	1050-1100	3222160

# Soil Hydrometers acc. to ASTM E100

**Soil Hydrometers acc. to ASTM E100**

Ref. temperature (Tp.): 68/68 °F, total length (L): 280 mm

**Measuring span: 0.043 sp/gr**

**Scale units: 0.001 sp/gr**

Type	Range sp/gr	Ref.- No.
151 H	0.995-1.038	3231031

**Measuring span: 65**

**Scale units: 1.0 g/L**

Type	Range sp/gr	Ref.- No.
152 H	-5 to 60	3231032

# Precision hydrometers acc. to ASTM E100

Precision hydrometers

**acc. to ASTM E100**

Ref. temperature (Tp.): 15 °C

**Measuring span: 50 kg/m<sup>3</sup>**

**Scale units: 0.5 kg/m<sup>3</sup>**

Total length (L): 380 mm

**With thermometer  
(-20 to +65 °C in 1 °C)**

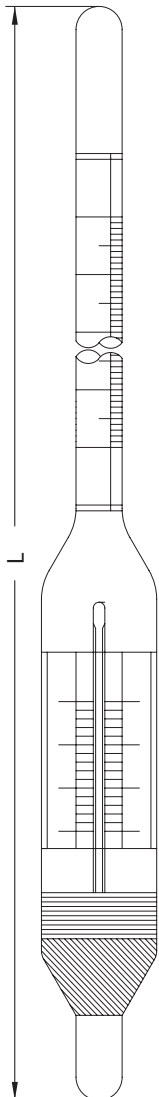
Type	Range kg/m <sup>3</sup>	Ref.- No.
300 HL	600-650	3222111
301 HL	650-700	3222112
302 HL	700-750	3222113
303HL	750-800	3222114
304 HL	800-850	3222115
305 HL	850-900	3222116
306HL	900-950	3222117
307 HL	950-1000	3222118
308 HL	1000-1050	3222119
309 HL	1050-1100	3222120

**With thermometer  
(0 to +85 °C in 1 °C)**

Type	Range kg/m <sup>3</sup>	Ref.- No.
300 HM	600-650	3222121
301 HM	650-700	3222122
302 HM	700-750	3222123
303HM	750-800	3222124
304 HM	800-850	3222125
305 HM	850-900	3222126
306HM	900-950	3222127
307 HM	950-1000	3222128
308 HM	1000-1050	3222129
309 HM	1050-1100	3222130

**With thermometer  
(+20 to +105 °C in 1 °C)**

Type	Range kg/m <sup>3</sup>	Ref.- No.
300 HH	600-650	3222131
301 HH	650-700	3222132
302 HH	700-750	3222133
303HH	750-800	3222134
304 HH	800-850	3222135
305 HH	850-900	3222136
306HH	900-950	3222137
307 HH	950-1000	3222138
308 HH	1000-1050	3222139
309 HH	1050-1100	3222140



# Precision hydrometers for mineral oil

## Grey colour code = suitable for official testing

Additional order no.:

- ...../01 officially calibrated  
without certificate
- ...../02 officially calibrated  
with certificate
- ...../03 with works certificate
- ...../04 with DKD  
calibration certificate

Precision hydrometers

### for mineral oil

Ref. temperature (Tp.): 15 °C

**Measuring span: 0.090 g/cm<sup>3</sup>**

**Scale units: 0.001 g/cm<sup>3</sup>**

Total length (L): 425 mm

Type	Range g/cm <sup>3</sup>	Ref.- No.
1	0.680-0.770	3252021
2	0.750-0.840	3252022
3	0.820-0.910	3252023

Precision hydrometers

### for mineral oil

Ref. temperature (Tp.): 15 °C

**Measuring span: 0.050 g/cm<sup>3</sup>**

**Scale units: 0.0005 g/cm<sup>3</sup>**

Total length (L): 360 mm

Type	Range g/cm <sup>3</sup>	Ref.- No.
Reading at bottom		
P1	0.610-0.660	3252081
P2	0.660-0.710	3252082
P3	0.710-0.760	3252083
P4	0.760-0.810	3252084
Reading at top		
P5	0.810-0.860	3252085
P6	0.860-0.910	3252086
P7	0.910-0.960	3252087
P8	0.960-1.010	3252088

### Precision N.O.M. hydro- meters for mineral oil

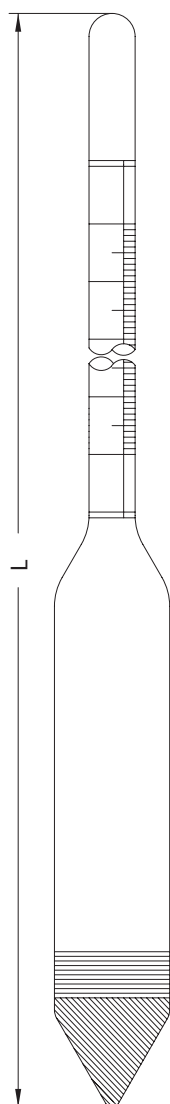
Ref. temperature (Tp.): 15 °C

**Measuring span: 0.050 g/cm<sup>3</sup>**

**Scale units: 0.001 g/cm<sup>3</sup>**

Total length (L): 250 mm

Type	Range g/cm <sup>3</sup>	Ref.- No.
1	0.650-0.700	3252041
2	0.700-0.750	3252042
3	0.750-0.800	3252043
4	0.800-0.850	3252044
5	0.850-0.900	3252045
6	0.900-0.950	3252046
7	0.950-1.000	3252047
8	1.000-1.050	3252048



# Precision hydrometers for mineral oil

## Grey colour code = suitable for official testing

Additional order no.:

- ...../01 officially calibrated  
without certificate
- ...../02 officially calibrated  
with certificate
- ...../03 with works certificate
- ...../04 with DKD  
calibration certificate

Precision hydrometers  
**for mineral oil**  
Ref. temperature (Tp.): 15 °C  
**Measuring span: see table**  
**Scale units: 0.001 g/cm<sup>3</sup>**  
Total length (L): 410 mm  
**With thermometer**  
**(-10 to +60 °C in 1 °C)**

Type	Range g/cm <sup>3</sup>	Ref.- No.
P1	0.610-0.700	3212001
P2	0.680-0.770	3212002
P3	0.750-0.840	3212003
P4	0.820-0.910	3212004
P5	0.890-0.990	3212005
P6	0.980-1.100	3212006

Precision hydrometers  
**for mineral oil**  
Ref. temperature (Tp.): 15 °C  
**Measuring span: see table**  
**Scale units: 0.001 g/cm<sup>3</sup>**  
Total length (L): 410 mm  
**With thermometer**  
**(-20 to +50 °C in 1 °C)**

Type	Range g/cm <sup>3</sup>	Ref.- No.
P7	0.610-0.700	3212021
P8	0.680-0.770	3212022
P9	0.750-0.840	3212023

Precision hydrometers  
**for mineral oil**  
Ref. temperature (Tp.): 15 °C  
**Measuring span: see table**  
**Scale units: 0.001 g/cm<sup>3</sup>**  
Total length (L): 410 mm  
**With thermometer**  
**(0 to +100 °C in 1 °C)**

Type	Range g/cm <sup>3</sup>	Ref.- No.
P10	0.820-0.910	3212024
P11	0.890-0.990	3212025
P12	0.980-1.100	3212026

Precision hydrometers  
**for mineral oil**  
Ref. temperature (Tp.): 15 °C  
**Measuring span: 0.020 g/cm<sup>3</sup>**  
**Scale units: 0.0002 g/cm<sup>3</sup>**  
Total length (L): 440 mm  
**With thermometer**  
**(+13 to +27 °C in 0.1 °C)**

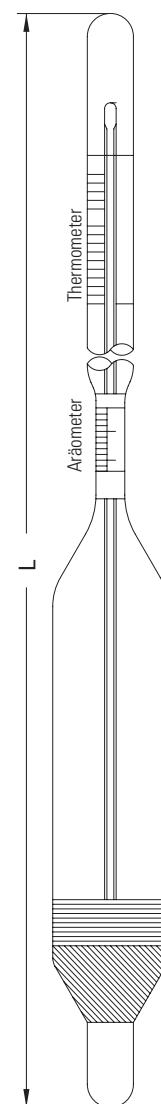
Type	Range g/cm <sup>3</sup>	Ref.- No.
1	0.655-0.675	3242001
2	0.675-0.695	3242002
3	0.695-0.715	3242003
4	0.715-0.735	3242004
5	0.735-0.755	3242005
6	0.755-0.775	3242006
7	0.775-0.795	3242007
8	0.795-0.815	3242008
9	0.815-0.835	3242009
10	0.835-0.855	3242010
11	0.855-0.875	3242011
12	0.875-0.895	3242012
13	0.895-0.915	3242013
14	0.915-0.935	3242014
15	0.935-0.955	3242015
16	0.955-0.975	3242016
17	0.975-0.995	3242017
18	0.995-1.015	3242018

**Precision hydrometers for  
custom authorities**  
Ref. temperature (Tp.): 15 °C  
**Measuring span: 0.060 g/cm<sup>3</sup>**  
**Scale units: 0.0005 g/cm<sup>3</sup>**  
Total length (L): 410 mm  
**With thermometer**  
**(0 to +60 °C in 0.5 °C)**

Type	Range g/cm <sup>3</sup>	Ref.- No.
1	0.595-0.655	3072021
2	0.645-0.705	3072022
3	0.695-0.755	3072023
4	0.745-0.805	3072024
5	0.795-0.855	3072025
6	0.845-0.905	3072026
7	0.895-0.955	3072027
8	0.955-1.005	3072028

Precision hydrometers  
**for mineral oil**  
Ref. temperature (Tp.): 15 °C  
**Measuring span: see table**  
**Scale units: 0.001 g/cm<sup>3</sup>**  
Total length (L): 450 mm  
**With thermometer (see table)**

Type	Range g/cm <sup>3</sup>	Temp. °C	Ref.- No.
1	0.890-0.990	0 +60	3072003
2	0.980-1.100	0 +60	3072004
3	0.890-0.990	0 +100	3072007
4	0.980-1.100	0 +100	3072008



# Precision hydrometers for liquid gas

## Grey colour code = suitable for official testing

Additional order no.:

- ...../01 officially calibrated without certificate
- ...../02 officially calibrated with certificate
- ...../03 with works certificate
- ...../04 with DKD calibration certificate

Precision hydrometers

**acc. to DIN 12804**

**for liquid gas**

Ref. temperature (Tp.): 15 °C

**Measuring span: 0.050 g/cm<sup>3</sup>**

**Scale units: 0.0005 g/cm<sup>3</sup>**

Total length (L): 410 mm

**With thermometer**

(0 to +30 °C in 0.5 °C)

Bulb with protective tubing

Pressure to 1.500 kPa (15 bar)

Type	Range g/cm <sup>3</sup>	Ref.-No.
GAS 1	0.500-0.550	3242051
GAS 2	0.550-0.600	3242052
GAS 3	0.600-0.650	3242053

Precision hydrometers

**for propane and butane**

Ref. temperature (Tp.): 15/4 °C

**Measuring span: see table**

**Scale units: see table**

Total length (L): 410 mm

**With thermometer**

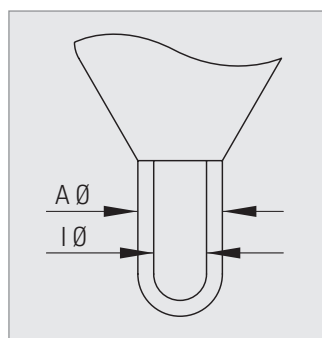
(0 to +30 °C in 1 °C)

Bulb with protective tubing

Pressure to 1.500 kPa (15 bar)

Type	Range g/cm <sup>3</sup>	Scale g/cm <sup>3</sup>	Ref.-No.
1	0.500-0.650	0.001	3242056
2	0.500-0.550	0.001	3242057
3	0.550-0.600	0.001	3242058
4	0.500-0.650	0.002	3242061
5	0.500-0.600	0.001	3242071

## Bulb with protective tubing



Precision hydrometers

**acc. to ASTM E100**

**for propane and butane**

Ref. temperature (Tp.): 15 °C

**Measuring span: 500-650 kg/m<sup>3</sup>**

**Scale units: 1 kg/m<sup>3</sup>**

Total length (L): 387 mm

**With thermometer**

(0 to +35 °C in 0.5 °C)

Bulb with protective tubing

Pressure to 1.400 kPa (15 bar)

Type	Range g/cm <sup>3</sup>	Scale kg/m <sup>2</sup>	Ref.-No.
310 H	0.500-0.650	1	3222180

Precision hydrometers

**acc. to ASTM E100**

**for propane and butane**

Ref. temperature (Tp.): 60/60 °F

**Measuring span: 0.150 sp/gr**

**Scale units: 0.001 sp/gr**

Total length (L) max.: 387 mm

**With thermometer**

(+30 to +90 °F in 1 °F)

Bulb with protective tubing

Pressure to 200 psi

Type	Range sp/gr	Scale sp/gr	Ref.-No.
101 H	0.500-0.650	0.001	3252061

Precision hydrometers

**for propane and butane**

Ref. temperature (Tp.): 15/4 °C

**Measuring span: 0.030 g/cm<sup>3</sup>**

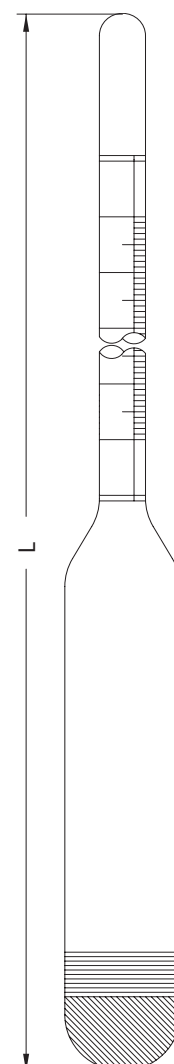
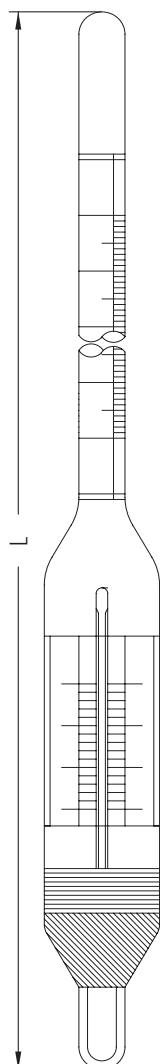
**Scale units: 0.0005 g/cm<sup>3</sup>**

Total length (L): 350 mm

Bulb with protective tubing

Pressure to 1.500 kPa (15 bar)

Type	Range g/cm <sup>3</sup>	Ref.-No.
1	0.475-0.505	3081011
2	0.490-0.520	3081012
3	0.505-0.535	3081013
4	0.520-0.550	3081014
5	0.535-0.565	3081015
6	0.550-0.580	3081016
7	0.565-0.595	3081017
8	0.580-0.610	3081018



# Range finders in $g/cm^3$ and acc. to Baumé

## Grey colour code = suitable for official testing

Additional order no.:

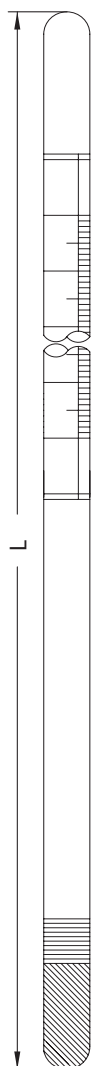
- ...../01 officially calibrated  
without certificate
- ...../02 officially calibrated  
with certificate
- ...../03 with works certificate
- ...../04 with DKD  
calibration certificate

## Range finders with dual scale in $g/m^3$ and Bé

Ref. temperature (Tp.): 20 °C

Measuring span, scale units and  
total length (L): see table

Range I $g/cm^3$	Scale I $g/cm^3$	Range II Bé	Scale II Bé	Length mm	Ref.- No.
0.600-1.000	0.01	100-0	1	290	3311231
1.000-1.500	0.005	0-48	0.5	280	3311232
1.000-2.000	0.01	0-70	1	300	3311233



# Precision hydrometers acc. to Baumé

Precision hydrometers

**acc. to Baumé**

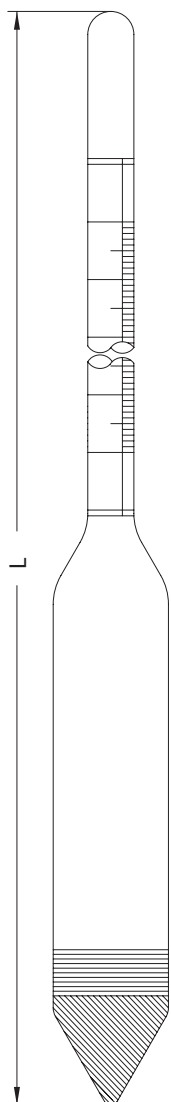
**Measuring span: see table**

**Scale units: 0.1 °Bé**

Total length (L): 260 mm

Also available with thermometer  
(0-30 °C in 1.0 °C, L = 300 mm)

Range Bé	Tp. °C	Ref.-No.
0-1	15	3271121
0-2	15	3271122
0-3	15	3271123
0-5	15	3271124
0-1	20	3271121-20
0-2	20	3271122-20
0-3	20	3271123-20
0-5	20	3271124-20



Precision hydrometers

**acc. to Baumé**

Ref. temperature (Tp.): see table

**Measuring span: 10 °Bé**

**Scale units: 0.5 °Bé**

Total length (L): 220 mm

Also available with thermometer  
(0 to +30 °C in 1.0 °C,  
total length 250 mm)

Range Bé	Tp. °C	Ref.-No.
0-10	15	3281201
10-20	15	3281202
20-30	15	3281203
30-40	15	3281204
40-50	15	3281205
50-60	15	3281206
60-70	15	3281207
0-10	20	3281201-20
10-20	20	3281202-20
20-30	20	3281203-20
30-40	20	3281204-20
40-50	20	3281205-20
50-60	20	3281206-20
60-70	20	3281207-20

Precision hydrometers

**acc. to Baumé**

Ref. temperature (Tp.): see table

**Measuring span: 15 °Bé**

**Scale units: 0.5 °Bé**

Total length (L): 220 mm

Also available with thermometer  
(0 to +35 °C in 1.0 °C,  
total length 300 mm)

Range Bé	Tp. °C	Ref.-No.
0-15	15	3281221
15-30	15	3281222
30-45	15	3281223
45-60	15	3281224
60-75	15	3281225
0-15	20	3281221-20
15-30	20	3281222-20
30-45	20	3281223-20
45-60	20	3281224-20
60-75	20	3281225-20

Precision hydrometers

**acc. to Baumé**

Ref. temperature (Tp.): see table

**Measuring span: 10 °Bé**

**Scale units: 0.2 °Bé**

Total length (L): 250 mm

Also available with thermometer  
(0 to +30 °C in 1.0 °C,  
total length 280 mm)

Range Bé	Tp. °C	Ref.-No.
0-10	15	3281211
10-20	15	3281212
20-30	15	3281213
30-40	15	3281214
40-50	15	3281215
50-60	15	3281216
60-70	15	3281217
0-10	20	3281211-20
10-20	20	3281212-20
20-30	20	3281213-20
30-40	20	3281214-20
40-50	20	3281215-20
50-60	20	3281216-20
60-70	20	3281217-20

Precision hydrometers

**acc. to Baumé**

Ref. temperature (Tp.): see table

**Measuring span: 15 °Bé**

**Scale units: 0.2 °Bé**

Total length (L): 270 mm

Also available with thermometer  
(0 to +35 °C in 1.0 °C,  
total length 300 mm)

Range Bé	Tp. °C	Ref.-No.
0-15	15	3261131
15-30	15	3261132
30-45	15	3261133
45-60	15	3261134
60-75	15	3261135
0-15	20	3261131-20
15-30	20	3261132-20
30-45	20	3261133-20
45-60	20	3261134-20
60-75	20	3261135-20

Precision hydrometers

**acc. to Baumé**

Ref. temperature (Tp.): see table

**Measuring span: 10 °Bé**

**Scale units: 0.1 °Bé**

Total length (L): 270 mm

Also available with thermometer  
(0 to +30 °C in 1.0 °C,  
total length 320 mm)

Range Bé	Tp. °C	Ref.-No.
0-10	15	3211071
10-20	15	3211072
20-30	15	3211073
30-40	15	3211074
40-50	15	3211075
50-60	15	3211076
60-70	15	3211077
0-10	20	3211071-20
10-20	20	3211072-20
20-30	20	3211073-20
30-40	20	3211074-20
40-50	20	3211075-20
50-60	20	3211076-20
60-70	20	3211077-20

Precision hydrometers

**acc. to Baumé**

Ref. temperature (Tp.): see table

**Measuring span: 15 °Bé**

**Scale units: 0.1 °Bé**

Total length (L): 300 mm

Also available with thermometer  
(0 to +35 °C in 1.0 °C,  
total length 370 mm)

Range Bé	Tp. °C	Ref.-No.
0-15	15	3261011
15-30	15	3261012
30-45	15	3261013
45-60	15	3261014
60-75	15	3261015
0-15	20	3261011-20
15-30	20	3261012-20
30-45	20	3261013-20
45-60	20	3261014-20
60-75	20	3261015-20

# Precision hydrometers acc. to Baumé

Precision hydrometers

**acc. to Baumé**

Ref. temperature (Tp.): see table

**Measuring span: 20 °Bé**

**Scale units: 1.0 °Bé**

Total length (L): 220 mm

Also available with thermometer  
(0 to +30 °C in 1.0 °C,  
total length 250 mm)

Range Bé	Tp. °C	Ref.- No.
0-20	15	3261021
10-30	15	3261022
20-40	15	3261023
30-50	15	3261024
40-60	15	3261025
50-70	15	3261026
0-20	20	3261021-20
10-30	20	3261022-20
20-40	20	3261023-20
30-50	20	3261024-20
40-60	20	3261025-20
50-70	20	3261026-20

Precision hydrometers

**acc. to Baumé**

Ref. temperature (Tp.): see table

**Measuring span: see table**

**Scale units: 1.0 °Bé**

Total length (L): 250 mm

Also available with thermometer  
(0 to +30 °C in 1.0 °C,  
total length 300 mm)

Range Bé	Tp. °C	Ref.- No.
0-30	15	3261041
30-60	15	3261042
40-70	15	3261043
0-35	15	3261044
30-70	15	3261046
0-30	20	3261041-20
30-60	20	3261042-20
40-70	20	3261043-20
0-35	20	3261044-20
30-70	20	3261046-20

Precision hydrometers

**acc. to Baumé**

Ref. temperature (Tp.): see table

**Measuring span: 20 °Bé**

**Scale units: 0.5 °Bé**

Total length (L): 240 mm

Also available with thermometer  
(0 to +30 °C in 1.0 °C,  
total length 300 mm)

Range Bé	Tp. °C	Ref.- No.
0-20	15	3261161
10-30	15	3261162
20-40	15	3261163
30-50	15	3261164
40-60	15	3261165
50-70	15	3261166
0-20	20	3261161-20
10-30	20	3261162-20
20-40	20	3261163-20
30-50	20	3261164-20
40-60	20	3261165-20
50-70	20	3261166-20

Precision hydrometers

**acc. to Baumé**

Ref. temperature (Tp.): see table

**Measuring span: see table**

**Scale units: 0.5 °Bé**

Total length (L): 275 mm

Also available with thermometer  
(0 to +30 °C in 1.0 °C,  
total length 325 mm)

Range Bé	Tp. °C	Ref.- No.
0-30	15	3271161
30-60	15	3271162
60-90	15	3271163
0-35	15	3271165
30-70	15	3271166
0-30	20	3271161-20
30-60	20	3271162-20
60-90	20	3271163-20
0-35	20	3271165-20
30-70	20	3271166-20

Precision hydrometers

**acc. to Baumé**

Ref. temperature (Tp.): see table

**Measuring span: 20 °Bé**

**Scale units: 0.2 °Bé**

Total length (L): 270 mm

Also available with thermometer  
(0 to +30 °C in 1.0 °C,  
total length 320 mm)

Range Bé	Tp. °C	Ref.- No.
0-20	15	3261171
10-30	15	3261172
20-40	15	3261173
30-50	15	3261174
40-60	15	3261175
50-70	15	3261176
0-20	20	3261171-20
10-30	20	3261172-20
20-40	20	3261173-20
30-50	20	3261174-20
40-60	20	3261175-20
50-70	20	3261176-20

Precision hydrometers

**acc. to Baumé**

Ref. temperature (Tp.): see table

**Measuring span: see table**

**Scale units: 0.2 °Bé**

Total length (L): 300 mm

Also available with thermometer  
(0 to +30 °C in 1.0 °C,  
total length 350 mm)

Range Bé	Tp. °C	Ref.- No.
0-30	15	3271171
30-60	15	3271172
40-70	15	3271173
0-35	15	3271175
30-70	15	3271176
0-30	20	3271171-20
30-60	20	3271172-20
40-70	20	3271173-20
0-35	20	3271175-20
30-70	20	3271176-20

Precision hydrometers

**acc. to Baumé**

Ref. temperature (Tp.): see table

**Measuring span: 20 °Bé**

**Scale units: 0.1 °Bé**

Total length (L): 350 mm

Also available with thermometer  
(0 to +30 °C in 1.0 °C,  
total length 400 mm)

Range Bé	Tp. °C	Ref.- No.
0-20	15	3261031
10-30	15	3261032
20-40	15	3261033
30-50	15	3261034
40-60	15	3261035
50-70	15	3261036
0-20	20	3261031-20
10-30	20	3261032-20
20-40	20	3261033-20
30-50	20	3261034-20
40-60	20	3261035-20
50-70	20	3261036-20

Precision hydrometers

**acc. to Baumé**

Ref. temperature (Tp.): see table

**Measuring span: 20 °Bé**

**Scale units: 1.0 °Bé**

Total length (L): 250 mm

Also available with thermometer  
(0 to +30 °C in 1.0 °C,  
total length 300 mm)

Range Bé	Tp. °C	Ref.- No.
0-50	15	3261051
0-70	15	3261052
0-50	20	3261051-20
0-70	20	3261052-20

# Precision saccharometers

## % mas/Brix/Balling

The scales are marked in % mas/Brix/Balling.

Precision saccharometers  
in % mas/Brix/Balling  
Ref. temperature (Tp.): 20 °C

**Measuring span: 10%**  
**Scale units: 0.5%**  
Total length (L): 220 mm

Range % mas/Brix/Balling	Ref.- No.
0-10	3302191
10-20	3302192
20-30	3302193
30-40	3302194
40-50	3302195
50-60	3302196
60-70	3302197
70-80	3302198
80-90	3302199

**Measuring span: 15%**  
**Scale units: 0.5%**  
Total length (L): 220 mm

Range % mas/Brix/Balling	Ref.- No.
0-15	3281081
15-30	3281082
30-45	3281083
45-60	3281084
60-75	3281085
75-90	3281086

**Measuring span: 20%**  
**Scale units: 0.5%**  
Total length (L): 300 mm

Range % mas/Brix/Balling	Ref.- No.
0-20	3281181
10-30	3281182
20-40	3281183
30-50	3281184
40-60	3281185
50-70	3281186
60-80	3281187
70-90	3281188

Precision saccharometers  
in % mas/Brix/Balling  
Ref. temperature (Tp.): 20 °C

**Measuring span: 10%**  
**Scale units: 0.2%**  
Total length (L): 280 mm

Range % mas/Brix/Balling	Ref.- No.
0-10	3302410
10-20	3302411
20-30	3302412
30-40	3302413
40-50	3302414
50-60	3302415
60-70	3302416
70-80	3302417
80-90	3302418

**Measuring span: 15%**  
**Scale units: 0.2%**  
Total length (L): 270 mm

Range % mas/Brix/Balling	Ref.- No.
0-15	3281301
15-30	3281302
30-45	3281303
45-60	3281304
60-75	3281305
75-90	3281306

**Measuring span: 20%**  
**Scale units: 0.2%**  
Total length (L): 350 mm

Range % mas/Brix/Balling	Ref.- No.
0-20	3281191
10-30	3281192
20-40	3281193
30-50	3281194
40-60	3281195
50-70	3281196
60-80	3281197
70-90	3281198

Precision saccharometers  
in % mas/Brix/Balling  
Ref. temperature (Tp.): 20 °C

**Measuring span: 10%**  
**Scale units: 0.1%**  
Total length (L): 280 mm

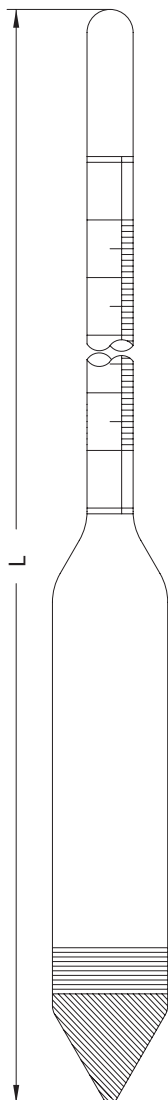
Range % mas/Brix/Balling	Ref.- No.
0-10	3281011
10-20	3281012
20-30	3281013
30-40	3281014
40-50	3281015
50-60	3281016
60-70	3281017
70-80	3281018
80-90	3281019

**Measuring span: 15%**  
**Scale units: 0.1%**  
Total length (L): 300 mm

Range % mas/Brix/Balling	Ref.- No.
0-15	3281031
15-30	3281032
30-45	3281033
45-60	3281034
60-75	3281035
75-90	3281036

**Measuring span: 20%**  
**Scale units: 0.1%**  
Total length (L): 350 mm

Range % mas/Brix/Balling	Ref.- No.
0-20	3281111
10-30	3281112
20-40	3281113
30-50	3281114
40-60	3281115
50-70	3281116
60-80	3281117
70-90	3281118



# Precision saccharometers

## % mas/Brix/Balling

The scales are marked in % mas/Brix/Balling.

Precision saccharometers  
**in % mas/Brix/Balling**  
 Ref. temperature (Tp.): 20 °C  
**With thermometer**  
**(0 to +35 °C in 1 °C)**  
**With correction scale**

**Measuring span: 10%**  
**Scale units: 0.1%**  
 Total length (L): 350mm

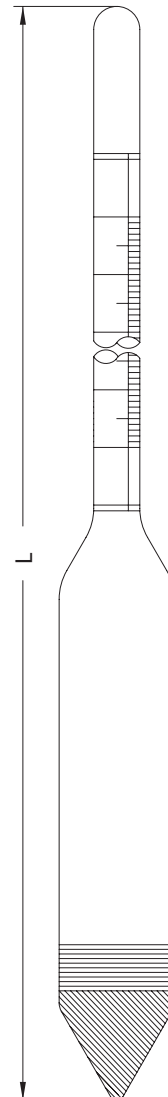
Range % mas/Brix/Balling	Ref.- No.
0-10	3281051
10-20	3281052
20-30	3281053
30-40	3281054
40-50	3281055
50-60	3281056
60-70	3281057
70-80	3281058
80-90	3281059

**Measuring span: 15%**  
**Scale units: 0.5%**  
 Total length (L): 350 mm

Range % mas/Brix/Balling	Ref.- No.
0-15	3281071
15-30	3281072
30-45	3281073
45-60	3281074
60-75	3281075
75-90	3281076

**Measuring span: 20%**  
**Scale units: 0.5%**  
 Total length (L): 400 mm

Range % mas/Brix/Balling	Ref.- No.
0-20	3281141
10-30	3281142
20-40	3281143
30-50	3281144
40-60	3281145
50-70	3281146
60-80	3281147
70-90	3281148



Precision saccharometers  
**in % mas/Brix/Balling**  
 Ref. temperature (Tp.): 20 °C  
**Measuring span: 30%**  
**Scale units: 1%**  
 Total length (L): 250 mm

Range % mas/Brix/Balling	Ref.- No.
0-30	3281121
30-60	3281122
60-90	3281123

Precision saccharometers  
**acc. to Brix/Balling**  
 Ref. temperature (Tp.): 20 °C  
**Measuring span: 20%**  
**Scale units: 1%**  
 Total length (L): 220 mm  
 Also available with thermometer  
 (0 to +35 °C in 1.0 °C,  
 Total length 300 mm)

Type	Range % mas/Brix/Balling	Ref.- No.
1	0-20	3281101
2	10-30	3281102
3	20-40	3281103
4	30-50	3281104
5	40-60	3281105
6	50-70	3281106
7	60-80	3281107
8	70-90	3281108

# Precision saccharometers for sugar

Precision saccharometers

**for sugar**

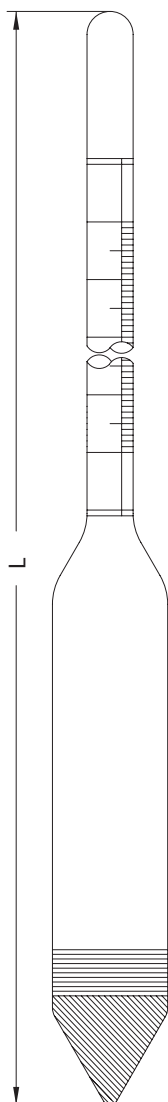
Ref. temperature (Tp.): see table

**Measuring span: 30% mas**

**Scale units: 1% mas**

Total length (L): 220 mm

Range % mas	Tp. °C	Ref.- No.
0-30	70	3302422
30-60	70	3302423
60-90	70	3302424
0-30	75	3302425
30-60	75	3302426
60-90	75	3302427
0-30	80	3302428
30-60	80	3302429
60-90	80	3302430
0-30	90	3302431
30-60	90	3302432
60-90	90	3302433



Precision saccharometers

**for sugar**

Ref. temperature (Tp.): 20 °C

**Measuring span: 26% mas**

**Scale units: 0.2% mas**

Total length (L): 290 mm

Range % mas	Tp. °C	Ref.- No.
-1 to +25	20	3302435



Precision saccharometers

**for sugar**

Ref. temperature (Tp.): 20 °C

Measuring span and scale units:  
see table

**With thermometer**

**(-5 to +35 °C in 0.5 °C)**

Total length (L): 330 mm

Range % mas	Scale % mas	Ref.- No.
-1 to +7	0.1	3302436
0-30	0.2	3302437
0-25	0.2	3302438

Precision saccharometers

**for sugar**

Ref. temperature (Tp.): 20 °C

Measuring span: see table

**Scale units: 1% mas**

**With thermometer**

**(-5 to +35 °C in 1 °C)**

Total length (L): 330 mm

Range % mas	Ref.- No.
0-75	3302440
30-80	3302441

# Precision hydrometers acc. to Twaddle

Hydrometers acc. to Twaddle  
**for liquids heavier than water**  
Ref. temperature (Tp.): 60 °F  
Measuring span: see table  
**Scale units: 1 ° Twaddle**  
Total length (L): 152 mm

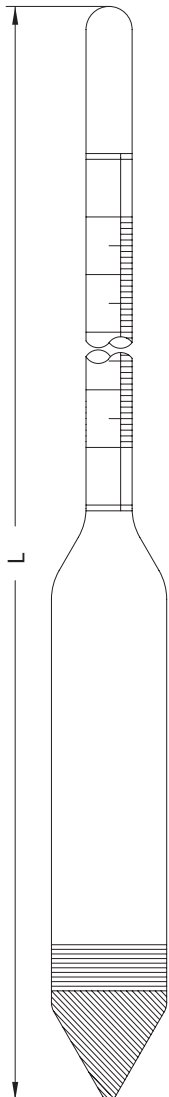
Range Twaddle	Ref.- No.
0-24	3211001
24-48	3211002
48-74	3211003
74-102	3211004
102-138	3211005
138-170	3211006
170-200	3211007

Hydrometers acc. to Twaddle  
**for liquids heavier than water**  
Ref. temperature (Tp.): 60 °F  
Measuring span: see table  
**Scale units: 0.5 ° Twaddle**  
Total length (L): 230 mm

Range Twaddle	Ref.- No.
0-24	3211021
24-48	3211022
48-74	3211023
74-102	3211024
102-138	3211025
138-170	3211026
170-200	3211027

Hydrometers acc. to Twaddle  
**for liquids heavier than water**  
Ref. temperature (Tp.): 60 °F  
Measuring span: see table  
**Scale units: 0.1 ° Twaddle**  
Total length (L): see table

Range Twaddle	Length mm	Ref.- No.
0-3	228	3211041
0-5	228	3211042
0-6	228	3211043
0-10	280	3211044
0-12	280	3211045



## For tropical climate

Hydrometers acc. to Twaddle  
**for liquids heavier than water**  
Ref. temperature (Tp.): 84 °F  
Measuring span: see table  
**Scale units: 1 ° Twaddle**  
Total length (L): 152 mm

Range Twaddle	Ref.- No.
0-24	3211011
24-48	3211012
48-74	3211013
74-102	3211014
102-138	3211015
138-170	3211016
170-200	3211017

Hydrometers acc. to Twaddle  
**for liquids heavier than water**  
Ref. temperature (Tp.): 84 °F  
Measuring span: see table  
**Scale units: 0.5 ° Twaddle**  
Total length (L): 230 mm

Range Twaddle	Ref.- No.
0-24	3211031
24-48	3211032
48-74	3211033
74-102	3211034
102-138	3211035
138-170	3211036
170-200	3211037

Hydrometers acc. to Twaddle  
**for liquids heavier than water**  
Ref. temperature (Tp.): 84 °F  
Measuring span: see table  
**Scale units: 0.1 ° Twaddle**  
Total length (L): see table

Range Twaddle	Length mm	Ref.- No.
0-3	228	3211046
0-5	228	3211047
0-6	228	3211048
0-10	280	3211049
0-12	280	3211050

# Precision hydrometers/saccharometers for breweries

Type	Range % mas	Scale (% mas)	Length (mm)	Tp. °C	Thermometer Range/Scale (°C)	Ref.- No.
Hartong malt saccharometer	1-2	0.01	400	20	+8 +26/0.2	3292041
Hartong malt saccharometer	2-3	0.01	400	20	+8 +26/0.2	3292042
Hartong malt saccharometer	3-4	0.01	400	20	+8 +26/0.2	3292043
Hartong malt saccharometer	4-5	0.01	400	20	+8 +26/0.2	3292044
Hartong malt saccharometer	5-6	0.01	400	20	+8 +26/0.2	3292045
Hartong malt saccharometer	6-7	0.01	400	20	+8 +26/0.2	3292046
Hartong malt saccharometer	7-8	0.01	400	20	+8 +26/0.2	3292047
Hartong malt saccharometer	8-9	0.01	400	20	+8 +26/0.2	3292048
Hartong malt saccharometer	9-10	0.01	400	20	+8 +26/0.2	3292049
Hartong malt saccharometer	10-11	0.01	400	20	+8 +26/0.2	3292050
Hartong malt saccharometer	11-12	0.01	400	20	+8 +26/0.2	3292051

Final attenuation saccharometer	0-3	0.05	290	20	+5 +30/0.5	3292061
Final attenuation saccharometer	3-6	0.05	290	20	+5 +30/0.5	3292062
Final attenuation saccharometer	6-9	0.05	290	20	+5 +30/0.5	3292063
Final attenuation saccharometer	9-12	0.05	290	20	+5 +30/0.5	3292064
Final attenuation saccharometer	12-15	0.05	290	20	+5 +30/0.5	3292065
Final attenuation saccharometer	15-18	0.05	290	20	+5 +30/0.5	3292066
Final attenuation saccharometer	18-21	0.05	290	20	+5 +30/0.5	3292067
Final attenuation saccharometer	21-24	0.05	290	20	+5 +30/0.5	3292068
Final attenuation saccharometer	0-3	0.05	400	20	+3 +26/0.2	3292071
Final attenuation saccharometer	3-6	0.05	400	20	+3 +26/0.2	3292072
Final attenuation saccharometer	6-9	0.05	400	20	+3 +26/0.2	3292073
Final attenuation saccharometer	9-12	0.05	400	20	+3 +26/0.2	3292074
Final attenuation saccharometer	12-15	0.05	400	20	+3 +26/0.2	3292075
Final attenuation saccharometer	15-18	0.05	400	20	+3 +26/0.2	3292076
Final attenuation saccharometer	18-21	0.05	400	20	+3 +26/0.2	3292077
Final attenuation saccharometer	21-24	0.05	400	20	+3 +26/0.2	3292078

For diet beer	-1 to +2	0.05	400	20	+3 +26/0.2	3292079
For diet beer	-1 to +1	0.05	400	20	+3 +26/0.2	3292080



# Precision hydrometers/saccharometers for breweries

## Grey colour code = suitable for official testing

Additional order no.:

...../01 officially calibrated  
without certificate

...../02 officially calibrated  
with certificate

...../03 with works certificate

...../04 with DKD  
calibration certificate



Type	Range % mas	Scale % mas	Length mm	Tp. °C	Thermometer Range/Scale (°C)	Ref.- No.
Beer mash saccharometer	0-10	0.1	380	20	+3 +26/0.2	3291041
Beer mash saccharometer	10-20	0.1	380	20	+3 +26/0.2	3291042
Beer mash saccharometer	20-30	0.1	380	20	+3 +26/0.2	3291043
Beer mash saccharometer	0-11	0.1	390	20	+3 +26/0.2	3291044
Beer mash saccharometer	0-15	0.1	440	20	+3 +26/0.2	3291045
Beer mash saccharometer	0-20	0.1	470	20	+3 +26/0.2	3291046
Beer mash saccharometer	0-24	0.1	500	20	+3 +26/0.2	3291047
Beer mash saccharometer	0.9-14.6	0.1	380	20	+3 +26/0.2	3291048
Beer mash saccharometer	10-25	0.1	380	20	+3 +26/0.2	3291049

Brewhouse saccharometer	0-5	0.1	400	20	+3 +26/0.2	3292004
Brewhouse saccharometer	5-10	0.1	400	20	+3 +26/0.2	3292005
Brewhouse saccharometer	10-15	0.1	400	20	+3 +26/0.2	3292006
Brewhouse saccharometer	15-20	0.1	400	20	+3 +26/0.2	3292007
Brewhouse saccharometer	20-25	0.1	400	20	+3 +26/0.2	3292008
Brewhouse saccharometer	25-30	0.1	400	20	+3 +26/0.2	3292009
Brewhouse saccharometer	0-30	0.2	400	20	without thermometer	3291051

Mash tun saccharometer	0-10	0.1	600	6	without thermometer	3291061
Mash tun saccharometer	10-20	0.1	600	6	without thermometer	3291062
Mash tun saccharometer	20-30	0.1	600	6	without thermometer	3291063
Mash tun saccharometer	0-10	0.1	720	6	+2 +12/0.2	3302151
Mash tun saccharometer	10-20	0.1	720	6	+2 +12/0.2	3302152

Pocket saccharometer	0-7	0.1	250	20	0 +30/1	3292011
Pocket saccharometer	7-14	0.1	250	20	0 +30/1	3292012
Pocket saccharometer	14-21	0.1	250	20	0 +30/1	3292013

Läuter saccharometer	0-5	0.5	290	70	without thermometer	3291071
Läuter saccharometer	0-10	0.5	290	70	without thermometer	3291072
Läuter saccharometer	0-18	0.5	290	70	without thermometer	3291073

Type	Range % mas	Scale g/cm <sup>3</sup>	Length mm	Tp. °C	Thermometer Range/Scale (°C)	Ref.- No.
For beer mash and beer	0.998-1.003	0.0002	400	20	+8 +26/0.2	3291081
For beer mash and beer	1.002-1.015	0.0002	400	20	+8 +26/0.2	3291082
For beer mash and beer	1.015-1.027	0.0002	400	20	+8 +26/0.2	3291083
For beer mash and beer	1.025-1.039	0.0002	400	20	+8 +26/0.2	3291084
For beer mash and beer	1.037-1.050	0.0002	400	20	+8 +26/0.2	3291085

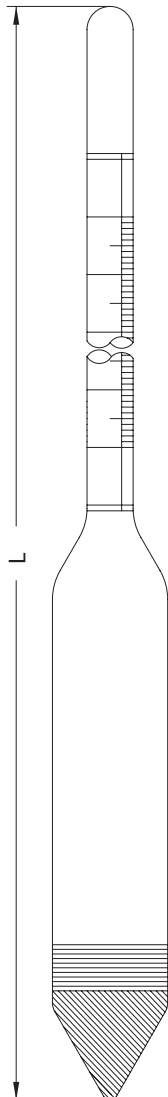
# Precision alcoholmeters class I and II

## Grey colour code = suitable for official testing

Additional order no.:

- ...../01 officially calibrated without certificate
- ...../02 officially calibrated with certificate
- ...../03 with works certificate
- ...../04 with DKD calibration certificate

Our alcoholmeters are accredited by Physikalisch-Technische Bundesanstalt (PTB). For larger pictures of the accreditation certificates see page 46 in the technical information chapter.



Precision alcoholmeters

### Class I – EG – OIML

Ref. temperature (Tp.): 20 °C

**Measuring span: 10% vol**

**Scale units: 0.1% vol**

Total length (L): 480 mm

Range % mas	Ref.- No.
0-10	3302085
10-20	3302086
20-30	3302087
30-40	3302088
35-45	3302089
40-50	3302090
50-60	3302091
60-70	3302092
70-80	3302093
80-90	3302094
90-100	3302095
95-103	3302096

Precision alcoholmeters

### Class II – EG – OIML

Ref. temperature (Tp.): 20 °C

**Measuring span: 10% vol**

**Scale units: 0.1% vol**

Total length (L): 350 mm

Range % mas	Ref.- No.
0-10	3302061
10-20	3302062
20-30	3302063
30-40	3302064
35-45	3302065
40-50	3302066
50-60	3302067
60-70	3302068
70-80	3302069
80-90	3302070
90-100	3302071
95-103	3302072



Precision alcoholmeters

### Class II – EG – OIML

Ref. temperature (Tp.): 20 °C

**Measuring span: 10% vol**

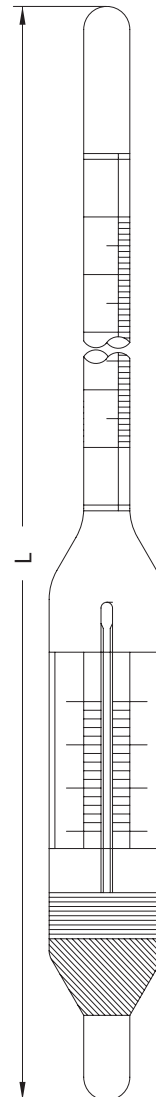
**Scale units: 0.1% vol**

**With thermometer**

**(+5 to +25 °C in 0.2 °C)**

Total length (L): 390 mm

Range % mas	Ref.- No.
0-10	3302073
10-20	3302074
20-30	3302075
30-40	3302076
35-45	3302077
40-50	3302078
50-60	3302079
60-70	3302080
70-80	3302081
80-90	3302082
90-100	3302083
95-103	3302084



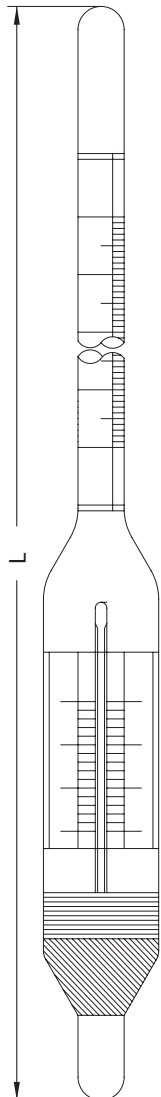
# Precision alcoholmeters class III

**Grey colour code =  
suitable for official testing**

Additional order no.:

- ...../01 officially calibrated  
without certificate
- ...../02 officially calibrated  
with certificate
- ...../03 with works certificate
- ...../04 with DKD  
calibration certificate

Our alcoholmeters are accredited by Physikalisch-Technische Bundesanstalt (PTB). For larger pictures of the accreditation certificates see page 46 in the technical information chapter.



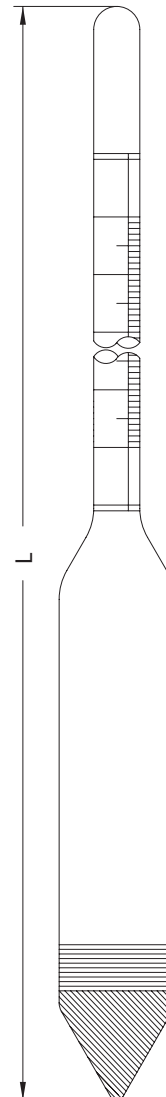
Precision alcoholmeters  
**Class III – EG – OIML**  
Ref. temperature (Tp.): 20 °C  
**Measuring span: 5% vol**  
**Scale units: 0.1% vol**  
**With thermometer**  
**(+5 to +25 °C in 0.2 °C)**  
Total length (L): 330 mm

Type	Range % mas	Ref.- No.
Vol 1	0-5	3302001
Vol 2	5-10	3302002
Vol 3	10-15	3302003
Vol 4	15-20	3302004
Vol 5	20-25	3302005
Vol 6	25-30	3302006
Vol 7	30-35	3302007
Vol 8	35-40	3302008
Vol 9	40-45	3302009
Vol 10	45-50	3302010
Vol 11	50-55	3302011
Vol 12	55-60	3302012
Vol 13	60-65	3302013
Vol 14	65-70	3302014
Vol 15	70-75	3302015
Vol 16	75-80	3302016
Vol 17	80-85	3302017
Vol 18	85-90	3302018
Vol 19	90-95	3302019
Vol 20	95-100	3302020
Vol 21	98-103	3302021



Präzisions-Alkoholometer  
**Class III – EG – OIML**  
Ref. temperature (Tp.): 20 °C  
**Measuring span: 5% vol**  
**Scale units: 0.1% vol**  
Total length (L): 330 mm

Type	Range % mas	Ref.- No.
Vol 1	0-5	3302031
Vol 2	5-10	3302032
Vol 3	10-15	3302033
Vol 4	15-20	3302034
Vol 5	20-25	3302035
Vol 6	25-30	3302036
Vol 7	30-35	3302037
Vol 8	35-40	3302038
Vol 9	40-45	3302039
Vol 10	45-50	3302040
Vol 11	50-55	3302041
Vol 12	55-60	3302042
Vol 13	60-65	3302043
Vol 14	65-70	3302044
Vol 15	70-75	3302045
Vol 16	75-80	3302046
Vol 17	80-85	3302047
Vol 18	85-90	3302048
Vol 19	90-95	3302049
Vol 20	95-100	3302050
Vol 21	98-103	3302051



# Precision alcoholmeters without thermometer

Precision alcoholmeters  
Ref. temperature (Tp.): 20 °C  
**Measuring span: 20% vol**  
**Scale units: 0.2% vol**  
Total length (L): 340 mm

Range % vol	Scale % vol	Ref.- No.
0-20	0.2	3302101
20-40	0.2	3302102
40-60	0.2	3302103
60-80	0.2	3302104
80-100	0.2	3302105

**Lutter probes**  
Ref. temperature (Tp.): 20 °C  
Measuring span, scale units and  
total length (L): see table

Range % vol	Scale % vol	L mm	Ref.- No.
0-3	0.2	180	3302211
3-6	0.2	180	3302212
6-9	0.2	180	3302213
0-3	0.1	240	3302218
3-6	0.1	240	3302219
6-9	0.1	240	3302220
6-10	0.1	240	3302221

**Distilled matter hydrometers**  
Ref. temperature (Tp.): 20 °C  
Measuring span, scale units and  
total length (L): see table

Range % vol	Scale % vol	L mm	Ref.- No.
50-100	1	250	3302140
0-100	1	250	3302141
90-100	0.1	320	3302142

**Alcoholmeters acc. to  
Gay-Lussac and Cartier  
With dual scale**  
Ref. temperature (Tp.): 15 °C  
**Measuring span: see table**  
**Scale units: 2% vol**  
Total length (L): 260 mm

Range I (% vol)	Ref.- No.	Range II (% vol)	Ref.- No.
0-100	3302131	10-45	3302131

**Alcoholmeters acc. to  
Richter and Tralles**  
Ref. temperature (Tp.): 15 °C  
**Measuring span: 100% vol**  
**Scale units: 2% vol**  
Total length (L): 260 mm

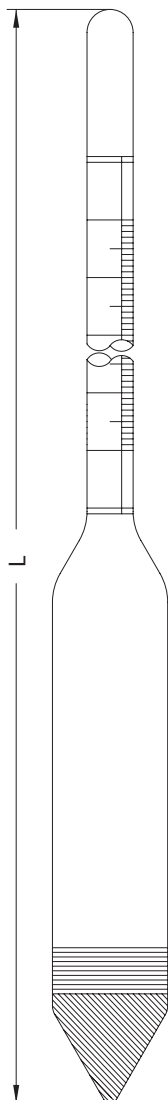
Range % vol	Ref.- No.
0-100	3312073

Common-grade alcoholmeters  
Ref. temperature (Tp.): 20 °C  
**Measuring span: 10% vol**  
**Scale units: 0.1% vol**  
Total length (L): 320 mm

Range % vol	Ref.- No.
0-10	3302165
10-20	3302166
20-30	3302167
30-40	3302168
40-50	3302169
50-60	3302270
60-70	3302271
70-80	3302272
80-90	3302273
90-100	3302274

Common-grade alcoholmeters  
Ref. temperature (Tp.): 20 °C  
**Measuring span: 100% vol**  
**Scale units: 1% vol**  
Total length (L): 250 mm

Range % vol	Ref.- No.
0-100	3402908



# Precision alcoholmeters with thermometer

## Precision alcoholmeters for absolute alcohol content Ref. temperature (Tp.): 20 °C With thermometer (0 to +30 °C in 0.2 °C)

Total length (L): 450 mm

Measuring range g/cm <sup>3</sup>	Scale g/cm <sup>3</sup>	Ref.- No.
0,782-0,802	0,0002	3302281



## Precision alcoholmeters

Ref. temperature (Tp.): 20 °C, measuring span, scale units, thermometer and total length (L): see table

Range % vol	Scale % vol	Thermometer Range/Scale (°C)	Length (L) mm	Ref.- No.
30-50	0.2	-5 +35/0.5	360	3302106
50-70	0.2	-5 +35/0.5	360	3302107
30-50	0.2	-5 +35/1	360	3302108
50-70	0.2	-5 +35/1	360	3302109
65-100	0.2	0 +30/0.5	480	3302171
10-67	0.5	0 +30/1	480	3302172
35-85	0.5	0 +30/1	480	3302173
35-85	0.5	0 +30/1	480	3302174
0-100	1	0 +30/1	480	3302175
90-100	0.1	0 +30/0.2	480	3302176

## Lutter probes

Ref. temperature (Tp.): 20 °C

Measuring span: see table

### Scale units: 0.1% vol With thermometer (+15 to +25 °C in 0.2 °C)

Total length (L): 240 mm

Range % vol	Scale % vol	L mm	Ref.- No.
0-3	0.1	180	3302214
3-6	0.1	180	3302215
6-9	0.1	180	3302216
6-10	0.1	240	3302217

## Pocket alcoholmeters

Ref. temperature (Tp.): 20 °C

Measuring span and scale units: see table

### With thermometer (-5 to +35 °C in 0.2 °C)

Total length (L): 250 mm

Range % vol	Scale % vol	Ref.- No.
0-10	0.2	3302155
0-20	0.5	3302156
20-45	0.5	3302157
40-70	0.5	3302158
70-100	0.5	3302159
0-70	1	3302160

## Alcoholmeter acc. to Gay-Lussac and Cartier With dual scale

Ref. temperature (Tp.): 15 °C

Measuring span: see table

### Scale units: 2% vol With thermometer (0 to +35 °C in 1 °C)

Total length (L): 300 mm

Range I (% vol)	Range II (% vol)	Ref.- No.
0-100	10-45	3302161

## Alcoholmeters acc. to Richter and Tralles

Ref. temperature (Tp.): 15 °C

Measuring span: 100% vol

### Scale units: 2% vol With thermometer (0 to +30 °C in 1 °C)

Total length (L): 320 mm

Range % vol	Ref.- No.
0-100	3312075

Common-grade alcoholmeters

Ref. temperature (Tp.): 20 °C

Measuring span: 10% vol

### Scale units: 0.1% vol With thermometer (0 to +30 °C in 0.5 °C)

Total length (L): 380 mm

Range % vol	Ref.- No.
0-10	3302181
10-20	3302182
20-30	3302183
30-40	3302184
40-50	3302185
50-60	3302186
60-70	3302187
70-80	3302188
80-90	3302189
90-100	3302190

Common-grade alcoholmeters

Ref. temperature (Tp.): 20 °C

Measuring span: 100% vol

### Scale units: 1% vol With thermometer (0 to +30 °C in 1 °C)

Total length (L): 340 mm

Range % vol	Ref.- No.
0-100	3402918

## Grey colour code = suitable for official testing

Additional order no.:

...../01 officially calibrated  
without certificate

...../02 officially calibrated  
with certificate

...../03 with works certificate

...../04 with DKD  
calibration certificate

# Precision hydrometers for must of fruits and grapes

## Precision hydrometers for vinification

Ref. temperature (Tp.): 20 °C  
Measuring span, scale units, thermometer and total length (L): see table

### Grey colour code = suitable for official testing

Additional order no.:

- ...../01 officially calibrated without certificate
- ...../02 officially calibrated with certificate
- ...../03 with works certificate
- ...../04 with DKD calibration certificate



## Wine scales (° Oechsle)

Type	Range ° Oechsle	Scale °Oechsle	Length mm	Thermometer Range/Scale (°C)	Ref.- No.
Wine scale acc. to Oechsle	0-30	0.2	380	-5 +35/0.5	3302451
Wine scale acc. to Oechsle	30-60	0.2	380	-5 +35/0.5	3302452
Wine scale acc. to Oechsle	60-95	0.2	380	-5 +35/0.5	3302453
Wine scale acc. to Oechsle	95-130	0.2	380	-5 +35/0.5	3302454
Wine scale acc. to Oechsle	40-90	0.5	330	-5 +35/1	3302455
Wine scale acc. to Oechsle	0-120	1	320	-5 +35/1	3311062
Wine scale acc. to Oechsle	0-130	1	320	-5 +35/1	3302457
Wine scale acc. to Oechsle	80-230	1	380	-5 +35/1	3302458
Wine scale acc. to Oechsle	0-120	1	270	without thermometer	3311461
Wine scale acc. to Oechsle	0-130	1	300	without thermometer	3302460
Wine scale acc. to Oechsle	0-120	1	270	without thermometer	3302461
Wine scale acc. to Oechsle	0-120	1	320	-5 +35/1	3302462
Wine scale acc. to Oechsle	-15 +120	1	215	without thermometer	3302463
Wine scale acc. to Oechsle	-15 +120	1	215	-5 +35/1	3302464

## Sugar hydrometers (% mas and °Oechsle)

Type	Range I Zucker % mas	Scale I ° Oechsle	Range II ° Oechsle	Scale II ° Oechsle	Length mm	Thermometer Range/Scale (°C)	Ref.- No.
Sugar hydrometers	0-30	0.5	0-130	1	320	-5 +35/1	3302562
Sugar hydrometers	0-40	0.5	0-180	2	320	-5 +35/1	3302563

## Hydrometers for the determination of extracts (g/m³)

Type	Range g/cm³	Scale g/cm³	Length mm	Thermometer Range/Scale (°C)	Ref.- No.
Determination of extracts	0.980-1.000	0.0002	380	+10 +25/0.2	3311074
Determination of extracts	1.000-1.020	0.0002	380	+10 +25/0.2	3311075
Determination of extracts	1.020-1.040	0.0002	380	+10 +25/0.2	3311076
Determination of extracts	1.040-1.060	0.0002	380	+10 +25/0.2	3311077
Determination of extracts	1.060-1.080	0.0002	380	+10 +25/0.2	3311078
Range finder	0.980-1.080	0.001	350	without thermometer	3302564
Fruit and grape juice	1.000-1.130	0.001	350	-5 +35/1	3311072
Fruit and grape juice	1.000-1.130	0.001	300	without thermometer	3311071

## Mustimeters (% vol and density)

Type	Range I g/cm³	Scale I g/cm³	Range II % vol	Scale II % vol	Length mm	Thermometer Range/Scale (°C)	Ref.- No.
Mustimeter	0.985-1.130	0.001	3-18	0.5	320	-5 +35/1	3311079
Mustimeter	0.985-1.130	0.001	3-18	0.5	320	without thermometer	3311080

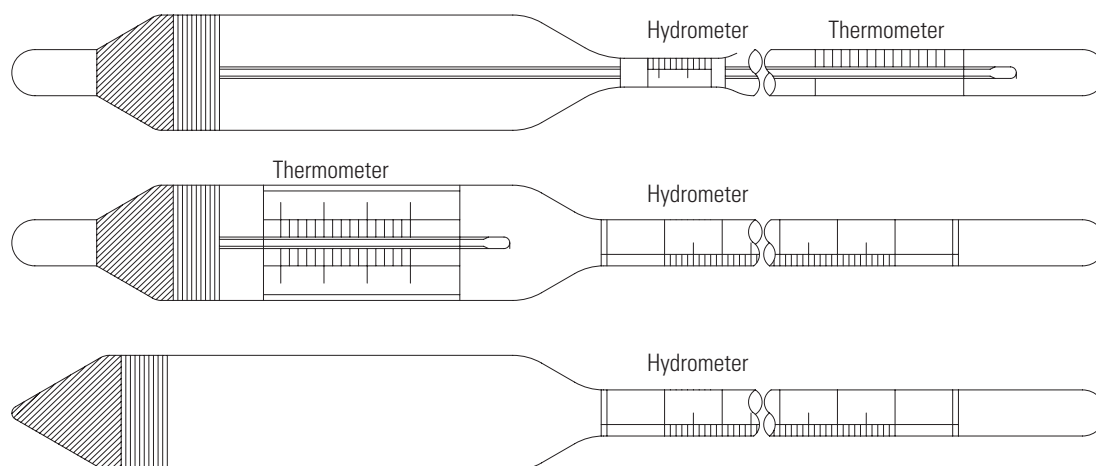
# Precision hydrometers for creameries

## Grey colour code = suitable for official testing

Additional order no.:

- ...../01 officially calibrated  
without certificate
- ...../02 officially calibrated  
with certificate
- ...../03 with works certificate
- ...../04 with DKD  
calibration certificate

Type	Range g/cm <sup>3</sup>	Scale g/cm <sup>3</sup>	Length mm	Tp. °C	Thermometer Range/Scale (°C)	Shape	Ref.- No.
<b>Acc. to DIN 10290 and DIN 10293</b>							
Acc. to DIN 10290	1.020-1.040	0.0005	300	20	+10 +30/0.5	A	3302401
Acc. to DIN 10293	1.014-1.030	0.0002	240	20	without thermometer	C	3302371
<b>Lactodensimeter</b>							
Lactodensimeter	1.000-1.100	0.001	320	15	0 +35/1	B	3302301
Lactodensimeter	1.100-1.200	0.001	320	15	0 +35/1	B	3302302
Lactodensimeter	1.020-1.035	0.0005	210	20	+10 +30/0.5	B	3302303
<b>Standard lactodensimeter</b>							
Standard lactodensimeter	1.015-1.040	0.0005	260	15	0 +35/1	B	3302311
<b>Milk tester acc. to Gerber</b>							
Milk tester acc. to Gerber	1.025-1.036	0.0005	370	15	+5 +40/1	A	3302320
Milk tester acc. to Gerber	1.020-1.040	0.0005	320	15	+10 +40/0.5	A	3302321
Milk tester acc. to Gerber	1.025-1.036	0.0005	370	20	+5 +40/1	A	3302322
Milk tester acc. to Gerber	1.020-1.040	0.0005	230	20	without thermometer	C	3302153
<b>Milk tester acc. to Quevenne</b>							
Milk tester acc. to Quevenne	1.015-1.040	0.001	210	15	without thermometer	C	3302331
Milk tester acc. to Quevenne	1.015-1.040	0.001	270	15	0 +40/1	A	3302341
<b>Pocket lactodensimeter</b>							
Pocket lactodensimeter	1.020-1.040	0.001	250	20	0 +35/1	B	3302372
<b>For yoghurt and cocoa</b>							
For yoghurt and cocoa	1.030-1.060	0.001	240	20	0 +35/1	B	3302373
<b>For condensed milk</b>							
For condensed milk	1.000-1.100	0.001	320	20	0 +35/1	B	3302381
For condensed milk	1.000-1.240	0.002	280	20	without thermometer	C	3302382
For condensed milk	1.040-1.080	0.001	280	20	without thermometer	C	3302383
<b>Milk tester acc. to Bischoff</b>							
Milk tester acc. to Bischoff	7-21.5	0.5	280	15	without thermometer	C	3302351
Milk tester acc. to Bischoff	7-21.5	0.5	300	15	0 +35/1	B	3302361



**Shape A**  
(thermometer in stem)

**Shape B**  
(thermometer in body)

**Shape C**  
(without thermometer)

# Special hydrometers in g/cm<sup>3</sup>, g/l etc.

**Grey colour code =  
suitable for official testing**

Additional order no.:

...../01 officially calibrated

without certificate

...../02 officially calibrated

with certificate

...../03 with works certificate

...../04 with DKD

calibration certificate

Type	Range g/cm <sup>3</sup>	Scale g/cm <sup>3</sup>	Length mm	Tp. °C	Thermometer Range/Scale (°C)	Ref.- No.
Soil acc. to Casagrande (DIN 18123/BS 1377)	0.995-1.030	0.0005	350	20	without thermometer	3311121
Precision seawater density hydrometer	1.000-1.007	0.0001	350	20	without thermometer	3311081
Precision seawater density hydrometer	1.006-1.013	0.0001	350	20	without thermometer	3311082
Precision seawater density hydrometer	1.012-1.019	0.0001	350	20	without thermometer	3311083
Precision seawater density hydrometer	1.018-1.025	0.0001	350	20	without thermometer	3311084
Precision seawater density hydrometer	1.024-1.031	0.0001	350	20	without thermometer	3311085
Seawater	1.000-1.035	0.001	160	20	without thermometer	3311091
Seawater	1.000-1.007	0.0001	450	20	0 +30/0.2	3311240
Seawater	1.000-1.013	0.0001	450	20	0 +30/0.2	3311242
Seawater	1.012-1.019	0.0001	450	20	0 +30/0.2	3311243
Seawater	1.018-1.025	0.0001	450	20	0 +30/0.2	3311244
Seawater	1.024-1.031	0.0001	450	20	0 +30/0.2	3311245
Seawater for aquaria	1.000-1.060	0.002	450	20	0 +40/0.2	3311033
Seawater for aquaria	1.000-1.060	0.002	450	20	without thermometer	3311034

Urine tester acc. to Vogel	1.000-1.060	0.001	150	20	without thermometer	3311211
Urine tester acc. to Vogel	1.000-1.060	0.002	90	20	without thermometer	3311212
Urine tester acc. to Vogel	1.000-1.030	0.001	90	20	without thermometer	3311213
Urine (suitable for official testing)	1.000-1.045	0.001	160	20	+10 +30/1	3311095
Urine (suitable for official testing)	1.000-1.045	0.001	160	20	without thermometer	3311096
Sulphuric acid	1.500-1.600	0.001	270	20	without thermometer	3302391
Sulphuric acid	1.800-1.850	0.001	270	20	without thermometer	3302391

Type	Range g/l	Scale g/l	Length mm	Tp. °C	Thermometer Range/Scale (°C)	Ref.- No.
Calcium mix	0-340	5	350	20	without thermometer	3311371

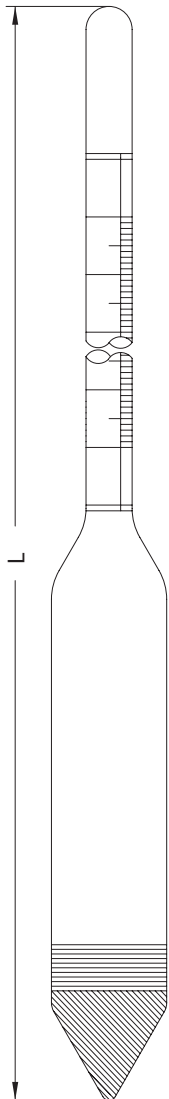
Type	Range	Scale	Length mm	Tp. °C	Thermometer Range/Scale (°C)	Ref.- No.
Salinometer	0-4/32 lbs.	0.2 lbs.	250	90	without thermometer	3311026
Salinometer	0-4/32 lbs.	0.2 lbs.	320	90	0 +110/1	3311027
Barkometer acc. to Eitner	0-120 Bé	1 Bé	270	15	without thermometer	3311028
Barkometer acc. to Eitner	0-120 Bé	1 Bé	320	15	0 +35/1	3311030
Bee food	W-T		150	80	without thermometer	3311032
Brinometer for saltwater	0-100 °	1 °	260	15	without thermometer	3311111
Brinometer for saltwater	0-27% mas	0.5% mas	260	15	without thermometer	3311112

Type	Range g/l	Scale g/l	Length mm	Tp. °F	Thermometer Range/Scale (°C)	Ref.- No.
Latexmeter	0-60	1%	250	84	without thermometer	3311031



# Special hydrometers in % mas

Type	Range % mas	Scale % mas	Length mm	Tp. °C	Thermometer	Ref.- No.
Ammonia	0-35	0.5	270	20	no	3311241
Bee food	10-60	2	160	20	no	3311250
Acetic acid	0-75	1	280	20	no	3311251
Gelatine	0-10	0.5	430	75	correction thermometer	3311361
Potash lye	0-30	0.5	270	20	no	3311271
Common salt acc. to Bischoff	0-26	0.5	270	15	no	3311281
Glue acc. to Suhr	0-56	1	400	75	correction thermometer	3311292
Glue acc. to Suhr	0-35	0.5	400	75	correction thermometer	3311293
Glue acc. to Suhr	0-20	0.5	260	75	no	3311294
Sodium hydroxide	0-10	0.2	270	20	no	3311300
Sodium hydroxide	0-27	0.5	270	20		3311301
Sodium hydroxide	25-50	0.5	270	20	no	3311302
Phosphoric acid	0-31	0.5	270	20	no	3311311
Natric acid	0-47	0.5	270	20	no	3311331
Natric acid	45-96	0.5	270	20	no	3311332
Hydrochloric acid	0-40	0.5	270	20	no	3311341
Hydrochloric acid	0-10	0.5	270	20	no	3311342
Sulphuric acid	0-45	0.5	270	20	no	3311351
Sulphuric acid	45-94	0.5	270	20	no	3311352
Hydrogen peroxid	0-30	1	150	20	no	3311221



# Special hydrometers acc. to Baumé

Type	Range ° Baumé	Scale ° Baumé	Length mm	Tp. °C	Thermometer Range/Scale (°C)	Ref.- No.
Barkometer	0-10	0.2	250	20	without thermometer	3311001
Barkometer	0-15	0.2	260	20	without thermometer	3311002
Barkometer	0-20	0.2	270	20	without thermometer	3311003
Barkometer	0-30	0.2	300	20	without thermometer	3311004
Barkometer	0-10	0.2	280	20	0 +30/1	3311005
Barkometer	0-15	0.2	300	20	0 +30/1	3311006
Barkometer	0-20	0.2	320	20	0 +30/1	3311007
Barkometer	0-30	0.2	350	20	0 +30/1	3311008
Acetic acid	0-10	0.1	260	15	without thermometer	3311009
Potash lye	0-50	1	250	15	without thermometer	3311261
Boilerwater acc. to Ammer	-1 +3	0.1	320	20	-5 +50/1	3311021
Boilerwater acc. to Ammer	-1 +1	0.1	280	20	-5 +50/1	3311022
Boilerwater acc. to Ammer	-1+2	0.1	300	20	-5 +50/1	3311023
Saltwater	0-26	0.5	300	20	-5 +35/1	3311024
Saltwater	0-26	0.5	270	20	without thermometer	3311025
Brine tester	0-25	1	230	20	without thermometer	3311011



# Hydrometers made of plastic

## Kunststoff-Aräometer

Polycarbonate

Measuring span, scale units and total length (L): see table

## Qualitätsmerkmale

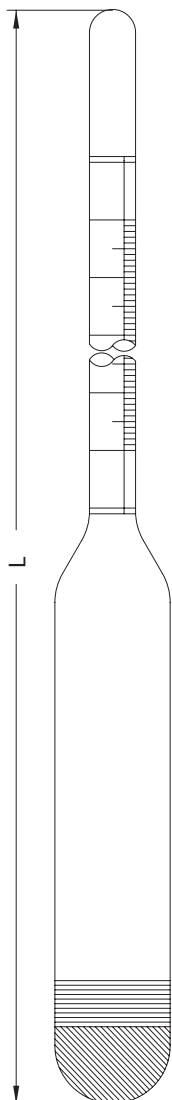
- Suited for food stuffs
- Unbreakable
- Economical

Type	Range Content	Scale Content	Length mm	Tp. °C	Ref.- No.
Salt	0-100%	1%	300	20	3002511

Type	Range % Brix	Scale % Brix	Length mm	Tp. °C	Ref.- No.
Sugar	0-35	0.5	300	20	3002523
Sugar	0-50	0.5	300	20	3002595

Type	Range g/cm <sup>3</sup>	Scale g/cm <sup>3</sup>	Length mm	Tp. °C	Ref.- No.
Cider (Oechsle)	1.000-1.130	0.001	300	20	3002596

Type	Range sp/gr	Scale sp/gr	Length mm	Tp. °F	Ref.- No.
Specific gravity	1.000-1.130	0.002	300	60/60	3002540
Specific gravity	1.200-1.420	0.002	300	60/60	3002541
Specific gravity	1.400-1.620	0.002	300	60/60	3002542



# Cardanian suspensions and cylindrical stands for hydrometers

## Cardanian suspensions

For accurate hydrometric measurement of liquids a cardan suspension is necessary to hold the instrument in equilibrium.

This suspension guarantees a 100% vertical position of the instrument even at uneven measuring places. Two strong independently moving metal rings hold the instrument, which is suspended from a stand.

- For accurate hydrometric measurements
- 100% equilibrium—even at uneven surfaces

## Reference numbers of single components

### Part Ref.-No.

Stand (h = 600 mm)	3401401
Clamp holder	3401402
Suspension Ø 38 mm	3401501
Suspension Ø 48 mm	3401502
Suspension Ø 62 mm	3401503

### Test cylinder Ø 38 mm Ref.-No.

H 200 mm/content: 150 ml	3401301
H 250 mm/content: 200 ml	3401302
H 300 mm/content: 225 ml	3401303
H 400 mm/content: 300 ml	3401304
H 500 mm/content: 375 ml	3401305

### Test cylinder Ø 48 mm Ref.-No.

H 200 mm/content: 225 ml	3401311
H 250 mm/content: 300 ml	3401312
H 300 mm/content: 350 ml	3401313
H 400 mm/content: 475 ml	3401314
H 500 mm/content: 600 ml	3401315

### Test cylinder Ø 62 mm Ref.-No.

H 200 mm/content: 400 ml	3401321
H 250 mm/content: 500 ml	3401322
H 300 mm/content: 600 ml	3401323
H 400 mm/content: 800 ml	3401324
H 500 mm/content: 1000 ml	3401325

## Cylindrical stands for hydrometers acc. to DIN 12680 made of glass

According to DIN 12791 cylinders in different sizes with stand and spout are recommended for hydrometric measurements.

The following cylinders without graduation are favourably priced.

Cylindrical stand			Ref.-
Height	Ø	Content No.	
200 mm	40 mm	150 ml	4401000
200 mm	60 mm	375 ml	4401010
300 mm	40 mm	250 ml	4401030
400 mm	40 mm	500 ml	4401040
500 mm	50 mm	650 ml	4401050

## Reference numbers of complete cardanian suspension system

including content of test cylinder

Test cylinder (height)	Ref.-No.		Ref.-No.		Ref.-No.
	Ø 38 mm	Ø 48 mm	Ø 62 mm	No.	
200 mm	150 ml	3401201	225 ml	3401211	400 ml 3401221
250 mm	250 ml	3401202	300 ml	3401212	500 ml 3401222
300 mm	225 ml	3401203	350 ml	3401213	600 ml 3401223
400 mm	300 ml	3401204	475 ml	3401214	800 ml 3401224
500 mm	375 ml	3401205	600 ml	3401215	1000 ml 3401225

# Hydrometers for testing accumulators and anti-freeze testers

## Hydrometers for measuring acids in accumulators

Hydrometers for testing accumulators are used to measure the acid contents in accumulators and batteries.

These reliable and precise instruments are widely used at gasoline stations and garages.

Type	Range g/ml	Scale g/ml	Scale length mm	Length mm	Thermometer °C	Suction volume cm <sup>3</sup>	Colour marks	Cylinder	Ref.-No.
2	1.10-1.30	0.02	25	205	—	6	—	plastic	3401041
3	1.10-1.30	0.01	35	255	—	18	3	plastic	3401001
4	1.10-1.30	0.02	26	230	—	18	3	plastic	3401011
5	1.08-1.30	0.005	70	328	—	38	—	glass	3401021
6	1.10-1.30	0.005	70	328	0 +60	37	—	glass	3401031



## Precision anti-freeze tester with hydrometer

Precision anti-freeze testers are used to test anti-freeze mixtures in radiators of cars and similar systems. These reliable and precise instruments are widely used at gasoline stations, garages and in lubricant production.

The total length amounts to 360 mm.

- High accuracy
- High durability, reliability and lifetime
- Independent of the temperature of the lubricant to be measured
- Detailed user manual included

Product	Ref.-No.
Complete instrument	3401000
Spare hydrometer	3401010
Spare glass tube	3401020



## Special anti-freeze tester with pointer indication (Type B)

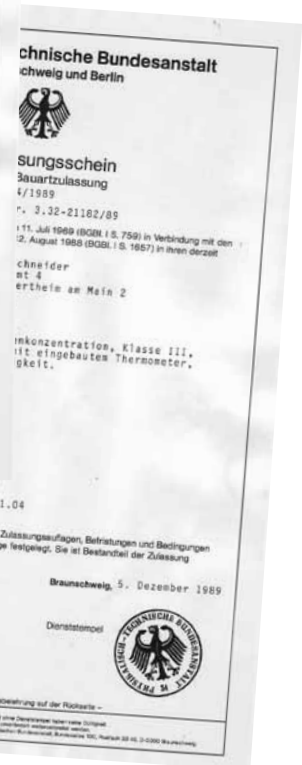
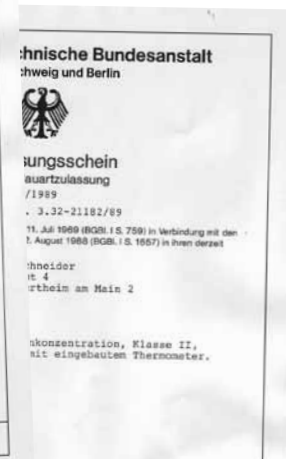
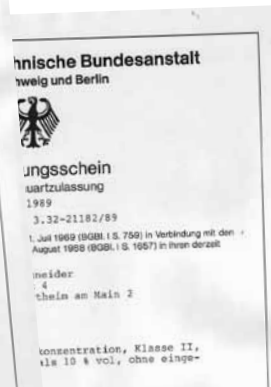
Quick-reading instrument for gasoline stations and garages.

- Compact shape
- Quick reading
- Accurate indication at every coolant temperature
- Robust plastic casing
- Suitable for all ethylenglycol coolants
- Detailed user manual included

Specifications Type	Hose length mm	Range °C	Scale °C	Suction volume cm <sup>3</sup>	Ref.-No.
B1 Standard type for ethylenglycol	200	-40 to -5	5	52	3401030
B2 Rugged type for ethylenglycol	400	-40 to -5	5	52	3401040
B3 for propylenglycol	200	-40 to -5	5	52	3401050



# Technical details Certificates for alcoholmeters

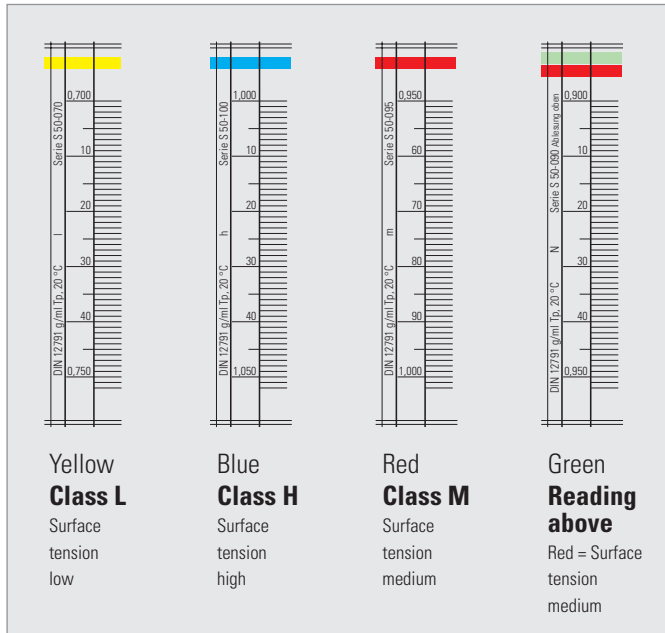


## Accreditation certificates for alcoholmeters class I, II and III

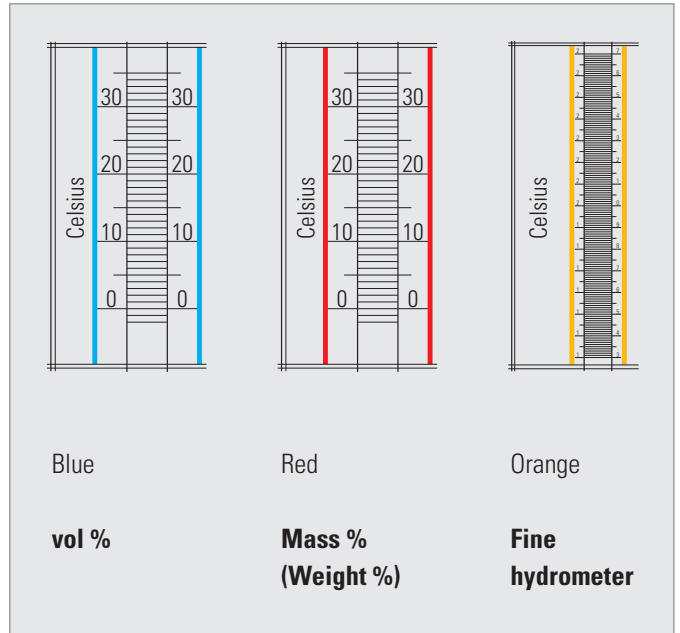
Ludwig Schneider GmbH & Co. KG has accredited the alcoholmeters of class I, II and III by the Physikalisch Technische Bundesanstalt (PTB).

# Technical details

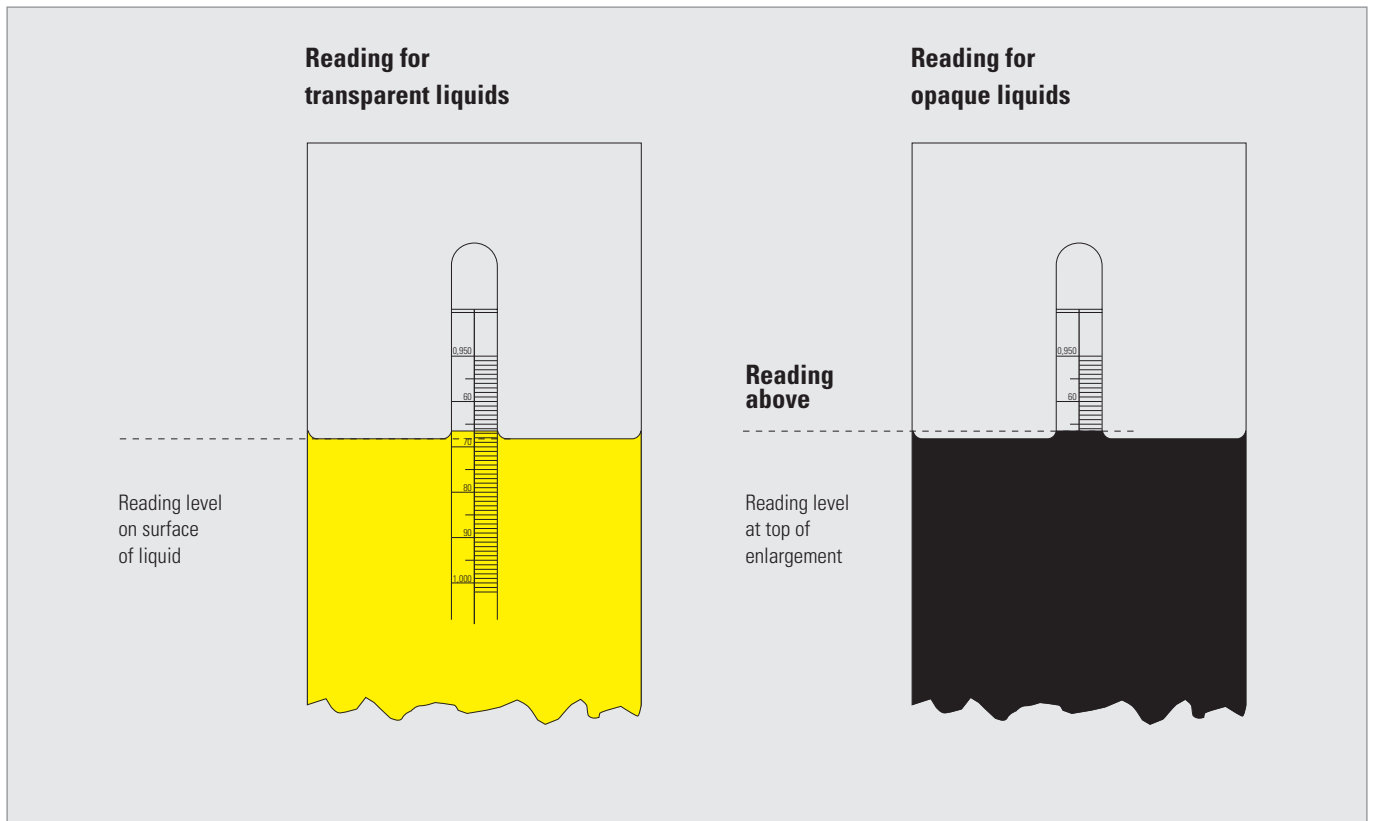
## Hydrometer colour codes for surfaces tension classes acc. to DIN 12790, DIN 12791 and ISO/R649



## Lateral colour codes of thermometer scales according to hydrometer marking



## Scale reading for liquids of different transparency



# Product summary

- Catalogue 1 **Engine Thermometers**
- Catalogue 2 **General Purpose Thermometers**
- Catalogue 3/4 **Precision Laboratory Thermometers and Sets, Ground Joint Thermometers**
- Catalogue 5 **Precision Thermometers for Meteorology**
- Catalogue 6 **Precision Thermometers for Mineral Oil Testing**
- Catalogue 7 **Precision Contact Thermometers**
- Catalogue 8 **Thermometers for Special Applications**
- Catalogue 9 **Precision Hydrometers and Refractometers**
- Catalogue 10 **Dial Thermometers**
- Catalogue 11 **Systems for Measuring and Calibration**
- Catalogue 12 **Resistance Thermometers and Thermocouples**
- Catalogue 13 **Cable Thermo Sensors**

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