

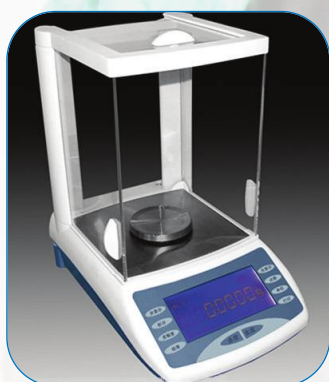
BALANCES, MICROSCOPES, AND MELTING POINT



ANTIVIBRATION BALANCE TABLE



MELTING POINT APPARATUS



PRECISE BALANCES



LIGHT SOURCE



MICROSCOPES

Precise balances

Balance accessories and precision weights

Stereomicroscopes

Microscopes

Microcameras and polarimeter

Refractometers

Melting point apparatus

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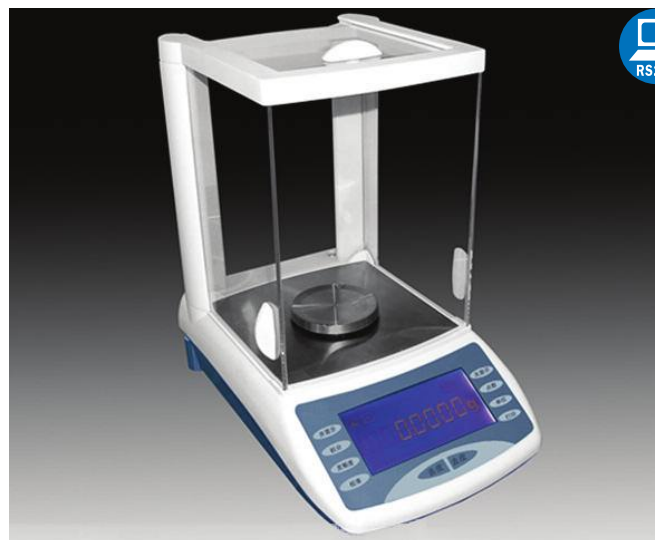
*"One researcher shines for his questions, not for his answers."
Duque de Levis*

COMECTA Precise analytical balance “FA-2204B”

COMECTA

FEATURES

Digital 7 segment screen.
 Time to stability: 8 seconds.
 Adjustable time and sensitivity control.
 ON/OFF automatic zero adjustment.
 Manual external 220g calibration.
 Tare range by subtraction up to the maximum capacity.
 Piece counting function.
 Density measurement in the base of the unit.
 Units of measurement in g, ct, and oz.
 Level adjustment (bubble).
 Data interface: RS-232 for connection to a printer.
 Operable ambient temperature 5 to 40 °C
 Power supply: 110/220 V-50/60Hz.
 Supplied complete with cover.



MODELS	Part No.	Maximum weight capacity g	Precision ±g	Linearity ±g	Height / Width / Depth (exterior) cm	Height / Width / Depth (Draft shield) cm	Ø plate cm	Weight Kg
FA-2204B	5830039	220	0.0001	0.0002	35 21 34	24 19 17.5	8	8.5

COMECTA Electronic Balance “Laborcom”

COMECTA

COMMON FEATURES

Easy to read seven segments display.
 Stabilization time: 3 seconds.
 ON/OFF. Automatic Zero adjustment
 External automatic calibration.

Tare range by subtraction up to maximum capacity.

Piece counting function. Overload indicator.

Operating temperature: from 5 to 35 °C.

Voltage: 220 V ±10 V / 50 Hz.

MODELS	Part No.	Maximum weight capacity g	Precision ±g	Height / Width / Depth (exterior) cm	Ø plate cm	Weight Kg
LABORCOM 110-L	5830025	110	0.01	7 17.5 24	12.5	1.6
LABORCOM 210-L	5830026	210	0.02	7 17.5 24	12.5	1.6
LABORCOM 600-L	5830031	600	0.1	7 17.5 24	12.5	1.6
LABORCOM 1100-L	5830032	1100	0.1	7 17.5 24	12.5	1.6
LABORCOM 2100-L	5830033	2000	0.1	7 17.5 24	12.5	1.6
LABORCOM 11000-L	5830027	11000	1	7 17.5 24	16.5 x 16.5	1.8



COMECTA Shaking monitor for blood collection “HEDO2”

FOR BLOOD COLLECTION PROCESSES IN BAGS

FEATURES

HEDO2 is a digital blood collection monitor, created to control and monitoring blood collection processes. It has been designed to perform simple, precise and accurate operations.

It is composed of:

Easily removable tray.

Wired or wireless interface networking.

Automatic clamp closing at the end of the donation.

Automatic tare calculation.

Real time monitoring of the donation showed on the digital display.

Stand alone mode (operating with rechargeable battery). 8 hours life.

Sensor to detect the tube presence.

Power supply: 110/220 V-50/60Hz.

MODEL

Part No.	Max weight Capacity g	Precision g	Resolution g	Height / Width / Depth (external) cm	Power W	Weight Kg
5010000	999	± 3	1	19 32 32	60	5

It is supplied with a transport suitcase.



ACCESSORIES

Barcode reader Hedo-2. Part No. 5010003

Alarm lamp pool Hedo-2. Part No. 5010004



WEIGHING DISHES “ACCU-WEIGH”

Anti static. Reproducible tare weighing. Contamination free. Large selection of sizes.

Common features:

Made from high density polystyrene with flat base, round edge, contamination free surface and hydrophilic. Flexible in form for easy manipulation of the sample either liquid or solid.

Manufactured in two forms:

- Diamond form, colours white and black.
- Square form, colour white.

Part No.	Form	Capacity	Height / Width / Depth	Weight	Colour
5726004	Diamond	5	3.8 31 54	0.25	White
5726005	Diamond	5	3.8 31 54	0.25	Black
5726006	Diamond	30	13.5 55 85	1.00	White
5726007	Diamond	30	13.5 55 85	1.00	Black
5726008	Diamond	100	20 92 132	2.6	White
5726009	Diamond	100	20 92 132	2.6	Black
5726010	Square	7	8.5 44 44	0.65	White
5726011	Square	100	24 80 80	2.2	White
5726012	Square	250	24 134 134	6.1	White

Comes in packets of 100 units.



ALUMINIUM WEIGHING BOATS

Static free, pressed dishes with rolled edge.

Withstands temperatures up to 450 °C.

Due to their form the dishes can be used one on top of another to protect samples. Suitable for testing, solid samples and mixtures of emulsions for moisture content, by differential weight loss method.

Useful for weighing, comparing, freezing or evaporation.

Consumable, single use.

Part No.	Thickness mm	Height / Ø (usable) mm	Comes in
5726000	0.2	5 42	packets of 112 units
5726001	0.2	10 57	packets of 110 units



ANTIVIBRATION BALANCE TABLE

Formica covered metal table with central polished granite plate to support the balance, mounted on silent blocks.

Adjustable shock device. Maximum weight 40 Kg.

Part No.	Height / Width / Depth (exterior) cm	Height / Depth (balance support) cm	Weight Kg
5838101	80 90 70	45 39	70



BALANCE DENSITY MEASUREMENT “PR-SE” (PATENTED)

Applications: System for reading the density of liquids using the immersion of a glass sinker of known volume. Can be used for opaque and viscous liquids for all classes of liquid.

Features: Made of borosilicate glass of low dilatation coefficient and a constant volume.

Mode of operation:

- Locate the tube with liquid on an electronic balance.
- Push the TARE to achieve a zero stable reading
- Introduce and submerge the measuring suspended sinker centrally without tilting the tube, keep suspended.

At this moment the screen will indicate the DIFFERENTIAL WEIGHT, that is exactly the same as the density of the liquids multiplied by 10.

To obtain a density value in mS, it is necessary to have a balance with a minimum resolution of 0.01 g.

Part No.	Density interval g/ml	Maximum tolerance error g/ml	Temperature assay/reference °C
5600000	0.600 - 2.000	±0.0005	20 / 20

Calibrated precision weights class E2 and F1. Certification W.E.C.C. (Western European Calibration Co-operation)

COMMON FEATURES

In the manufacturing of these weights the meteorological requirements are applied to conform with the OIML verification for accuracy, raw material, geometric form, identification and conservation. To guarantee their accuracy, the individual weights are supplied in a partitioned wooden case with a clasp lid and a small tray housing for locating the mg weights. The wooden boxes are lined with velvet for the g and Kg weights.

Weight	Part No. Weight Class E2	Part No. Certificate E2	Tolerance Max. error ± mg	Part No. Weight Class F1	Part No. Certificate F1	Tolerance Max. error ± mg
1 mg	5838102	5838124	0.006	5838146	5838169	0.020
2 mg	5838103	5838125	0.006	5838147	5838170	0.020
5 mg	5838104	5838126	0.006	5838148	5838171	0.020
10 mg	5838105	5838127	0.008	5838150	5838172	0.025
20 mg	5838106	5838128	0.010	5838151	5838173	0.03
50 mg	5838107	5838129	0.012	5838152	5838174	0.04
100 mg	5838108	5838130	0.015	5838153	5838175	0.05
200 mg	5838109	5838131	0.020	5838154	5838176	0.06
500 mg	5838110	5838132	0.025	5838155	5838177	0.08
1 g	5838111	5838133	0.030	5838156	5838178	0.10
2 g	5838112	5838134	0.040	5838157	5838179	0.12
5 g	5838113	5838135	0.050	5838158	5838180	0.15
10 g	5838114	5838136	0.060	5838159	5838181	0.20
20 g	5838115	5838137	0.080	5838160	5838182	0.25
50 g	5838116	5838138	0.10	5838161	5838183	0.30
100 g	5838117	5838139	0.15	5838162	5838184	0.5
200 g	5838118	5838140	0.30	5838163	5838185	1
500 g	5838119	5838141	0.75	5838164	5838186	2.5
1 Kg	5838120	5838142	1.5	5838165	5838187	5
2 Kg	5838121	5838143	3.0	5838166	5838188	10
5 Kg	5838122	5838144	7.5	5838167	5838189	25
10 Kg	5838123	5838145	15	5838168	5838190	50

Weight material

From 1 to 5 mg = aluminium, density approx. 2.7 g/cm³.

From 10 to 500 mg = alpaca, density 8.6 g/cm³.

From g and Kg = antimagnetic polished stainless steel, density approx. 8.0 g/cm³, Without adjustable chamber E2 and with adjustable chamber F1. The calibration certificate is expedited by DKD (member of the W.E.C.C.), which contains the determination and deviation between the nominal mass values, the actual measured value and the tolerance measurement.



SET OF STANDARD WEIGHTS WITH BOX AND MATCHING CERTIFICATE

Set of weights E2 of 1 mg to 500 mg Part No. **5831822**

Set of weights F1 of 1 mg to 500 mg Part No. **5832822**

Material: Wooden box (E2), or resin box (F1), with clasp, tweezers and a small brush.

Weight details: 1 mg, 2 mg, 2 mg, 5 mg, 10 mg, 20 mg, 20 mg, 50 mg, 100 mg, 200 mg, 200 mg and 500 mg. Total 12 weights = 1.11 g

Certificate for set of weights E2 of 1 mg to 500 mg Part No. **5862350**

Certificate for set of weights F1 of 1 mg to 500 mg Part No. **5862450**

Set of weights E2 of 1 mg to 50 g Part No. **5831302**

Set of weights F1 of 1 mg to 50 g Part No. **5832302**

Material: Wooden box with clasp, lined with velvet, a special glove, housing for extractable fractional weights, tweezers and a small brush.

Weight details: 1 mg, 2 mg, 2 mg, 5 mg, 10 mg, 20 mg, 20 mg, 50 mg, 100 mg, 200 mg, 200 mg, 500 mg, 1 g, 2 g, 2 g, 5 g, 10 g, 20 g, 20 g y 50 g

Total 20 weights = 111.11 g

Certificate for set of weights E2 of 1 mg to 50 g Part No. **5862301**

Certificate for set of weights F1 of 1 mg to 50 g Part No. **5862401**

Set of weights E2 of 1 mg to 100 g Part No. **5831303**

Set of weights F1 of 1 mg to 100 g Part No. **5832303**

Material: Wooden box with clasp, lined with velvet, a special glove, housing for extractable fractional weights, tweezers and a small brush.

Weight details: 1 mg, 2 mg, 2 mg, 5 mg, 10 mg, 20 mg, 20 mg, 50 mg, 100 mg, 200 mg, 200 mg, 500 mg, 1 g, 2 g, 2 g, 5 g, 10 g, 20 g, 20 g, 50 g and 100 g

Total 21 weights = 211.11 g

Certificate for set of weights E2 of 1 mg to 100 g Part No. **5862302**

Certificate for set of weights F1 of 1 mg to 100 g Part No. **5862402**

Set of weights E2 of 1 mg to 200 g Part No. **5831304**

Set of weights F1 of 1 mg to 200 g Part No. **5832304**

Material: Wooden box with clasp, lined with velvet, a special glove, housing for extractable fractional weights, tweezers and a small brush.

Weight details: 1 mg, 2 mg, 2 mg, 5 mg, 10 mg, 20 mg, 20 mg, 50 mg, 100 mg, 200 mg, 200 mg, 500 mg, 1 g, 2 g, 2 g, 5 g, 10 g, 20 g, 20 g, 50 g, 100 g, 200 g y 200 g

Total 23 weights = 611.11 g

Certificate for set of weights E2 of 1 mg to 200 g Part No. **5862303**

Certificate for set of weights F1 of 1 mg to 200 g Part No. **5862403**

COMECTA Stereomicroscope "XTX-3C LED and ZTX-20 LED"



Model XTX-3C LED.



Model ZTX-20 LED.

APPLICATIONS

By design and quality optics, these microscopes are recommended especially for long duration work. Ideally suited for biology, botany, archaeology, geology, teaching and electronics.

COMMON FEATURES

Three dimensional optical resolution, wide field of view without side aberrations, excellent crisp contrast and true colour.

Rechargeable battery 3x1800Ah and external charger.

Binocular head inclined at 45° with adjustable interpupillary distance from 55 to 75 mm.

Rotating head of 360° with easy access for large items.

Dioptic correction in the left eyepiece of ± 5 dp.

Ocular head held with secure fixing screws.

Rubber eyecups.

Pair of eyepieces, wide field of view WF 10x (23 mm \emptyset). In the model ZTX-3C.

Pair of eyepieces, wide field of view WF 20x (20 mm \emptyset). In the model ZTX-20.

Objectives of 2 x and 4 x, located in a double objectives support turret with rotation in both directions.

Double focus: by means of a vertical slip clutch of the head up and down a column, with fine adjustment using a bilateral macrometer with rack and pinion tension and control.

Solid base consisting of a platform with double contrast (black and white) circular plate and translucent etched light diffuser, with fixing screw and holding clips.

Model XTX-3C LED: System with double illumination of low voltage 12 V/10 W, with incident light (episcopic) in the head and transmitted (diascopic) in the circular platform.

Model ZTX-20 LED: system with triple illumination of low voltage, with incident light (episcopic) in the head and transmitted (diascopic) in the circular platform, Activated individually or simultaneously, with controllable intensity. Also the incident light incorporates a condenser lens with an extractable blue filter.

Dimensions: XTX-3C LED: 270 high x 117 wide x 190 mm deep.

Dimensions: ZTX-20 LED: 350 high x 320 wide x 190 mm deep.

Stereomicroscope model XTX-3C LED.

Part No. **5313113**

Stereomicroscope model ZTX-20 LED.

Part No. **5313090**

ACCESSORIES

Eyepiece with wide field of view WF 5x (single).

Part No. **5313091**

Eyepiece with wide field of view WF 10x (single).

Part No. **5313092**

Eyepiece with wide field of view WF 15x (single).

Part No. **5313093**

Eyepiece with wide field of view WF 20x (single).

Part No. **5313094**

Wooden box with handle and lock.

Part No. **5313022**

Ocular with scale 10/100 mm (each unit).

Part No. **5313095**

SPARES

Set of LED lamps (for XTX-3C LED).

Part No. **5313013**

Set of LED lamps (for ZTX-20 LED).

Part No. **5313015**

MODELS	Part No.	Objectives	Eyepieces	Magnification	\emptyset Field of view mm	Working Distance mm	Illumination	Weight kg
XTX-3C LED	5313113	2x	WF-10x	20x	10.0	57	Transmitted or incident	2.8
		4x		40x	5.0			
ZTX-20 LED	5313090	2x	WF-20x	40x	5	40	Transmitted or incident independent or simultaneous	3.6
		4x		80x	2.5			

Comes complete with key for tightening the axis tension, spare lamp and plastic dust cover.

COMECTA Stereomicroscopes with Zoom "SQF-L LED, SQF-D LED and SQF-E LED" OPTIC ivymen[®] SYSTEM



Model SQF-L LED.



Model SQF-D LED with Supplementary objective 2x.

APPLICATIONS

By design and quality optics, these microscopes are recommended especially for long duration work. Ideally suited for biology, botany, archaeology, geology, teaching and electronics.

COMMON FEATURES

Variable magnification using a continuous zoom control, with control knobs on either side to enable parfocal centralised focus.

Three dimensional optical resolution, wide field of view without side aberrations, excellent crisp contrast and true colour.

Optics are protected against knocks.

Binocular or Trinocular head (Model dependent), inclined at 45°.

Adjustable interpupillary distance from 54 to 75 mm.

Rotating head of 360° with easy access for large items.

Dioptric correction of ±5 dp in both eyepieces.

Ocular head fixed with secure screws.

Rubber eyecups.

Pair of eyepieces wide field of view **WF20x** (12 Ø) or **WF10x** (22 Ø) model dependent.

Macrometric focus: by means of a vertical slip clutch with a fine adjustment using rack and pinion tension control.

Solid base consisting of a platform with double contrast (black and white) circular plates and translucent etched light diffuser, with fixing screw and holding clips.

Triple illumination LED system, low voltage with incident light (episcopic) in the head and transmitted (diascopic) in the circular platform: activated individually or simultaneously, with controllable intensity.

Model SQF-E LED trinocular

Same characteristics to the SQF-D LED model, except that the head is trinocular and it is supplied with a photography adapter and eyepiece WF 10x with an adjustable focus visor. The photographic eyepiece and camera with support T2 PK and trigger cable have to be ordered as accessories.

ACCESSORIES

Supplementary objective 0.5x. SQF-L	Part No. 5313096
Supplementary objective 0.75x. SQF-L	Part No. 5313097
Supplementary objective 1.5x. SQF-L	Part No. 5313098
Supplementary objective 2x. SQF-L	Part No. 5313099
Eyepiece with wide field of view HWF 10x (single).SQF-D & E	Part No. 5313081
Eyepiece with wide field of view HWF 15x (single).SQF-D & E	Part No. 5313082
Eyepiece with wide field of view HWF 20x (single).SQF-D & E	Part No. 5313083
Video camera for eyepiece (See page 273)	Part No. 5435030
Adapter CCD of 0.5x suitable for a video camera.	Part No. 5313089
Eyepiece WF10x with grid (single). (Model SQF-D and E)	Part No. 5313084
Wooden case with handle and lock.	Part No. 5313016

SPARES

Set of LED lamps SQF-L	Part No. 5313015
LED lamp 3 W SQF-D LED and SQF-E LED (transmitted).	Part No. 5313044
LED lamp 3 W SQF-D LED and SQF-E LED (incident).	Part No. 5313045

Technical table with the different magnifications, working distance and Ø of the field of view resulting in the configuration of the diverse eyepieces and supplementary objectives available.

MODELS	Part No.	Head	Zoom Range	Eyepieces	Standard magnification	Ø Field of view mm	Working distance mm	Illumination system	Weight kg
SQF-L LED	5313311	Binocular	1x - 4x	10x	1x - 4x	26 - 5.8	90	Transmitted	5.5
SQF-D LED	5313309	Binocular	0.67x - 4.5x	20x	13.4x - 90x	17.9 - 2.7	105	or incident or both	6.1
SQF-E LED	5313308	Trinocular	0.67x - 4.5x	20x	13.4x - 90x	17.9 - 2.7	105	simultaneously	6.4

Comes with a dust cover.

COMECTA Microscope Monocular "M-100 FL LED"

APPLICATIONS

Directed at the requirements of higher education, universities and suitable for: veterinary, dentistry, biology, industry, etc.

FEATURES

Monocular head inclined angle 45° and rotatable through 360°.

Eyepiece, with wide field of view WF 10x (18 Ø) fixed in position using secure screw.

Objectives, parfocal DIN 45 mm **achromatic bright-field** of 4x (A.N. 0.10), 10x (A.N. 0.25) and 40x retractable (A.N. 0.65).

Total magnification: 40x, 100x and 400x.

Revolving triple objectives turret, rotation in either direction with a fixed axis stop locator.

Focus, vertical slip clutch, bilateral **micrometer** adjustment of 0.002 mm, separate **macrometer** with adjustable tension. Safety fixing screw for tension adjustment and end of focus limit stop.

Stage with spring clip slide holder of 110 x 126 mm.

Condenser, fixed lens and aperture (A.N. 0.65), with diaphragm disk of 5 apertures.

Illumination, transmitted light (diascopic), LED 0.5 W, with collimator lens and blue filter for chromatic corrections.

Robust construction, with power switch and illuminator built into the base.

Dimensions: 360 height x 130 width x 175 mm depth.

Weight 2.8 kg.

Supplied complete with key to adjust the tension of the slip clutch and cover.

Microscope monocular M-100 FL LED (400x).

Part No. **5313119**

ACCESSORIES

Eyepiece Widefield WF-15x with cross hairs (Pointer).

Part No. **5313076**

Eyepiece Widefield WF-20x with reticule.

Part No. **5313077**

Condenser ABBE 1.25 A.N. with filter and iris diaphragm.

Part No. **5313003**

Graduated mechanical stage.

Part No. **5435030**

Video Micro-camera, 3.1 MP:-

- **with connection USB** for direct connection to a PC, including software.

Part No. **5435034**

Wooden case with carry handle and lock.

Part No. **5313022**

SPARE

LED lamp 0.5 W.

Part No. **5313028**



ACCESSORY

Set of polarisers with circular graduated base and filter.

Part No. **5313075**

COMECTA Microscope Binocular "701 LED"

FEATURES

Binocular head with 45° tilt and full 360° rotation.

Interpupillary distance: 52 to 72 mm.

Dioptric adjustment of ±5 dp in both eyepieces, sharpness compensation for visual differences.

Pair of eyepieces DIN standard **WF10x** (18 mm Ø) and **WF16x** (11 mm Ø).

Objectives DIN standard, achromatic, brightfield of 4x (A.N. 0.10), 10x (A.N. 0.25), 40x (A.N. 0.65) retractable and 100x (A.N. 1.25) immersion oil and retractable. Colour coded objectives for easy identification.

Total magnification: 1600x.

Four position objectives turret rotating in both directions with stop locator when it is in the correct position.

Large sub stage 135x145 mm, variable height with a rack and pinion mechanism with bilateral coaxial control. **Micrometer** adjustable stage graduated to 0.002 mm and **macrometer** adjustment tension, Movement up to 30 mm.

Safety stop with pre-set adjustable safety level.

Adjustable slide holder, with 0.1 mm scale with a smooth X-Y 40 mm longitudinal and 80 mm transversal

movement.

Condenser Abbe of 1.25 A.N. with diaphragm iris and exchangeable filters. Rack and pinion height, adjustable.

Illumination transmitted (diascopic), with removable condenser lens and pre-centred lamp LED 3W, with variable intensity control. Suitable for use with an external light source using a plan or concave reflector mirror. **Robust construction** that incorporates the illumination source and mains switch in the base.

Size: height 370 x width 200 x depth 225 mm.

Weight 6 Kg.

Supplied complete with blue set filters, matt glass filter, fuse, oil, dust cover.

Power supply: 110/220 V-50/60Hz.

Microscope Binocular 701 LED. Part No. **5313111**



ACCESSORIES

Eyepiece with wide angle lens WF-5x (single).

Part No. **5313034**

Eyepiece with wide angle lens WF-15x (single).

Part No. **5313004**

Eyepiece with wide angle WF-10x with reticule (single).

Part No. **5313035**

Eyepiece with wide angle WF-10x with pointer (single).

Part No. **5313007**

Video camera for eyepiece (see page. 273)

Part No. **5435030**

SPARE

LED lamp 3 W.

Part No. **5313027**

COMECTA Polarising Binocular Microscope 206 LED



APPLICATIONS

Wide range of applications, includes bright-field, dark-field, polarization and phase contrast. Ideal for universities, clinics, biology, bacteriology, agriculture and industry.

FEATURES

Binocular head inclined 30° rotatable through 360°.

Adjustable interpupillary distance of 55 to 75 mm.

Diopter adjustment of ± 5 dp. in the right eyepiece, compensation for any differences in sharpness.

Paired eyepieces DIN, wide field of view WF10x (18 \emptyset) and a pair of WF16x (\emptyset).

Objectives DIN, achromatic brightfield of 4x (A.N. 0.10), 10x (A.N. 0.25), 40x (A.N. 0.65) retractable and 100x (A.N.1.25) oil immersion retractable; colour coded for rapid identification.

Total magnification: 1600x

Quadruple revolving objectives turret, rotates in both directions with notched location positions.

Large stage of 160 x 140 mm, height adjustable by mechanical rack and pinion bilateral coaxial focus; 0.002 mm graduated **micrometer** and **macrometer** with adjustable tension (distance 30 mm).

Pre-adjusted, Safety stop limit.

Mechanical stage, (slide holder), graduated scale of 0.1 mm, adjustable in both (x-y) using a smooth rack and pinion movement of 50 mm **longitudinal** and 70 mm transversal.

Condenser Abbe of 1.25 A.N. with iris diaphragm and replaceable filters.

Adjustable height by rack and pinion.

Illumination: transmitted (diascopic), with removable condenser lens and LED 3 W lighting with regulable intensity.

Strong and robust, illuminator incorporated into the base.

Set of simple polarisers: controllable analysis polariser.



Set of simple polarisers.

Comes complete with a set of blue, green and yellow filters, set of simple polarisers, lamp, 2 spare fuses, bottle of immersion oil and plastic cover

SPARE

3W LED lamp. Part No. **5313046**

ACCESSORIES

Eyepiece with wide angle lens WF-5x (single) Part No. **5313034**

Eyepiece with wide angle lens WF-15x (single) Part No. **5313004**

Eyepiece with wide angle lens WF-10x with reticule (single) Part No. **5313035**

Eyepiece with wide angle lens WF-10x with pointer (single) Part No. **5313007**

Complete kit for phase contrast, made of: Objectives DIN plan negative phase contrast: 10x (A.N. 0.25), 40x (A.N. 0.65) and 100x (A.N. 1.25) retractable oil immersion, condenser turret phase A.N. 1.25, central telescope and blue filter.

Part No. **5313017**

Darkfield condenser: Permits the observation of low contrast and small size, dispersed in a homogeneous substrate samples which they appear luminescent under a uniform darkfield.

Darkfield condenser A.N. 0.83 - 0.91 dry (operable under low magnification).

Part No. **5313018**

Darkfield condenser A.N. 1.25 - 1.36 oil immersion (operable under high magnification).

Part No. **5313019**

Video camera for eyepiece

Part No. **5435030**

MODEL	Part No.	Height / Width / Depth mm	Power supply	Weight Kg
206	5313115	425 245 335	220 V / 50 Hz	7.5



5313017



5313018



5313019



5435030

COMECTA Microscopes "3000-A LED, 3000-B LED and 3000-C LED"



EXCELLENT RESOLUTION PLANACHROMATIC OPTICS. HIGH SPECIFICATION OPTICAL MICROSCOPES. MAXIMUM VERSATILITY WITH A WIDE RANGE OF CONFIGURATIONS, MODELS SHOWN ARE BINOCULAR AND TRINOCULAR WITH PHASE CONTRAST, BRIGHT AND DARK FIELD OPTICS, THIS INSTRUMENT IS IDEAL FOR A WIDE RANGE OF APPLICATIONS.

Optics Anti mould / Anti fungal

APPLICATIONS

Biology, bacteriology, cytology, immunology, diagnostics, pathology, agriculture, industry and university laboratories.

3000-A LED (BINOCULAR) AND 3000-B LED (TRIOCCULAR).

FEATURES

Head, binocular or trinocular (model dependant), inclined 30° with 360° rotation.

Interpupillary distance adjustable from 53 to 75 mm.

Dioptric adjustment of ± 5 dp in the left eyepiece, to compensate any visual differences.

Pair of DIN eyepieces wide field of view **WF 10x** (20 mm \emptyset).

DIN objectives, planachromatic bright field of **4x** (A.N. 0.10), **10x** (A.N. 0.25), **40x** (A.N. 0.65) retractable and **100x** (A.N. 1.25) oil immersion retractable, colour coded for rapid identification.

The planachromatic objectives provide an excellent image to the edge of the optical field of view.

Quadruple revolving objectives turret, rotates in both directions with spring ball stop locator when it is in the correct position.

Large substage of **180x140 mm**, rack and pinion adjustable height. Coaxial focus using controls located on both sides, graduated **micrometer** in steps of 0.002 mm and **macrometer** (with adjustable tension of up to 30 mm).

Safety stop with present adjustment.

Adjustable slide holder with a graduated scale of 0.1 mm, made up of a smooth (X-Y) rack and pinion mechanism, **longitudinal** and **transversal** movement of **50 mm** and **75 mm** respectively.

Abbe condenser of 1.25 A.N. precentred, with double lens, iris diaphragm and retractable from the front. Adjustable height using a rack and pinion mechanism.

The Abbe condenser can be easily replaced for special applications with a phase contrast condenser or a darkfield condenser (see accessories).

Transmitted illumination with LED that is formed with a condenser lens, viewing diaphragm removable filters and a precentred, low voltage, adjustable intensity.

Robust stable structure that includes the illumination system in the base, adjustable intensity potentiometer and On/Off switch.

Dimensions: 410 Height x 200 Width x 310 mm Depth.

Microscope Binocular Part No. 3000-A LED. Part No. 5901981

Microscope Triocular Part No. 3000-B LED. Part No. 5901982



Model "3000-B". Part No. 5901982.

MODEL 3000-C LED PLAN PHASE CONTRAST - BINOCULAR.

FEATURES

Similar characteristics to the model 3000-A LED except for a special configuration of **Plan Phase Contrast objectives**:

The objectives, **DIN quality, are planachromatic with positive phase contrast** of **10x** (A.N. 0.25), **25x** (A.N. 0.40) **40x** (A.N. 0.65) retractable and **100x** (A.N. 1.25) retractable and oil immersion.

The condenser is a phase turret A.N. 1.25, with central telescope and a set of white, blue and green filters. With sharp detail for examination of transparent thin sections that can differentiate the refraction index that the human eye cannot differentiate. Excellent for applications in biology, medicine, crystallography, agriculture, industrial plastics and rubber etc.

Microscope Binocular model 3000-C LED. Part No. 5901983

MODELS	Part No.	Head	Eyepieces	Objectives	Technique	Illumination	Weight kg
3000-A LED	5901981	Binocular		Planachromatic (PL) 4x - 10x - 40x - 100x	Brightfield	3 W	8.4
3000-B LED	5901982	Triocular	WF 10x				8.7
3000-C LED	5901983	Binocular	(20 \emptyset)	Planachromatic (PL) phase contrast 4x - 25x - 40x - 100x	Phase contrast	LED	8.4

Supplied complete with matt glass filter, fuse and a dust cover.

SPARE

LED lamp 3. Part No. 5313026

ACCESSORIES

See page: 278

COMECTA Trinocular fluorescence microscope "3002-F"



EXCELLENT RESOLUTION. POLYVALENT, CAN WORK IN EPIFLUORESCENT OR TRANSMITTED LIGHT MODE. WITH TRINOCULAR ADAPTER FOR CAMERA AND VIDEO CAMERA. PHASE CONTRAST AND DARK FIELD MODES AS ACCESSORIES.

OPTICS ANTI MOULD / ANTI FUNGAL

APPLICATIONS

Biology, cytology, oncology, genetics, scientific investigation, clinical diagnostics, epidemic prevention and embryology.

FEATURES

Trinocular head, inclined 30° and rotatable through 360°.

Interpupillary distance adjustable from 55 to 75 mm.

Dioptric adjustment of ± 5 dp in the left eyepiece, to compensate for any visual differences.

Pair of wide field DIN eyepieces WF 10x (22 Ø).

Bright field planachromatic DIN objectives of 4x (A.N. 0.10), 10x (A.N. 0.25), 40x (A.N. 0.65) retractable, and an oil immersion retractable 100x (A.N. 1.25) they are colour codified for a quick identification.

Planachromatic objectives provide an excellent image to the edge of the optical field of view.

Quadruple revolving objective turret, with both sides rotation and with a roller bearing and a notch stop.

Large sub stage of 180x150 mm, rack and pinion height adjustable, by coaxial focus bilateral controls, graduated micrometer in steps of 0,002 mm and macrometer with adjustable tension (30 mm path). With transmitted light lock plate and UV radiation protection screen.

Safety stop with preset adjustable safety level.

Mechanical slide holder (moveable), with graduated scale of 0,1 mm, made up of a smooth movement mechanism (x-y), by a 50mm longitudinal and a 75mm transversal rack and pinion movement.

Abbe condenser of 1.25 A.N., precentred, with double lens, iris diaphragm and retractable frontal lens. Rack and pinion height, adjustable.

Abbe condenser can be easily replaced by a phase turret condenser (for contrast) or dark field condenser, for special observation conditions (see accessories).

Transmitted illumination (diascopic), according to Köhler, that consists of a condenser lens, a field diaphragm, removable filters and low voltage halogen precentred lamp of 12V/30W with adjustable intensity.

Robust stable structure that includes the illumination system, the intensity potentiometer and the On/Off switch on its base.



FLUORESCENCE UNIT

Mercury lamp of 100 W/DC

Lamp power supply connected to 110 V/220 V with intensity, voltage and power adjustable by a knob.

Illumination module for reflected fluorescence (Waveband B and G, N free).

The unit includes diaphragm, selectable attenuation filter and 5 positions filter disk: ultra-violet, violet, blue and green filters, and a empty position for transmitted light.

ACCESSORIES

Waveband V and UV. Part No. **5901986**

MODEL	Part no.	Eyepieces	Objectives	Technique	Illumination	Weight kg
3002-F	5901984	WF 10x (22 Ø)	Planachromatics (PL) 4x- 10x- 40x-100x	Epifluorescent	Transmitted 12v / 30w & Mercury fluorescence 100w / DC	10,5

Supplied complete with a set of blue, green and white filters, bottle of immersion oil η_D 1.515, mercury lamp 100 w, spare fuse and dust cover.

SPARE PARTS	Halogen lamp 12 V / 30 W. Part No. 5313021 .	Mercury lamp 100 W DC. Part No. 5313055
Block with omega fluorescence filter:	U V. Part No. 5313060 Violet. Part No. 5313061 Blue. Part No. 5313062 Green. Part No. 5313063	

ACCESSORIES FOR MICROSCOPES MODELS "3000-A LED", "3000-B LED", "3000-C LED" AND "3002-F"

Eyepiece with wide angle lens WF-15x (single). Part No. **5313073**.

Eyepiece with wide angle lens WF-20x (single). Part No. **5902074**

Contrast phase kit: Objectives DIN, planachromatic positive phase contrast of 10x (A.N. 0.25), 25x (A.N. 0.4), 40x (A.N.0.65) retractable and 100x (A.N.1.25) retractable oil immersion and phase condenser turret, A.N. 1.25, with central telescope and green filter. Part No. **5901985**

Dark Field condenser: Permits the observation of low contrast particles dispersed in a homogenous substrate, that appear luminous in a dark field.

- Dark field condenser: A.N. 0.77 ~ 0.91 dry (low magnification). Part No. **5313071**

- Dark field condenser: A.N. 1.25 ~ 1.40 immersion (high magnification). Part No. **5313072**

Micrograph Kit, camera mechanism WF 10x with a visor for focus correction and a photographic objective of 2.5 - 4x. (Adaptable for **Digital reflex photographic kit**). Part No. **5902008**

Digital reflex photographic kit Composed of a mount, a shutter and a SD memory card of 2Gb. Part No. **5531322**

Adapter for a CCD video camera: attachment. Part No. **5313070**

Wooden case. Part No. **5313016**



COMECTA Microscope biological inverted, trinocular "XDS-1B LED"

ISO 9001



APPLICATIONS

Optical microscope with many benefits, specially designed for biomedicine, biology and for culture analysis in matrix flasks and in microtitre plates, flasks, culture vessels, tubes etc. through the use of its objectives and long working distance condenser, technique uses brightfield or phase contrast.

FEATURES

Robust stable design with lateral arm wrist supports for maximum comfort and easy manipulation.

Trinocular head, inclined 45°.

Interpupillary distance adjustable from 53 to 77 mm.

Diopter correction of ± 5 dp in the left eyepiece, used to correct differences in sharpness.

Pair of DIN wide field WF 10x (22 Ø), telescopic central eyepiece phase contrast DZ11x DZ11x and trinocular photography eyepiece **S 5x (9.5 Ø)**.

Objectives DIN planachromatic brightfield, long working distance LWD PL of 10x (A.N. 0.25/working distance W.D.=4.3 mm), 20x (A.N. 0.40/W.D.=8 mm), 40x (A.N. 0.40/W.D.=3 mm) and on **negative phase contrast LWD PL ph** of 10x (A.N. 0.25/W.D.=5 mm), colour coded for rapid identification. Maximum thickness acceptable for receptacle bases 1.2 mm.

Quadruple objectives turret with rotation in both directions with a roller bearing and notch stop. Rack and pinion height adjustment mechanism with bilateral coaxial focus controls: **micrometer** of 0.2 mm rotation graduated at 0.002 mm increments and **macrometer** with adjustable tension. Total working distance 12 mm.

Condenser with long working distance (55 mm), brightfield and phase contrast. Precentred, with iris diaphragm and flip out phase contrast. **Including a phase ring of 25x**. Rack and pinions mechanism for height regulation or lateral removal for more height receptacles of up to 145 mm.

Large stage: dimensions 227x208 mm. Includes 3 stages for optimum accommodation of differing sample vessels: plates and or culture flasks, microtitre plates, etc.

Mechanical sub-stage with graduated scale of 1 mm and vernier of 0.1 mm, made up of a smooth mechanism (x-y) rack and pinion drive with 77 mm longitudinal and 114 mm transversal.

Illumination system, diascopic transmitted light by a halogen lamp of 6 V / 20W, precentred by external knobs and controllable intensity. The unit includes a field diaphragm with filter carousel of green and grey.

MODEL	Part No.	Height / Width / Depth exterior cm	Weight Kg
XDS-1B LED	5901988	58 30 53	17



Comes complete with 2 flasks, 2 culture plates, wooden holder for eyepieces, objectives and accessories, 2 lamps, 2 spare fuses and a protective cover.

ACCESSORIES

Objectives planachromatic long working distance
Negative phase contrast:
Objective PLL ph 20x
(A.N. 0.40 W.D.=8 mm)

Part No. **5313065**

Objective PLL ph 40x
(A.N. 0.60 W.D.=3,5 mm)

Part No. **5313066**

Adapter thread CCD 0.5 x

Part No. **5313067**

Adapter thread 1 x

Part No. **5313068**

Eyepiece WF10x (22 mm)
With reticule

Part No. **5313064**

5313065

5313066



5313064

Digital reflex photographic kit, composed of a mount, a shutter and a SD memory card of 2Gb.
Part No. **5313222**



5313222

SPARES

3W LED lamp. Part No. **5313029**

COMECTA Microscope metallographical inverted "18AT"

EXCELLENT RESOLUTION. PLANACHROMATIC OPTIC.



APPLICATIONS

Microscope with high capabilities.

Made for large sample observations. Samples are placed on top of an open obstruction free stage.

Binocular or Trinocular configuration with a range of accessories, that convert the instrument into an versatile microscope ideal for the identification and analysis of different materials and alloys. Suitable for a wide range of scientific research applications in metallurgy, physical properties of metals, heat treatments and quality control.

FEATURES

Head, binocular or trinocular (model dependent), 45° inclined angle.

Adjustable interpupillary distance from 53 to 77 mm.

Dioptric adjustment of ± 5 dp in the left eyepiece, compensating for any visual differences.

Paired eyepieces, DIN quality. Wide field of view **WF 10x** (22 mm \emptyset).

Objectives DIN grade, planachromatic brightfield of **10x** (A.N. 0.25), **20x** (A.N. 0.50), **50x** (A.N. 0.70), retractable, and **100x** (A.N. 0.85), retractable, using immersion oil. Colour coded for easy and rapid identification.

Magnification range: 100x, 200x, 500x and 1000x.

The planachromatic objectives provide an excellent image, free from aberrations at the edge of the field of view.

Quadruple rotating objectives turret, rotates in both directions with stop locator when in the correct position.

Large sub stage of 242x200 mm, rack and pinion adjustable height, with bilateral coaxial focus. Micrometer graduated in 0.002 mm steps and **macrometer**, with adjustable tension up to 19 mm.

Safety stop with a pre-set safety level.

Slide holder with scale of 0.1 mm, with a smooth X and Y rack and pinion movement of 15 mm **longitudinal** and 15 mm **transversal** movement.

Illumination: incidental (episcopic), Köhler, that consists of a condenser lens, condenser Abbe of 1.25 A.N., pre-centred with an iris diaphragm,



Model trinocular 18AT.

filters and a pre-centred halogen 6 V / 30 W low voltage controllable light source. **Structure, robust** with an illumination system in the base, intensity potentiometer and illumination switch.

Dimensions: 40 height x 25 Width x 61 cm depth.

Weight: 15 Kg.

Comes complete with a set of filters: blue, yellow, green and matt glass filter.

Microscope Triocular Part No. 18AT. Part No. 5901990

SPARE

Halogen lamp 6 V / 30 W. Part No. 5313069

ACCESSORIES



5313222

Digital reflex photographic kit composed of a mount, a shutter and a SD memory card of 2Gb. CMOS sensor higher than 10 megapixels. Speed up to 3 pictures per second. LCD display of 2,5 inches. Processed with total image control. Large area viewfinder and high luminosity.

Part No. **5313222**

Eyepiece with wide field, of view WF-10x (22 mm) with reticule. Part No. **5313064**

Adapter thread CCD 0.5x. Part No. **5313067**

Adapter thread CCD 1x. Part No. **5313068**

Micrograph Kit comprising of: Photographic adapter mechanism with eyepiece WF-10x with focus adjustment visor and objective of 4x (adaptable to **Digital reflex photographic kit**). Part No. **5902014**



5902014

COMECTA Eyepiece video camera

ADAPTS DIRECTLY ONTO THE EYEPIECE OF THE MICROSCOPE OR TRINOCULAR HEAD.

Micro video camera 3.1 MP with a USB connection, direct to a PC, includes software.
Part No. **5435030**



OPTIC
ivymen
SYSTEM

OPTIC
ivymen
SYSTEM

COMECTA Light source, cold source, fibre optic "Z-150" CONSTANT COLOR

APPLICATIONS

Microscopy illumination for small samples free from colour alteration.

Especially recommended for microphotography of live biological samples, cultures, micro-organisms, process control, electronic components, dental studies, etc.

FEATURES

Halogen lamp 150 W. Adjustable illumination intensity control. Forced air circulation. Heat absorption filter. Safety transformer fitted. Primary fuse protection.

CONTROL PANEL

Mains switch. Potentiometer controlled light intensity.

MODEL

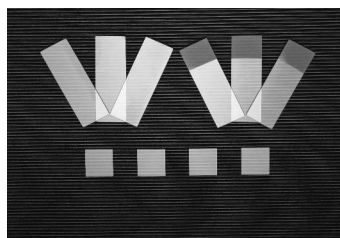
Part No.	Height / Width / Depth exterior cm	Power W	Weight Kg
5901016	15 19 25	150	4

SPARE Lamp 150 W.
Part No. **5901017**

Supplied with double flexible arm 50 cm long.



COMECTA Microscope accessories and consumables



GLASS SLIDES

Glass slides (smooth): 26 x 76 x 1.5 mm.

Part No. **5600400** Box of 72.

Glass slides (matt end for notes): 26 x 76 x 1.5 mm.

Part No. **5600399** Box of 72.

Cover slip: 18 x 18 mm.

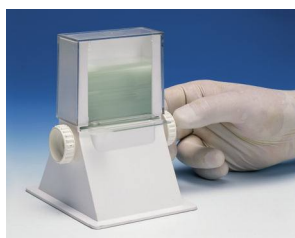
Part No. **5600396** Box of 100.

Cover slip: 22 x 22 mm.

Part No. **5600397** Box of 100.

Cover slip: 24 x 24 mm.

Part No. **5600398** Box of 100.



SLIDE DISPENSER

Base made of ABS with a transparent Polycarbonate lid, with rotating manual dispenser of individual slides.

Capacity 50 slides of 76 x 26 mm.

Part No. **1001366**



CLEANING KIT

Suitable for optical microscopes.

Part No. **5313000**



WOODEN MICROSCOPE BOX

Solid wood, microscope box, of 3 mm thickness, treated with varnish, fitted with a metallic door, clasp lock and a carry handle.

Microscope Box suitable for Model M-100FL, XTX-3C and ZTX-20.

420 high x 255 wide x 285 mm deep. Part No. **5313022**
Microscope Box suitable for Model SQF-L, SQF-E, 2000-A, 2000-B and 2000-C.

Internal dimensions: 420 high x 265 wide x 317 mm deep.
Part No. **5313016**

Slide support, Slide box for storing slides, slide staining stands, etc. (See pages 215 to 219).

COMECTA Disk polarimeter "polar-2010" LED

LAURENT TYPE MODEL
LED LAMP ILLUMINATION

APPLICATIONS

Designed for colleges and universities, chemical laboratories, pharmaceutical, clinics, cosmetics and food industry.

FEATURES

Vernier reading definition. Angle $\pm 0,05^\circ$.

Measuring range of optical rotation: $\pm 180^\circ$.

Rotation scale division: 1° .

Measuring lens 4x.

Ocular with dioptres adjustment.

Slide rack compartment length: for tubes up to 220 mm.

Monochromatic lamp wave length: 589,3 nm.

MODEL

Part No	External measurements cm. Height / Width / Depth	Consumption W	Power V / Hz	Weight Kg
5120220	32 43 14	20	110-220 / 50-60	5

SPARE PARTS

Sodium lamp. Part No. **5120221**



NEW
DESIGN

OPTIC
ivymen
SYSTEM

COMECTA Refractometer ABBE "2WAJ"

LCD DIGITAL THERMOMETER BUILT-IN.

APPLICATIONS

Ideal for measuring the refractive index n_D of liquids, solids and sugar concentrations (0 - 95% = n_D 1.333-1.531).

Indispensable instrument for industrial chemistry, petroleum, pharmaceutical, food oils and fats, sugars, universities etc.

FEATURES

Telescopic system X2 magnification.

Eyepiece with dioptric correction.

Connection for external water bath.

Thermometer 0-70 °C. To see the sample temperature.

Robust metallic construction.

Weight: 2.6 Kg.

Measurements: 240 mm high x 100 mm wide x 200 mm depth.

Measuring range:

Refraction index n_D : 1300 - 1700.

Brix: 0 - 95%.

Measuring definition:

Refraction index n_D : 0.0005.

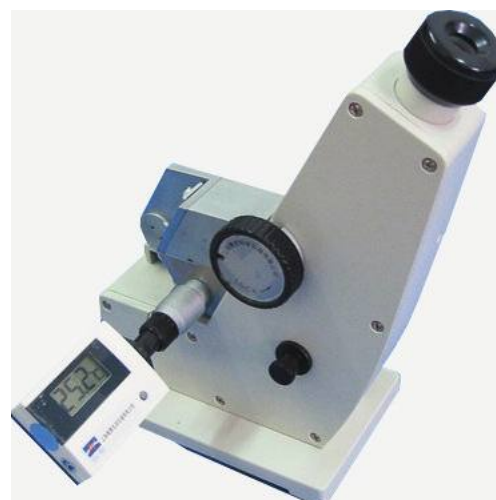
Precision n_D : ± 0.0002 .

Brix: 0.25%. Precision: $\pm 0.1\%$.

Part No. 5901008

Supplied complete with

- Aluminium carry case,
- 1 bottle of Naphthalene Bromide,
- 1 calibration standard,
- 1 screwdriver and dust cover.




COMECTA Digital ABBE refractometer "WYA-2S"

APPLICATIONS

Ideal for measuring the refractive index of liquids, solids and sugar concentrations (° Brix), industry: chemical, petroleum, food, pharmaceutical, universities and research etc.

FEATURES

Apparatus equipped with an optical system made of a telescope with dispersion correction, used to define the division line between dark and bright areas. 

Precise optics with automatic temperature compensation displayed as °Brix and sample temperature.

Stabilized temperature connection for a water bath.
RS-232 output with software included.

Measuring range:

Refraction index n_D : 1.3000 - 1.7000

Brix Bx - TC: 0 - 95%

Brix Bx: 0 - 95%

Measurement scale definition:

Refraction index n_D : ± 0.0002

Brix Bx - TC: $\pm 0.1\%$

Brix Bx: $\pm 0.1\%$

Temperature:

Working range: 0 - 50 °C.

Correction range of Bx, in respect to temperature: 15 - 45 °C.



Supplied complete with dust cover and maintenance box that includes:

- 1 bottle of Naphthalene Bromide,
- 1 calibration standard,
- 1 Hex key,
- 3 lamps 6.3V, 0.25 A.
- 3 fuses 1 A.

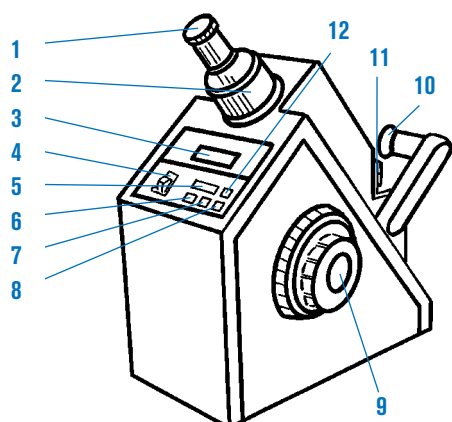
Optimum precision



MODEL

Part No.	Height / Width / Depth (exterior) cm	Power supply	Weight Kg
5901007	38 18 33	220V $\pm 20V$ 50/60Hz	10

CONTROL PANEL



Technical description

1. Monocular system.
2. Telescope adjustment.
3. Digital display.
4. Mains switch "POWER".
5. Push button "READ".
6. Push button for Brix with temperature correction "Bx - TC".
7. Push button for the refractive index " n_D ".
8. Push button for Brix without temperature correction "Bx".
9. Optical control.
10. Light intensity unit.
11. Refractometer prism.
12. Push button for temperature indicating. "TEMP".

COMECTA Refractometers



COMMON FEATURES

- Robust metal construction.
- Excellent optical quality.
- Eyepiece with adjustable dioptic ring to compensate any visual sharpness.
- Easy to use, with direct easy to read scales.
- Adjustable calibration screw.
- Supplied complete with pouch, Pasteur pipette and screwdriver.



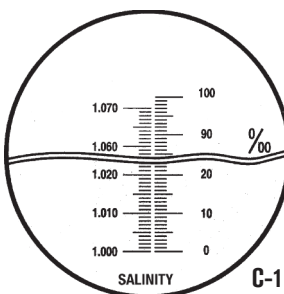
REFRACTOMETER FOR SALINITY ‰ AND DENSITY “C-1”

APPLICATIONS

For the investigation in clinical laboratories (solutions and dissolutions). Industry, food provisions (vegetables, fruit, fish and shell fish).

TECHNICAL SPECIFICATION

- Automatic compensation
- Temperature: 10 - 30 °C.
- Salinity range: 0 to 100 ‰.
- Division Scale: 1 ‰.
- Density: 1000 - 1070.
- Division scale: 0.001.
- Part No. **5901001**



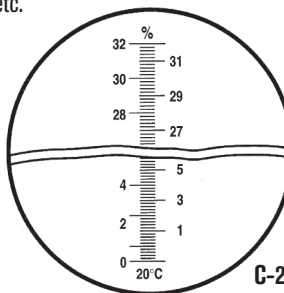
REFRACTOMETER BRIX% INDEX “C-2”, “C-3”, “C-4” AND “C-5”

APPLICATIONS

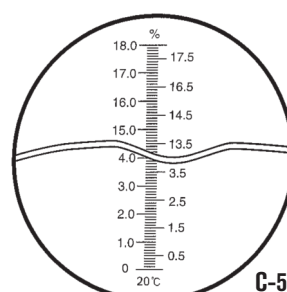
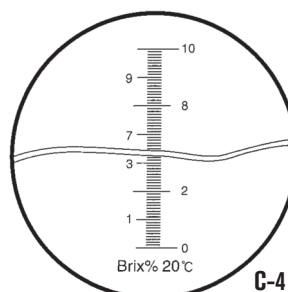
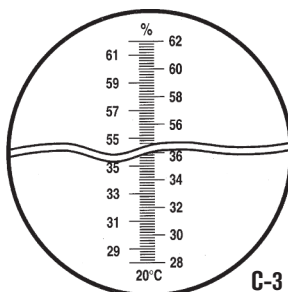
Concentrates of sugar in fruit, juices, gaseous drinks, milk, wine, industrial oils etc.

TECHNICAL SPECIFICATION

- “C-2” Range Brix: 0 - 32 %.
- “C-3” Rango Brix: 28 - 62 %.
- Division scale: 0.2 %.
- Precision ±0.2 %.
- “C-4” Rango Brix 0 - 10 %.
- “C-5” Rango Brix 0 - 20 %.
- Division scale: 0.1 %.
- Precision: ±0.1 %.



- Part No.
- 5901002** Model C-2
- 5901020** Model C-2 with temperature compensation
- 5901003** Model C-3
- 5901021** Model C-3 with temperature compensation
- 5901022** Model C-4
- 5901023** Model C-4 with temperature compensation
- 5901024** Model C-5
- 5901025** Model C-5 with temperature compensation



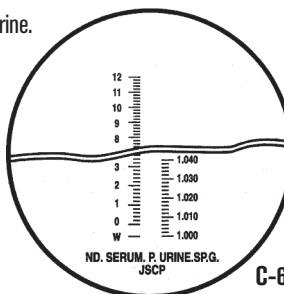
CLINICAL REFRACTOMETER 2 SCALES “C-6”

APPLICATIONS

Suitable for the determination of proteins, serum and specific gravity (density) of urine.

TECHNICAL SPECIFICATION

- Proteins in serum: 1 - 12 g/100 ml.
- Division scale: 0.2 g/100 ml.
- Urine density: 1000 - 1040.
- Division scale: 0.002.
- Part No. **5901006**



A different conception.

Totally automatic, without the need to visually determine the melting point process

APPLICATIONS

Research laboratories, quality control. Test and control of purity after synthesis in pharmaceutical laboratories.

AUTOMATIC MELTING POINT WRS-1B

Single sample analysis

LCD display, simple alphanumeric keypad.

Melting point determination by photoelectric detection.

Automatic functions. Reads and registers the starting point, fusion point and end point.

Part No. **5609401**

AUTOMATIC MELTING POINT WRS-2A

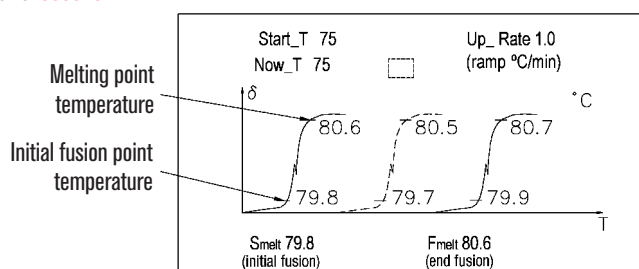
Simultaneous analysis, three samples.

LCD graphic display and 16 keys numeric keypad.

Melting point determination detector photoelectric.

Automatic functions. Reads and registers the starting point fusion point, end point, melting point curve and average value determination.

Part No. **5609402**



Details of graphic display, calculated average of melting point curves.

MODELS	WRS-1B	WRS-2A
Part No.	5609401	5609402
Digital LCD screen	Numeric	Numeric and graphical
Maximum capillary tube capacity, 1.4 mm Ø ext.	1	3
Temperature range	from 50 °C to 300 °C	
Readable temperature resolution	0.1°C	
Melting point measurement precision	Upto 200 °C ±0.5 °C and from 200 °C to 300 °C ±0.8 °C	
Selectable ramp rate in °C/minute	0.2 - 0.5 - 1 - 1.5 - 2 - 3 - 4 and 5 °C/min.	
Repeatability	0.4 °C	0.3 °C ramp rate of 1 °C/min.
	ramp rate of 1 °C/min	0.2 °C ramp rate of 0.2 °C/min.
Decending time to reach the start temperature	increasing	from 50 °C of 300 °C 3 minutes
	decreasing	from 300 °C of 50 °C 5 minutes
Sample holder	for capillary tubes of 1.4 mm Ø ext. / 1 mm Ø int.	
Sample fill height	3 mm	
Output interface RS-232	9600 baudrate, 1 bit stop and 8 data bits	
Power	110 W	
Power supply	220V-50/60Hz	
Weight	9.5 Kg	12.5 Kg
Weight /Dimensions, height x width x depth in mm	380 x 315 x 200	398 x 278 x 210

Supplied complete with 1000 capillary tubes of 1.4 mm Ø ext set of maintenance tools comprising of star and flat screwdrivers, drill bit of 1.5 mm Ø, allen key 3 mm, lamp and fuse, software and protective cover.

ACCESSORY Capillary tubes of 1.4 mm Ø ext. 1.0 mm Ø int. Box of 5000 tubes Part No. **5609404**

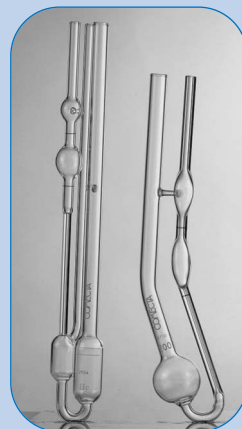
SPARE Lamp 6.5 V 0.3 A. Part No. **5609405**



ROTARY VISCOMETERS



FLOW CUPS



GLASS VISCOMETERS



MONITOR AND CONTROL



GLASS THERMOMETERS



REACTORS



LABORATORY FUME CUPBOARDS

Laboratory fume cupboards

Biological safety cabinets

Rotary viscometers

Flow cups for measuring liquid viscosity

Viscometer precision bath

Glass viscometers

Monitor and control apparatus

Glass thermometers

Laboratory reactors

Molecular distillator

Filters

Analytical consumables

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Viscometers, Monitor and control, safety, Consumables.

"True knowledge is rigorous and hard on itself. At the same time is amiable and tolerant."
Plutarco

SAFETY: DESIGNED AND BUILT MEETING EUROPEAN STANDARD UNE-EN 14175-2

COMMON FEATURES

Antiacid continuous ceramic worktop with anti-dumping peripheral rim and evacuation sink. Polypropylene basin for lateral evacuation.
 Inner working chamber built in thermo stable compact resins, antiacids and anti-moisture. M1 fire resistance.
 Extraction system with perfectly balanced injected polypropylene turbine. Coupled and protected engine outside the fumes way.
 Vertical guillotine door with adjustable height in any position and three sections of 3 + 3mm laminated glass slide which creates a high resistance protection shield.
 Self-supporting structure, made of structural elements with 2 mm steel tube, degreased, phosphated and coated with a 70 µ layer of epoxy paint vitrified in the oven. This structure is completely isolated from the working cabin and from the gases contact.
 External cover in white melamine board or thermo stable resins in high humidity environments.

ASSEMBLY SYSTEM INTO TWO BODIES

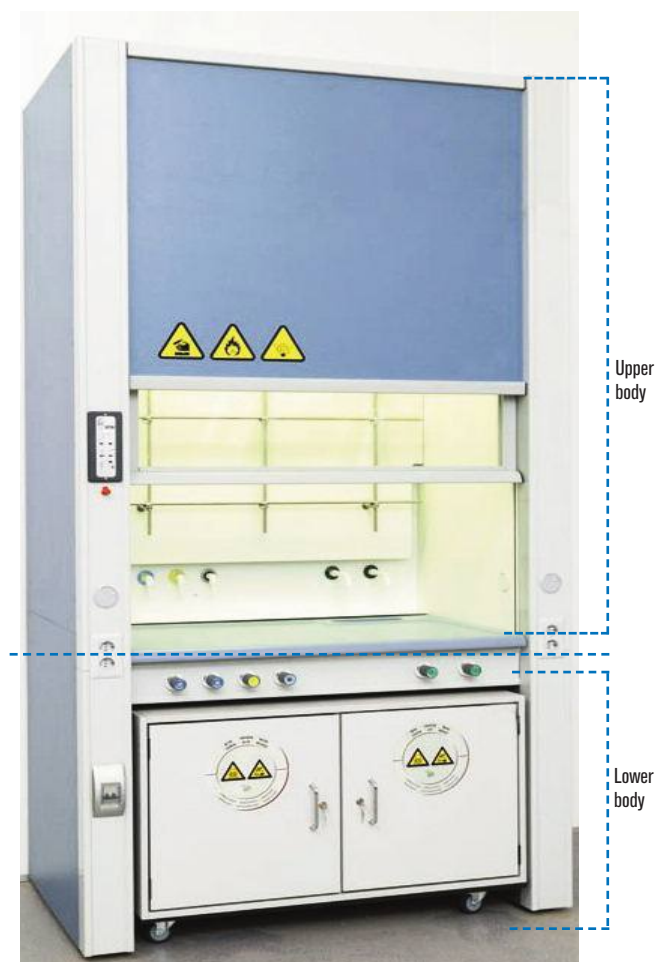
Upper body with cabinet and embedded extractor.
Lower body with a structure, ceramic worktop and remote control panel for fluids and gases in an horizontal housing.
Optional: working system (Walking) at ground level for the input and working with machinery, reactors and organic synthesis appliances. (Request information).

TECHNICAL FEATURES

Lighting level: More than 500 Lux in working area IP 55 or ATEX*.
 Extraction volume: from 420 to 4.500 m3/h.
 Engines: from 0,37 to 2,2 CV - IP55 or ATEX*.
 Voltage: 220V/50Hz. Single phase / three phase.
 *ATEX: if we work with flammable, solvents or hydrocarbons.
On request: Automatic control unit for variable flow (motor) depending on door's opening. Failure alarm.
On request: Perimeter and ceiling in continuous tiles, for working with sulfuric acid.
On request: Perimeter and ceiling in continuous tiles, for working with perchloric acid. It comes with gas washing.

CONTROL PANEL

ON / OFF push button with green LED and electrical sockets 230V/16A. Fuel regulator knob (Yellow). Nitrogen regulator knob (Blue/ green button). Vacuum regulator knob (Grey/ black button). Air regulator knob (Blue/ yellow button). Water regulator knob (Green/ blue button). Safety locking pin on door for recommended working position.



Can be supplied with custom measurements on demand.

*G = Antacid stoneware throughout the interior of the upper cabin

MODELS	Part No.	Height / Width/ Depth Upper body (exterior) cm			Height / Width/ Depth Lower body (exterior) cm			Height / Width/ Depth Upper body (inner) cm			Height / Width/ Depth Lower body (inner) cm			Upper Weight Kg	Lower Weight Kg
VG-BS-1220	5001613	180	120	90	90	120	90	130	95	69	72	95	55,5	104	64
VG-BS-1420	5001614	180	150	90	90	150	90	130	125	69	72	125	55,5	102	96
VG-BS-1720	5001615	180	180	90	90	180	90	130	155	69	72	155	55,5	180	128
VG-BS-2020	5001616	180	200	90	90	200	90	130	175	69	72	175	55,5	208	160
VG-BS-1220	5001631 ATEX+G*	180	120	90	90	120	90	130	95	69	72	95	55,5	124	64
VG-BS-1420	5001632 ATEX+G*	180	150	90	90	150	90	130	125	69	72	125	55,5	162	96
VG-BS-1720	5001633 ATEX+G*	180	180	90	90	180	90	130	155	69	72	155	55,5	200	128
VG-BS-2020	5001634 ATEX+G*	180	200	90	90	200	90	130	175	69	72	175	55,5	248	160

ACCESORIOS

Kit de montaje

- 2 tubos PVC Ø200 x 200 cm. Código 5001617
- 2 codos PVC Ø200 de 90°. Código 5001623
- 1 codo PVC Ø200 de 45°. Código 5001621
- 1 salida antipájaros Ø200. Código 5001629
- 1 codo PVC Ø200 de 45°. Código 5001621
- 2 flexibles Ø200 (25 cm por tubo). Código 5001619

Safety cabinets

Part No.	Acids & base	Flammables	Doors
5001625	Yes	No	1
5001626	Yes	No	2
5001627	No	Yes	1
5001628	No	Yes	2

SAFETY: DESIGNED AND BUILT MEETING EUROPEAN STANDARD UNE-EN 14175-2

COMMON FEATURES

Inner working chamber built in thermo stable compact resins, anti-acid and anti-moisture. M1 fire resistance.

Extraction system with perfectly balanced injected polypropylene turbine. Coupled and protected engine outside the fumes way.

Vertical guillotine door with adjustable height in any position and 3 + 3 mm laminated glass slide in three sections creating a high resistance protection screen.

Self-supporting structure made of structural elements with a 2 mm thick steel tube, degreased, phosphated and coated with a 70 μ layer of epoxy paint vitrified in the oven.

This structure is completely isolated from the work cabin and the contact with gases. External cover in white melamine board or thermo stable resins with a high degree of environmental humidity.

Fume cupboard specially designed for pilot plant assemblies or special techniques where a large free interior space is required, fully accessible within the cabin.

TECHNICAL FEATURES

Lighting level: More than 500 Lux in working area IP 55 or ATEX*.

Extraction volume: from 420 to 4.500 m³/h.

Engines: from 0,37 to 2,2 CV - IP55 or ATEX*.

Voltage: 220V/50Hz. Single phase/three phase

ATEX*: if we work with flammables, solvents or hydrocarbons.

On request: automatic control unit for variable flow (motor) depending on the door opening function. Failure alarm.

On request: Perimeter and roof in GRES continuous for working with sulfuric acid.

On request: Perimeter and roof in GRES continuous for working with perchloric acid. Includes gas scrubber.

CONTROL PANEL

ON/OFF push button with green LED and electrical sockets 230V/16A.

Fuel regulator knob (Yellow).

Nitrogen regulator knob (Blue/green button).

Vacuum regulator knob (Grey/black button).

Air regulator knob (Blue/yellow button).

Water regulator knob (Green/blue button)

Safety locking pin on door for the recommended working position.

It can be supplied with customized measures on demand.

Standardized stainless steel supports for general use supplied on demand.



MODELS	Part No.	Height / Width / Depth (exterior) cm	Height / Width / Depth (interior) cm	Weight Kg
VG-VW-1420	5001642	270 150 90	182 125 63	116
VG-VW-1720	5001643	270 180 90	182 155 63	148
VG-VW-2020	5001644	270 200 90	182 175 63	180

ACCESORIOS

Kit de montaje

2 tubos PVC Ø200 x 200 cm. Código 5001617

2 codos PVC Ø200 de 90°. Código 5001623

1 codo PVC Ø200 de 45°. Código 5001621

1 salida antipájaros Ø200. Código 5001629

1 codo PVC Ø200 de 45°. Código 5001621

2 flexibles Ø200 (25 cm por tubo). Código 5001619

SAFETY:
US STANDARD ST 209 (CLASS 100)
EUROPEAN STANDARD ISO 14644 (CLASS 5) HEPA FILTER (HIGH EFFICIENCY PARTICULATE AIR)

APPLICATIONS

Water quality control, laboratories and food industries, pharmacies services, haematology and clinical analysis, drug-injecting antibiotics, microscopic analysis, assisted fertilization, cell cultures, etc...

FEATURES

- Lower setting made of PMMA transparent methacrylate.
- Working surface made of stainless steel AISI 304.
- Ultraviolet lamp.
- Metallic parts coated with protective polymerization.
- Extraction system with silent turbine.
- Operating hours counter for HEPA filter replacement.

TECHNICAL SPECIFICATIONS

- Illumination level (W-Lux): 500.
- Airflow speed (M/S): 0.7 - 1.0.
- Noise level (dB): < 67.
- Power supply (V-Hz): 220/50.
- HEPA filter class H14: 99,999% efficiency for particles of 0.5 microns. Working temperature in °C: between 15 and 35.

CONTROL PANEL

- Stop/start push button.
- Light push button.
- Sterilization push button.
- Ventilation push button.



MODELS	Part No.	Height / Width / Depth (exterior) cm	Height / Width / Depth (interior) cm	Fluorescent Lamp (W)	UV lamp W	Power W	Weight Kg
H1	5609511	78 46 55	40 38 54	15x1	15x1	150	40
H2	5609510	90 55 70	50 45 68	18x1	18x1	160	60

ACCESSORIES

Supporting tables for cabinets

FOR MODEL	Part No.	Height / Width / Depth (exterior) cm	Weight Kg
H1	5609512	78 55 47	5
H2	5609513	78 70 55	8



Shoe soles coater “ZA-1”
AUTOMATIC.
DIGITAL TEMPERATURE CONTROL OF AIR.

NEW

FEATURES

- Shoe soles coated with a PVC film.
- It cuts the film by thermal contraction providing hot air with temperature control.
- Different sizes shoes coated in seconds.
- It saves on consumables. A roll of film can be coated up to 1000 shoes.
- According with CE and ROHS regulations. Consumables 100% recyclable.



MODEL

Part No.	Dimensions cm (Height / Width / Depth)	Voltage	Power W	Weight Kg
5000051	33 45 80	220V-50Hz	1300	27

SPARE PARTS

PVC coil for 1000 coatings.
Part No. 5000052





Rotary Viscometers

Rotary viscosimeters “ST-2020”

INTRODUCTION

Rheology is the study of the effects experimented in a substance when a mechanical force is applied on it (flow and deformation) under different external conditions. It is used to describe the consistency of different products and is normally defined by the components: **viscosity and elasticity**.

Measuring viscosity is determined by the tangible force required to displace the materials particles with a specific deformation-flow i.e. velocity. The relationship between the tangible force and the deformation flow obtains the viscosity result. Ambient conditions such as temperature and pressure also have an effect on viscosity.

The measurement of viscosity is not just limited to the research laboratory, it has progressively entered the field of industrial quality control.

PRINCIPLES OF VISCOSITY

These instruments operate by means of a cylinder or disk (spindle) that is submerged into the material to be analysed and by measuring the resistance of the substance at a selected known speed. This resistance results in the measurement of the viscosity according to the flow characteristics of the reference spindle; the instrument calculates the result and directly displays the viscosity that is reported in **cP (CGS)** or **mPa-s (SI)**.

A wide range of viscosity can be measured using viscometers that are equipped with different types of spindles and speed ranges. The design of the spindles and the principals of measurement principles are regulated by **ISO 2555** and **ISO 1652** standards. All spindles are made of AISI 316 stainless steel. Each spindle can be identified by a letter and a number.

SELECTION TABLE

Standard measuring range of the viscometers, without additional accessories

Part no	1001616	1001617
Model	ST-2020 L	ST-2020 R
Units	centiPoise (cP)	centiPoise (cP)
Standard spindle	L1 to L4	R2 to R7
Speed range r.p.m.	1 to 60	0,1 to 100
Measuring range	20 to 600.000 cP	20 to 40.000.000 cP
Temperature range °C	0,0 to 100,0	0,0 to 100,0
Power requirement	115/230V to 12VDC 1.2A	115/230V to 12VDC 1.2A
Power	15 W	15 W
Weight	5 Kg	5 Kg

FEATURES

L.C.D. display of parameters and results:

- Selected speed r.p.m.
- Selected spindle. S.P.
- Viscosity result cP (mPa-s) or cSt.
- Base scale percentage %.
- Sample temperature: °C or °F.

Auto alarm in the case of any fault being detected.

Off scale detection and indication by an audible and visual signal.

Step controlled speed to prevent spindle vibrations.

Velocity from 0,1 to 100 r.p.m.

Mains power surge protection.

RS 232 unidirectional interface, download to a computer.

TECHNICAL DATA

Precision: ±1% base scale.

Repeatability: 0.2%.

Supplied complete with:

- Anti shock carry case.
- Main unit.
- Support base.
- Spindle protector.
- Spindle support.
- Set of spindles (model dependant)
- Temperature probe

DIGITAL THERMOMETER

Temp range:- from 0.0 °C to + 100.0 °C (+ 32.0 °F to + 212.0 °F).

- Resolution: 0.1 °C (0.1722 °F).

- Precision: ± 0.1 °C.



Model ST2020L



ACCESSORIES

Standard **spindles** for L model.

L1 Part No. **1000998**

L2 Part No. **1000999**

L3 Part No. **1001000**

L4 Part No. **1001001**

Standard **spindles** for R model.

R1 Part No. **1000995** (for low viscosity samples)

R2 Part No. **1001030**

R3 Part No. **1001031**

R4 Part No. **1001032**

R5 Part No. **1001033**

R6 Part No. **1001034**

R7 Part No. **1001035**



Rack of standard spindles L1, L2, L3, L4 : Suitable for models L.



Rack of standard spindles R2, R3, R4, R5, R6 and R7: Suitable for model R.



Spindle R1



Wide range rotary viscosimeters "STS-2011"

MODEL WITH TEMPERATURE READOUT AND SHEAR RATE MEASUREMENT AND SHEAR STRESS.

FEATURES

10 different options of language.
 L.C.D. display of parameters and results.
 Parameters display:
 - Selected speed r.p.m.
 - Selected spindle
 - Viscosity result cP (mPa-s) or cSt.
 - Base scale percentage %
 - Sample temperature: °C or °F.
 - Deformation ratio (with special spindle)
 - Torsion force (with special spindles)
 - Density
 (input by the user) g/cm³.
 This instrument determines both relative and absolute viscosity.
 Data can be changed between S.I. and C.G.S.
 Automatically checks for correct operation point by scanning at different speeds.
 Auto alarm in the case of any fault being detected.
 Off scale detection and indication by an audible and visual signal.
 Step controlled speed to prevent spindle vibrations.
 Calibration by the user himself.
 18 preselected speeds from 0.01 a 200 r.p.m.
 The operator can select any speed within this range.
 USB port.

Mains power surge protection.
 10 memoirs of working programs.

TECHNICAL DATA

Temperature range:- from -40 °C to + 300.0 °C
 (- 40.0 °F to + 572.0 °F).
 - Resolution °C: 0.1 °C (0.1722 °F).
 - Precision °C: ± 0.1 °C.
 - Probe type: Pt 100.
 Direct results in cP(mPa-s) or cSt.: models STS-2011 L & R.
 Direct results in Poise (Pa-s) or St.: model STS-2011 H.
 Precision: ±1% base scale.
 Supplied complete with:
 - Anti shock carry case.
 - Main unit.
 - Support base.
 - Spindle protector.
 - Spindle support.
 - Set of spindles (model dependant) (see table).



MODELS	Part No.	Measuring range	Standard spindles	Power requirement	Power W	Weight Kg
STS-2011 L	1001611	20 to 2.000.000 cP	L1, L2, L3, L4	100-240 V 50/60 Hz	25	5
STS-2011 R	1001612	100 to 13.000.000 cP	R2, R3, R4, R5, R6, R7	100-240 V 50/60 Hz	25	5
STS-2011 H	1001613	200 to 106.000.000 cP	R2, R3, R4, R5, R6, R7	100-240 V 50/60 Hz	25	5

ACCESSORIES

Standard spindles for L model.

- L1 Part No. 1001036
- L2 Part No. 1001037
- L3 Part No. 1001038
- L4 Part No. 1001039

Standard spindles for R and H model.

- R1 Part No. 1000990 (for low viscosity samples)
- R2 Part No. 1001070
- R3 Part No. 1001071
- R4 Part No. 1001072
- R5 Part No. 1001073
- R6 Part No. 1001074
- R7 Part No. 1001075

Small sample volume adapters (APM).

Suitable for sample volumes from 6,7 to 13,5 ml.
 Requires the "TL" or "TR" set of spindles.
 Unit suitable for temperatures from 0 °C to +100 °C.
 Part No. 1000987 Small sample adapter APM with water jacket and temperature sensor incorporated.

Special Spindles

Part No. 1001224 set of spindles TL5 - TL6- TL7 for models L.
 Part No. 1001225 set of spindles TR8 - TR9 - TR10 - TR11 for models R and H.

Low viscosity adapters. (LCP).

Required if low viscosity measurements are necessary.
 Reproducible results and measurements of viscosity from 1 cP.
 Suitable for models L and R.
 Sample volume: 16 to 18 ml.
 Includes special spindle LCP.
 Part No. 1000985. Adapter LCP with water jacket.
 Part No. 1001624 Temperature sensor suitable for LCP.

Displacement spiral helix adapter.

Required for low fluidity samples.
 Part No. 1000988



Spindle R1



Part No. 1000985



Part No. 1000986



Part No. 1000988



Temperature control equipment for viscosity measurements for viscometers “ST-2020” and “STS-2011”

The influence of temperature while measuring viscosity is considerable, lower temperatures increase viscosity. Therefore it is indispensable to control temperature when precise viscosity measurements are required. The control of temperature by using a thermostatically controlled bath is the most efficient, because of the re-circulation of liquid produces a rapid and stable temperature. We recommend our range of immersion thermostats for this application.

TEMPERATURE CONTROL AND CONFIGURATION FOR VISCOSITY MEASUREMENTS:

FRIGITERM-TFT-10 Part No. **3000546**, **FRIGITERM-TFT-30** Part No. **3000547** Suitable for below ambient working environments (see page 101 for specifications).

For temperatures above ambient see the **DIGITERM-S-150** Part No. **3000543**, or **DIGITERM-TFT-200** Part No. **3000544** complete with 12 litre tank Part No **6000391**, (see pages 98 and 100 for specifications).

An adapter kit for the thermostat bath is required:

Part No. **1001625** for STS-2011

Part No. **1001626** for ST-2020

Adapter for thermostat bath comprising of an extension spindle and 4 leg adjusters for the bath. (Kit can be fitted by the user.)

This kit adjusts the bath measuring height to enable samples to be placed inside.

Part No. **1001627**. Support for 2 500 ml beakers, to be placed inside the bath (**only for bucket 6000391**).

Part No. **1001628** Support base for the **DIGITERM** immersion thermostats. This accessory is recommended to close the bath and maintain a constant temperature.

CONSTANT TEMPERATURE CONTROL ACCESSORY FOR SMALL SAMPLE VOLUME ADAPTERS. USE WITH THE RE-CIRCULATING JACKET ACCESSORIES. PART NO. 1000996

To work below ambient temperatures, we recommend the use of the **FRIGITERM-TFT-10** Part No. **3000546**, or **FRIGITERM-TFT-30** Part No. **3000547** (see page 101 for specifications).

For temperatures above ambient see the **DIGITERM-S-150** Part No. **3000543**, or **DIGITERM-TFT-200** Part No. **3000544** complete with 12 litre tank Part No. **6000391**, (see pages 98 and 100 for specifications).

It is necessary to configure the immersion thermostats for “external re-circulation.” The Bath adapter kit is not required.



Frigiterm thermostat bath with adapter kit Part No. 1001625, fitted with a rotary viscometer.



Support for 2 beakers Part No. 1001627

Digiterm thermostat bath with support base Part No. 1001628. 12 litre bath Part No. 6000391 and adapter kit Part No. 1001625 or 1001626 To be used with a rotary viscometer and beaker support Part No. 1001627.



Immersion thermostat Digiterm controlling temperature of viscometer.

COMECTA Rotary Viscometer “NDJ-1”

APPLICATIONS

The instrument operates by rotating a disk or cylinder, (spindle), that is submerged in the liquid or fluid to be analysed. A pre-selected speed is set, the unit measures the absolute resistance from viscosity of the fluid being analysed. Suitable for samples such as: foods, cosmetics, fats and oils, pharmaceutical products, paints and plastics, etc.

FEATURES

The asynchronous motor is connected to a graduated disk with 4 different speeds that propel the spindle via a spiral and die.

Supplied complete with a set of 4 spindles in a box, numbered 1 to 4 with spindle stand.

The viscometer includes a level and adjustable screw feet support base and protective case.

MODEL	Part No.	Measuring range	Tolerance	Spindle Speed r.p.m. for 1 to 4	Power W	Weight Kg
NDJ-1	5120230	10-100.000 mPaS	±5% Liquid Newtons	6 - 12 - 30 - 60	15	6





Flow cups for measuring liquid viscosity

CUP N° 4 STANDARD DIN 53211.
CUPS STANDARD ISO 2431.
CUP FORD STANDARD ASTM D-1200.
CAPACITY: 100ML.

FEATURES

Suitable for measuring kinematic viscosities from 5 to 700 cSt, model dependent.
Metallic cups, chrome finished and calibrated.



Flow cups with handle.
Models DIN 53211 N° 4
and Ford ASTM D-1200.



Flow cups. Standard models.



Heated cups with threaded base, can be connected to a water bath or to a temperature regulator Electemp.

ACCESSORY

Support stand with adjustable level.
Part No. **7001021**

ACCESSORIES

Water bath with heater and screw on disk, with level. Part No. **7001022**
Temperature controller Electemp-TFT. Part No. **3000897**
Pt 100 sensor probe for the Electemp-TFT and water bath. Part No. **7001496**

MODELS

Part No.	Standard	Bore Ø mm	Format	Range cSt	Admissible fall times
1000123	DIN 53211	4	Standard	90 to 700	25" to 100"
7001239	DIN 53211	4	Heated	90 to 700	25" to 100"
1000347	DIN 53211	4	With handle	90 to 700	25" to 100"
1001013	ISO 2431	3	Standard	5 to 42	30" to 100"
7001017	ISO 2431	3	Heated	5 to 42	30" to 100"
1001014	ISO 2431	4	Standard	35 to 135	30" to 100"
7001018	ISO 2431	4	Heated	35 to 135	30" to 100"
1001015	ISO 2431	5	Standard	100 to 350	30" to 100"
7001019	ISO 2431	5	Heated	100 to 350	30" to 100"
1001016	ISO 2431	6	Standard	190 to 680	30" to 100"
7001020	ISO 2431	6	Heated	190 to 680	30" to 100"
1000705	ASTM D-1200	2.53	Standard	25 to 120	20" to 100"
		4.12		70 to 370	20" to 100"
7000706	ASTM D-1200	2.53	Heated	25 to 120	20" to 100"
		4.12		70 to 370	20" to 100"
1000707	ASTM D-1200	2.53	With handle	25 to 120	20" to 100"
		4.12		70 to 370	20" to 100"

Comes with a calibration certificate with results traceable to know standards and equipment

J.P. SELECTA, s.a.		Número de certificador:	100
		Number of certificate:	
CERTIFICADO DE CALIBRACIÓN			
CALIBRATION RECORD			
			Pag. 1 of 1
1. Identificación:			
Fecha calibración:	11/05/08		
Código copa (Code):	7001020		
Norma (Standard):	ISO 2431 Ø 6		
Descripción (Description):	ISO 2431 Ø 6 Calefacción		
2. Patrón utilizado:			
Patrón utilizado:	C200		
Lote (Lot number):	97701		
Viscosidad patrón (Standard Viscosity):	468	(@20°C)	
3. Resultados de la medida:			
Tiempo 1 (Flow time 1):	69	(s)	
Tiempo 2 (Flow time 2):	67.1	(s)	
Media (Average):	68.05000	(s)	
Viscosidad (Viscosity):	461.17	(cSt)	
Temperatura (Temperature):	25 ± 0,5	(°C)	
4. Aceptación de la medida según la Norma:			
4.1 Repetibilidad:			
100*(Tiempo 1 - Media) / Media:	1.4	% (Max 5%)	Correcto
100*(Tiempo 2 - Media) / Media:	1.4	% (Max 5%)	Correcto
4.2 Error:			
100*(Media - Patrón) / Patrón:	1.5	% (Max 3%)	Correcto
Aprobado/Approved by:			
5			
Este documento no es válido si no va acompañado por el certificado del líquido patrón. This document is not acceptable if not attached with standard liquid certificate.			
J.P. SELECTA, s.a. es una empresa certificada ISO 9001 y los equipos de medida se calibran adecuadamente y con trazabilidad a patrones reconocidos. J.P. SELECTA, s.a. is a company ISO 9001 certified and our measurement facilities are properly calibrated and traceable to recognized standards.			
J.P. SELECTA, s.a., Ctra. NU Km 585,1, Abrera (Barcelona) SPAIN 08630 Tel: (93) 770 08 77 Fax: (93) 770 23 62			



Ford cup thermostat for viscosity measurement "TV-1452"

CUP MODELS THAT CONFORM TO THE FOLLOWING STANDARDS: DIN 53211, ISO 2431 AND ASTM 1200.
ELECTRONIC DIGITAL CONTROL FROM 10°C TO 60°C.

Heating and cooling by Peltier effect

APPLICATIONS

Thermostat Ford cups for viscosity measurement need to be maintained at a precise temperature of 10 and 60 °C.

FEATURES

Made up of an independent Peltier thermostat control system that heats and cools. Made from AISI 304 stainless steel, with adjustable levelling feet supports, and central orifice for locating the cup.

CONTROL PANEL

Illuminate ON/OFF switch
Digital temperature display
Key pad to select readout and temperature.

MODEL

Part No.	Temperature °C	Stability °C	Homogeneity °C	Read error	Resolution	Height / Width / Depth cm	Power W	Weight Kg
3001452	10 to 60 °C	±0.1	±0.2	±0.5	0.1	23 34 30	130	5



See the different standards, models and cups (see page 289.)



Viscometer Precision Bath "VB-1423"

FOR CONTROLLABLE TEMPERATURES FROM AMB.+5 °C TO 100 °C.
STABILITY ±0.1 °C. HOMOGENEITY ±0.1 °C. READING ERROR ±0.09 °C. RESOLUTION 0.1 °C.

SAFETY:

STANDARD DIN 12879.2 CONTROLLABLE SAFETY THERMOSTAT WITH MANUAL RESET.

FEATURES

Temperature sensor Pt100 thermo-resistor, stainless steel AISI 304 lid with three viscometer locations ports, three independent lids and an additional location port for the control thermometer. The main body of the bath is made of a 20 litre borosilicate glass tank. A white plate is located at the back to help optimise and read the viscometers.

CONTROL PANEL

- Mains power illuminated switch.
- Temperature regulator:
 - Real time temperature display.
 - Push button to increase value.
 - Push button to decrease value.
 - Push button to configure operation.
- Safety thermostat safety lamp.



Used for measurements with glass viscometers

Made for the calibration of viscometers according to the following standards UNE 400313, ISO 3105, ASTM D 445 and 2515

MODEL

Part No.	Control range °C	Capacity litres	Height / Ø (tank) cm	Height / Ø (total) cm	Power W	Weight Kg
3001423	amb.+5 up to 100	20	32 30	47 30	1000	8



ACCESSORIES

Universal viscometer support made from PTFE with stainless steel AISI 304 support. Suitable for the following viscometers :

- Cannon-Fenske for transparent liquids.
- Cannon-Fenske for opaque liquids.
- Ubbelohde.
- Ostwald.
- BS U Tube.
- Cannon-Manning semi-micro.
- Ubbelohde type BS/IP/SL, BS/IP/SL(S) & type BS/IP/MSL.
- DIN Ubbelohde.

Part No. **1001453**

Calibration Chronometers (see page 295).

Thermometers for viscometer baths.

- Part No.
- 1001454** Thermometer ASTM 120C at 38.6 to 41.4°C divisions 0.05 °C.
 - 1001455** Thermometer ASTM 121C at 98.6 to 101.4 °C divisions 0.05 °C.
 - 1001456** Thermometer ASTM 91C at 20.0 to 50.0 °C divisions 0.1 °C.
 - 1001457** Thermometer ASTM 92C at 40.0 to 70.0 °C divisions 0.1 °C.
 - 1001458** Thermometer ASTM 93C at 60.0 to 90.0 °C divisions 0.1 °C.
 - 1001459** Thermometer ASTM 94C at 80.0 to 110.0 °C divisions 0.1 °C.

COMECTA Glass Viscometers

VISCOMETER "UBBELOHDE"

ASTM D445 - ASTM D446 - ISO 3104 - ISO 3105.
 Suitable for transparent liquids.
 Complete with calibration certificate.
 Total length 283 mm.
 Permanent amber markings.

ACCESSORY

Viscometers support rack.
 Part No. **1025812**
 Capacity:
 6 viscometers.

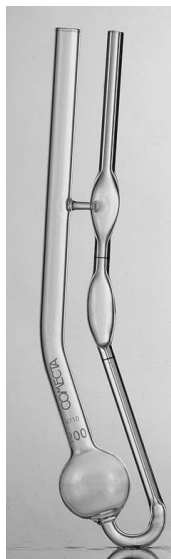


Ubbelohde

Part No.	Size	Nominal constant	Viscosity range in cSt
5600001	0	0.001	0.3 to 1
5600002	0C	0.003	0.6 to 3
5600003	0B	0.005	1 to 5
5600004	1	0.01	2 to 10
5600005	1C	0.03	6 to 30
5600006	1B	0.05	10 to 50
5600007	2	0.1	20 to 100
5600008	2C	0.3	60 to 300
5600009	2B	0.5	100 to 500
5600010	3	1.0	200 to 1000
5600011	3C	3.0	600 to 3000
5600012	3B	5.0	1000 to 5000
5600013	4	10.0	2000 to 10000
5600014	4C	30.0	6000 to 30000

VISCOMETERS "CANNON-FENSKE" TRANSPARENT

ASTM D445 - ASTM D446 - ISO 3104 - ISO 3105 - IP 71.
 Suitable for transparent liquids.
 Complete with calibration certificate.
 Constant at 40 °C to 100 °C.
 Total length 250 mm.
 Permanent amber markings.

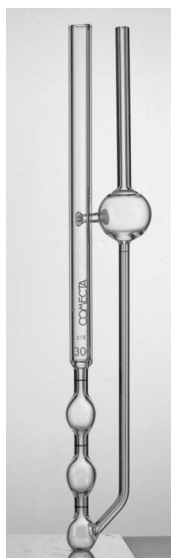


Transparent

Part No.	Size	Nominal constant	Viscosity range in cSt
5600050	25	0,002	0,4 a 1,6
5600051	50	0,004	0,8 a 3,2
5600052	75	0,008	1,6 a 6,4
5600053	100	0,015	3 a 15
5600054	150	0,035	7 a 35
5600055	200	0,1	20 a 100
5600056	300	0,25	50 a 200
5600057	350	0,5	100 a 500
5600058	400	1,2	240 a 1200
5600059	450	2,5	500 a 2500
5600060	500	8	1600 a 8000
5600061	600	20	4000 a 20000

VISCOMETERS "CANNON-FENSKE" OPAQUE

ASTM D445 - ASTM D446 - ISO 3104 - ISO 3105.
 Suitable for opaque and transparent liquids.
 Complete with calibration certificate.
 Constant at 40 °C and 100 °C.
 Total length 295 mm.
 Permanent amber markings.



Opaque

Part No.	Size	Nominal constant	Viscosity range in cSt
5600065	25	0,002	0,4 a 1,6
5600066	50	0,004	0,8 a 3,2
5600067	75	0,008	1,6 a 6,4
5600068	100	0,015	3 a 15
5600069	150	0,035	7 a 35
5600070	200	0,1	20 a 100
5600071	300	0,25	50 a 200
5600072	350	0,5	100 a 500
5600073	400	1,2	240 a 1200
5600074	450	2,5	500 a 2500
5600075	500	8	1600 a 8000
5600076	600	20	4000 a 20000

MICRO-UBBELOHDE VISCOMETER 3 ml

Suitable for transparent liquids.
 Calibration certificate.
 Nominal overall length 290 mm.
 Permanent ring marks in amber.
 Sample filling volume: 3 ml.



Micro-Ubbelohde

Code	Size	Nominal constant	Viscosity range in cSt
5600020	I	0,01	0,4 to 6
5600021	Ic	0,03	1,2 to 18
5600022	II	0,1	4 to 60
5600023	IIc	0,3	12 to 180
5600024	III	1,0	40 to 800

“U-TUBE REVERSE FLOW” VISCOMETER BS/IP/RF

Suitable for opaque liquids.
 With calibration certificate at 40 and 100 °C.
 Nominal overall length 275 mm.
 Permanent ring marks in amber.



U-Tube reverse flow

Code	Size	Nominal constant	Viscosity range in cSt
5600025	1	0,003	0,6 to 3
5600026	2	0,01	2 to 10
5600027	3	0,03	6 to 30
5600028	4	0,1	20 to 100
5600029	5	0,3	60 to 300
5600030	6	1,0	200 to 1000
5600031	7	3,0	600 to 3000
5600032	8	10	2000 to 10000
5600033	9	30	6000 to 30000
5600034	10	100	20000 to 100000
5600035	11	300	60000 to 300000

BS/U TUBE VISCOMETER

Suitable for transparent liquids.
 With calibration certificate at 40 and 100 °C.
 Nominal overall length 300 mm.
 Permanent ring marks in amber.



BS/U Tube

Code	Size	Nominal constant	Viscosity range in cSt
5600036	A	0,003	0,9 to 3
5600037	B	0,01	2 to 10
5600038	C	0,03	6 to 30
5600039	D	0,1	20 to 100
5600040	E	0,3	60 to 300
5600041	F	1,0	200 to 1000
5600042	G	3,0	600 to 3000
5600043	H	10,0	2000 to 10000

OSTWALD PATTERN VISCOMETER

Suitable for transparent liquids.
 Calibration certificate at 20°C.
 Nominal overall length 250 mm.
 Permanent ring marks in amber.
 Sample filling volume 10 ml.



Ostwald

Code	Size	Nominal constant	Efflux time between ring marks Water at 20 °C. (seconds)
5600044	45	0,022	45
5600045	85	0,011	85
5600046	100	0,01	100
5600047	125	0,008	125