



sartorius

## Practum<sup>®</sup>

### Benefits

- Unmatched reliability with the world-class weighing instrument
- Overload protection for years of reliability
- Supervisor Lock
- Fast and easy data transfer



### Product Information

Get best value for your money, without compromises in precision and reliability. Rely on consistent readings and excellent repeatability ensured by Sartorius quality and technology developed and designed in Germany.

### Technical Specifications

#### AC Adapter

Sartorius AC adaptor 6971790 with interchangeable country-specific plug-in AC adaptors

Primary 100–240 V~, –10% | +10%, 50–60 Hz, 0.2 A

Secondary 15 V DC, ± 5%, 530 mA (max.) | 8 Watt (max.): 0 to +40 °C and 15 V DC, ± 5%, 330 mA (max.) | 5 Watt (max.): 0 to +50 °C

Other data protection class II, in accordance with EN | IEC 60950-1 up to 3000 m above sea level; IP40 as per EN | IEC 60529

#### Balance

Power supply only via Sartorius AC adaptor module 6971790

Input voltage 12.0 ... 18.0 V DC

Power consumption 2 W (typically)

### Ambient Conditions

The specifications apply when the following ambient conditions are in place:

Environment for indoor use only

Ambient temperature\* +10 °C to +30 °C

Operational capacity guaranteed between +5 °C and +45 °C

Storage and shipping -10 °C to +60 °C

Elevation up to 3,000 m above sea level

Relative humidity\*\* 15% to 80% for temperatures up to 31 °C; non-condensing, decreasing linearly to 50% relative humidity at 40 °C and 20% at 50 °C

Safety of electrical equipment in accordance with EN 61010-1 | IEC 61010-1. Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General requirements

Electromagnetic compatibility in accordance with EN 61326-1 | IEC 61326-1. Electrical equipment for measurement, control, and laboratory use – EMC requirements – Part 1: General requirements

Defined immunity to interference Suitable for use in industrial areas

Interference emission Class B (suitable for use in residential areas and areas that are connected to a low voltage network that also supplies residential buildings). The device can therefore be used in both areas.

Verified balances in accordance with EU requirements comply with the requirements of Council Directive 2009/23/EC with EN 45501:1992 and OIML R76:2006.

\* For verified balances in accordance with EU requirements, refer to the information on the balance.

\*\* For verified balances in accordance with EU requirements, the legal regulations apply.

### Standard Equipment

Levelling Glass level indicator with air bubble for centering

Calibration External calibration

Selectable weight units Gram, kilogram, carat, pound, ounce, troy ounce, Hong Kong tael, Singapore tael, Taiwan tael, grain, pennyweights, milligram, parts per pound, China tael, mommes, Austrian carat, tola, baht, mesghal and Newton

Interface mini USB  
– Automatic recognition of Sartorius printer YDP40  
– Direct data transfer to Microsoft® Windows programs  
– Programmable interval for data output  
– Data transfer protocols SBI, table format, text format

Display Touch screen with Sartorius graphical user interface

Standard built-in applications Weighing, Density, Percentage, Checkweighing, Peak Hold, Counting, Unstable Conditions (Animal Weighing)

Languages English, French, German, Hungarian, Italian, Polish, Portuguese, Russian, Spanish, Turkish, Chinese, Japanese, Korean

Protection  
– Rugged, easy-to-clean housing  
– In-use cover  
– Dust cover for analytical balances

Password protection Supervisor lock for protection against unintentional changes

Anti-theft lock Kensington lock and lockdown capability for cable or chain

Underfloor weighing Integrated



Design 1



Design 2



Design 3

## Standard Models

Model		224-1x <sup>1)</sup>	124-1x <sup>1)</sup>	64-1x <sup>1)</sup>	513-1x <sup>1)</sup>	313-1x <sup>1)</sup>	213-1x <sup>1)</sup>
Design		1	1	1	2	2	2
Weighing capacity	g	220	120	60	510	310	210
Readability	mg	0.1	0.1	0.1	1	1	1
Repeatability (standard deviation)	mg	0.1	0.1	0.1	1	1	1
Linearity deviation	mg	0.2	0.2	0.2	2	2	2
Sensitivity drift between +10 °C and +30 °C	± ppm/K	2	2	2	3	3	3
Typical stabilization time	s	2	2	2	1	1	1
Weighing pan size	mm	∅ 90	∅ 90	∅ 90	∅ 120	∅ 120	∅ 120
Weighing chamber height*	mm	209	209	209	209	209	209
Net weight, approx.	kg	4.5	4.5	4.5	4.9	4.9	4.9
Dimensions, D x W x H	mm	360 x 216 x 320					
	Inch	14.1 x 8.5 x 12.6					

Model		3102- 1x <sup>1)</sup>	2102- 1x <sup>1)</sup>	1102- 1x <sup>1)</sup>	612- 1x <sup>1)</sup>	412- 1x <sup>1)</sup>	6101- 1x <sup>1)</sup>	5101- 1x <sup>1)</sup>	2101- 1x <sup>1)</sup>	6100- 1x <sup>1)</sup>	5100- 1x <sup>1)</sup>
Design		3	3	3	3	3	3	3	3	3	3
Weighing capacity	g	3,100	2,100	1,100	610	410	6,100	5,100	2,100	6,100	5,100
Readability	mg	10	10	10	10	10	100	100	100	1,000	1,000
Repeatability (standard deviation)	mg	10	10	10	10	10	100	100	100	500	500
Linearity deviation	mg	30	30	30	30	30	300	300	300	1,000	1,000
Sensitivity drift between +10 °C and +30 °C	± ppm/K	4	4	4	4	4	8	8	8	8	8
Typical stabilization time	s	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1	1
Weighing pan size	mm	∅ 180	∅ 180	∅ 180	∅ 180	∅ 180	∅ 180	∅ 180	∅ 180	∅ 180	∅ 180
Net weight, approx.	kg	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Dimensions, D x W x H	mm	360 x 216 x 95									
	Inch	14.1 x 8.5 x 3.75									

\* Upper edge of the weighing pan to the lower edge of the upper draft shield panel

<sup>1)</sup> Possible terms for country-specific models:

x = S: Standard balances without country-specific additions

x = SAR: Standard balances with country-specific additions for Argentina

x = SJP: Standard balances with country-specific additions for Japan

x = SKR: Standard balances with country-specific additions for South Korea

## Verified Models with Country-specific Type Approval Certificate

Model		224-1x <sup>2)</sup>	124-1x <sup>2)</sup>	64-1x <sup>2)</sup>	513-1x <sup>2)</sup>	313-1x <sup>2)</sup>	213-1x <sup>2)</sup>
Design		1	1	1	2	2	2
Accuracy class		Ⓡ	Ⓡ	Ⓡ	Ⓢ	Ⓢ	Ⓢ
Type <sup>3)</sup>		SQP-A	SQP-A	SQP-A	SQP-B	SQP-B	SQP-B
Max	g	220	120	60	510	310	210
Scale interval d	mg	0.1	0.1	0.1	1	1	1
Verification scale interval e	mg	1	1	1	10	10	10
Min	mg	10	10	10	20	20	20
Min	mg	100	100	100	200	200	200
(only for Models ...-10IN)							
Tare equalization range (subtractive)		< 100% from max. weighing capacity					
Typical stabilization time	s	2	2	2	1	1	1
Weighing pan size	mm	∅ 90	∅ 90	∅ 90	∅ 120	∅ 120	∅ 120
Weighing chamber height*	mm	209	209	209	209	209	209
Net weight, approx.	kg	4.5	4.5	4.5	4.9	4.9	4.9
Dimensions, D × W × H	mm	360 × 216 × 320					
	Inch	14.1 × 8.5 × 12.6					

Model		3102-1x <sup>2)</sup>	2102-1x <sup>2)</sup>	1102-1x <sup>2)</sup>	612-1x <sup>2)</sup>	6101-1x <sup>2)</sup>	5101-1x <sup>2)</sup>	6100-1x <sup>2)</sup>	5100-1x <sup>2)</sup>
Design		3	3	3	3	3	3	3	3
Accuracy class		Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
Type <sup>3)</sup>		SQP-C	SQP-C	SQP-C	SQP-C	SQP-E	SQP-E	SQP-E	SQP-E
Max	g	3,100	2,100	1,100	610	6,100	5,100	6,100	5,100
Scale interval d	mg	10	10	10	10	100	100	1,000	1,000
Verification scale interval e	mg	100	100	100	100	1,000	1,000	1,000	1,000
Min	g	0.5	0.5	0.5	0.5	5	5	50	50
Min	g	5	5	5	5	50	50	50	50
(only for Models ...-10IN)									
Tare equalization range (subtractive)		< 100% from max. weighing capacity							
Typical stabilization time	s	1.5	1.5	1.5	1.5	1.5	1.5	1	1
Weighing pan size	mm	∅ 180	∅ 180	∅ 180	∅ 180	∅ 180	∅ 180	∅ 180	∅ 180
Net weight, approx.	kg	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Dimensions, D × W × H	mm	360 × 216 × 95							
	Inch	14.1 × 8.5 × 3.75							

\* Upper edge of the weighing pan to the lower edge of the upper draft shield panel

<sup>2)</sup> Possible terms for country-specific models:

x = CN: CMC Type Approval Certificate for China

x = OJP: Balance with Type Approval Certificate for Japan

x = OBR: Balance with Type Approval Certificate for Brazil

x = ORU: Balance with Type Approval Certificate for Russia

x = OIN: Balance with Type Approval Certificate for India

x = OAU: Balance with Type Approval Certificate for Australia

<sup>3)</sup> All models with "...CN": type "SQP"

## Optional Accessories

### Printers and Communications

Standard Laboratory Printer	YDP40
– Printer paper for standard laboratory printer	69Y03287
Data Cable Mini USB   USB A	YCC04-D09
Date Cable Mini USB   RS232 9-pin	YCC03-D09
Date Cable Mini USB   RS232 25-pin	YCC03-D25

### General

Battery Pack for Standard Lab Balances	YRB11Z
Draft shield for balances with a readability of 0.01 g   0.1 g   1 g	YDS01SQP
Draft shield for balances with a readability of 1 mg	YDS02SQP
In-use cover for balances with a readability of 0.1 mg and 1 mg	6960SE01
In-use cover for balances with a readability of 0.01 g   0.1 g   1g	6960SE02
Dust cover for balances with a readability of 0.1 mg   1 mg	6960SE03

### Density Determination

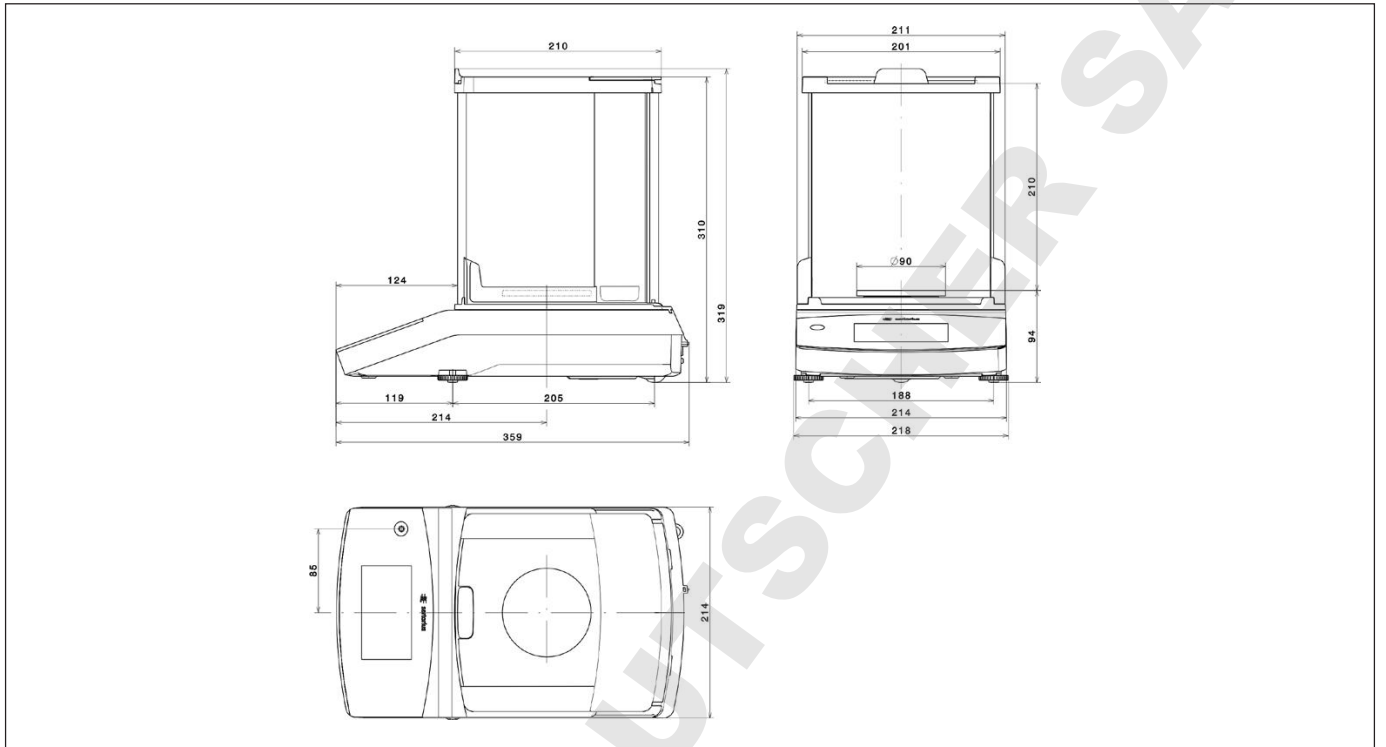
Density kit for balances with a readability of 0.1 mg   1 mg	YDK03
Density kit for balances with a readability of 0.01 g   0.1 g   1g	YDK04

### Calibration Weights

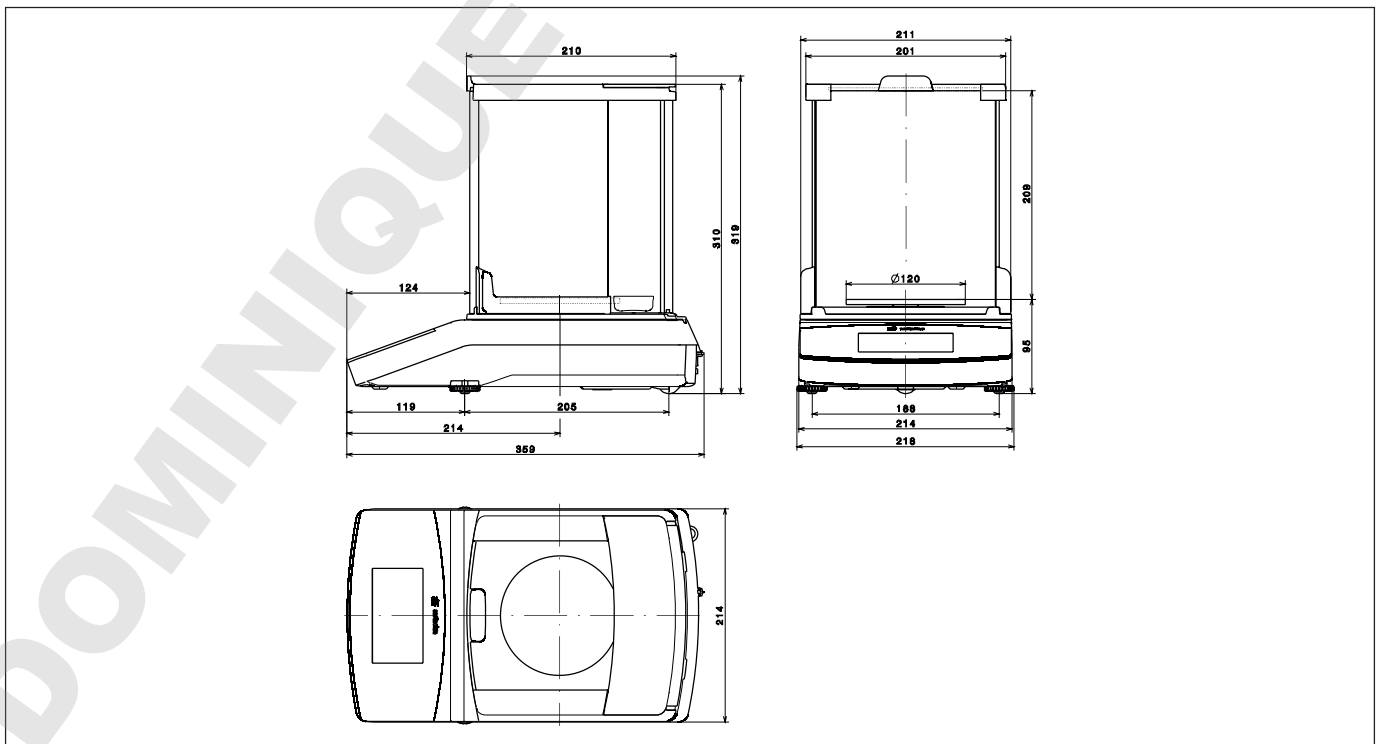
Calibration Weight for lab balance model 224; 313; 213 – Proof Line knob weight 200 g, OIML class E2, with DAkkS certificate	YCW522-AC-02
Calibration Weight for lab balance model 124 – Proof Line knob weight 100 g, OIML class E2, with DAkkS certificate	YCW512-AC-02
Calibration Weight for lab balance model 64 – Proof Line knob weight 50 g, OIML class E2, with DAkkS certificate	YCW452-AC-02
Calibration Weight for lab balance model 513 – Proof Line knob weight 500 g, OIML class E2, with DAkkS certificate	YCW552-AC-02
Calibration Weight for lab balance model 3102; 2102 – Proof Line knob weight 2 kg, OIML class F1, with DAkkS certificate	YCW623-AC-02
Calibration Weight for lab balance model 1102 – Proof Line knob weight 1 kg, OIML class F1, with DAkkS certificate	YCW613-AC-02
Calibration Weight for lab balance model 612 – Proof Line knob weight 500 g, OIML class F1, with DAkkS certificate	YCW553-AC-02
Calibration Weight for lab balance model 412 – Proof Line knob weight 200 g, OIML class F1, with DAkkS certificate	YCW523-AC-02
Calibration Weight for lab balance model 6101; 5101; 6100; 5100 – Proof Line knob weight 5 kg, OIML class F2, with DAkkS certificate	YCW654-AC-02
Calibration Weight for lab balance model 2101 – Proof Line knob weight 2 kg, OIML class F2, with DAkkS certificate	YCW624-AC-02

## Technical Drawings

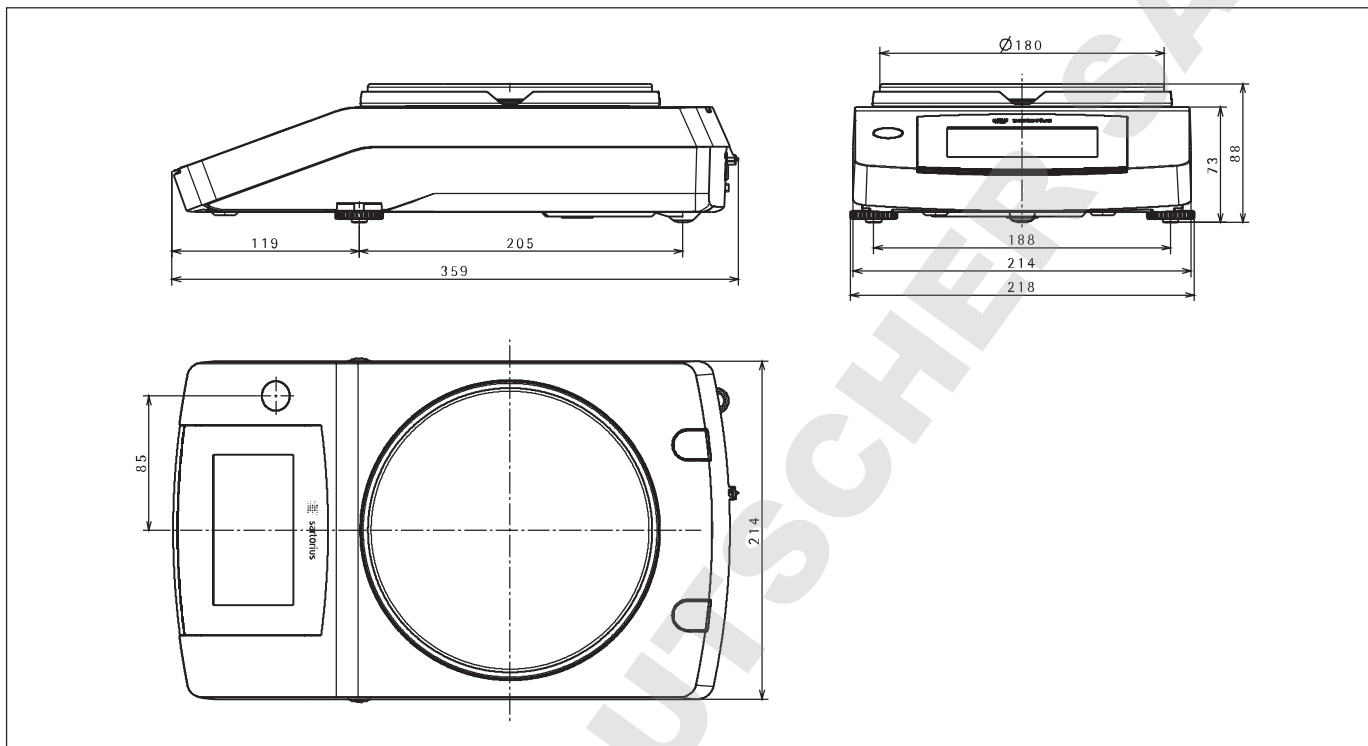
Models with a readability of 0.1 mg,  
in mm



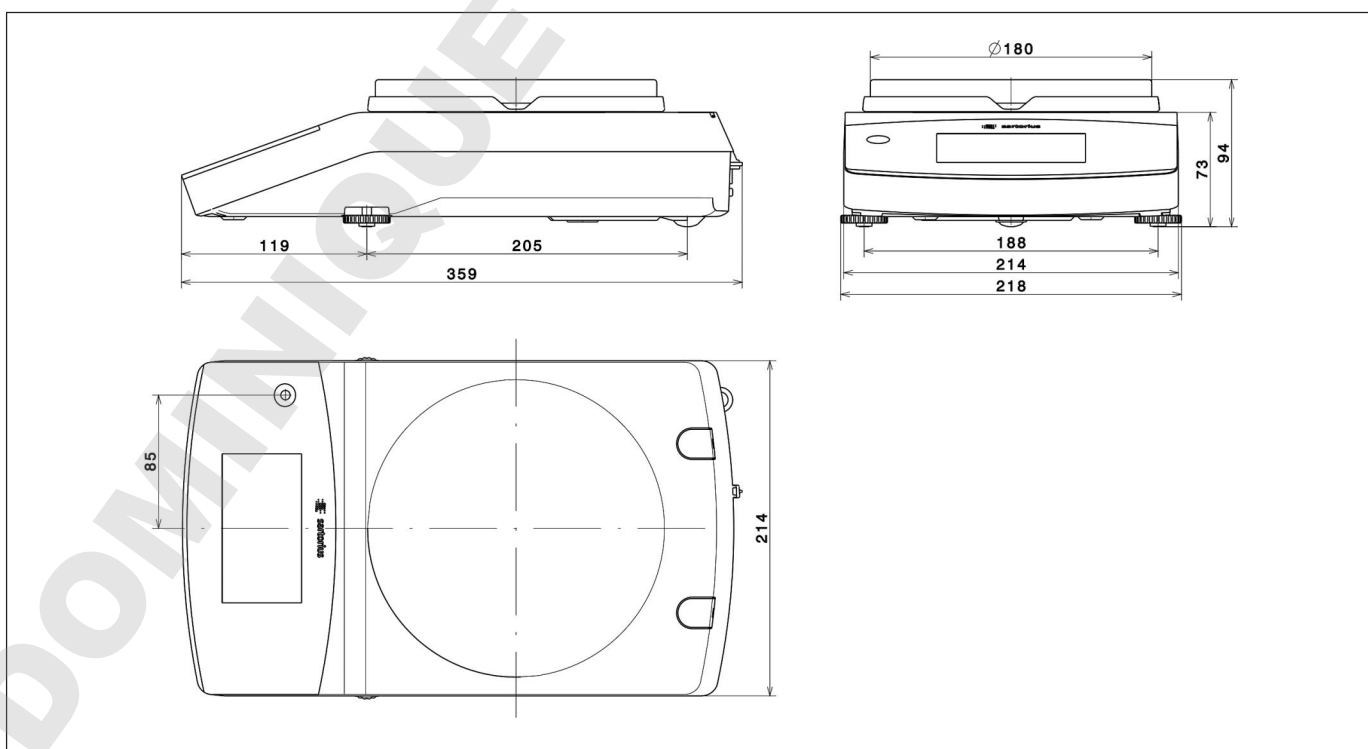
Models with a readability of 1 mg,  
in mm



Models with a readability of  $\geq 10$  mg (exclude 3102),  
in mm



Models with a readability of 10 mg and a capacity of  $\geq 3,100$  g,  
in mm



# Sales and Service Contacts

For further contacts, visit [www.sartorius.com](http://www.sartorius.com)

## Europe

**Germany**  
Sartorius Lab Instruments  
GmbH & Co. KG  
Weender Landstrasse 94–108  
37075 Goettingen  
Phone +49.551.308.0  
Fax +49.551.308.3289

**France Et Suisse Romande**  
Sartorius France  
2, rue Antoine Laurent de Lavoisier  
ZA de la Gaudriée  
91410 Dourdan  
Phone +33.1.70.62.50.00  
Fax +33.1.64.59.76.39

**Austria**  
Sartorius Austria GmbH  
Modecenterstrasse 22  
1030 Vienna  
Phone +43.1.7965760.0  
Fax +43.1.7965760.24

**Belgium**  
Sartorius Belgium N.V.  
Rue Colonel Bourg 105  
1030 Bruxelles  
Phone +32.2.756.06.90  
Fax +32.2.481.84.11

**Finland Et Baltics**  
Sartorius Biohit Liquid Handling Oy  
Laippatie 1  
00880 Helsinki  
Phone +358.9.755.951  
Fax +358.9.755.95.200

**Hungary**  
Sartorius Hungária Kft.  
Kagyló u. 5.  
2092 Budakeszi  
Phone +3623.457.227  
Fax +3623.457.147

**Ireland**  
Sartorius Ireland Ltd.  
Unit 41, The Business Centre  
Stadium Business Park  
Ballycoolin Road  
Dublin 11  
Phone +353.1.8089050  
Fax +353.1.8089388

**Italy**  
Sartorius Italy S.r.l.  
Viale A. Casati, 4  
20835 Muggiò (MB)  
Phone +39.039.4659.1  
Fax +39.039.4659.88

**Netherlands**  
Sartorius Netherlands B.V.  
Phone +31.30.60.53.001  
Fax +31.30.60.52.917  
[info.netherlands@sartorius.com](mailto:info.netherlands@sartorius.com)

**Poland**  
Sartorius Poland sp.z o.o.  
ul. Wrzesinska 70  
62-025 Kostrzyn  
Phone +48.61.6473830  
Fax +48.61.6473839

**Russian Federation**  
LLC "Sartorius RUS"  
Uralskaya str. 4, Lit. B  
199155 St. Petersburg  
Phone +7.812.327.53.27  
Fax +7.812.327.53.23

**Spain Et Portugal**  
Sartorius Spain, S.A.  
Avda. de la Industria, 32  
Edificio PAYMA  
28108 Alcobendas (Madrid)  
Phone Spain +34.902.123.367  
Phone Portugal +351.800.855.800  
Fax Spain +34.91.358.96.23  
Fax Portugal +351.800.855.799

**Switzerland**  
Sartorius Mechatronics Switzerland AG  
Ringstrasse 24a  
8317 Tagelswangen (ZH)  
Phone +41.44.746.50.00  
Fax +41.44.746.50.50

**U.K.**  
Sartorius UK Ltd.  
Longmead Business Centre  
Blenheim Road, Epsom  
Surrey KT19 9QQ  
Phone +44.1372.737159  
Fax +44.1372.726171

**Ukraine**  
LLC "Biohit"  
Post Box 440 "B"  
01001 Kiev, Ukraine  
Phone +380.44.411.4918  
Fax +380.50.623.3162

## Americas

**USA**  
Sartorius Corporation  
5 Orville Drive, Suite 200  
Bohemia, NY 11716  
Phone +1.631.254.4249  
Toll-free +1.800.635.2906  
Fax +1.631.254.4253

**Argentina**  
Sartorius Argentina S.A.  
Int. A. Ávalos 4251  
B1605ECS Munro  
Buenos Aires  
Phone +54.11.4721.0505  
Fax +54.11.4762.2333

**Brazil**  
Sartorius do Brasil Ltda  
Avenida Senador Vergueiro 2962  
São Bernardo do Campo  
CEP 09600-000 – SP– Brasil  
Phone +55.11.4362.8900  
Fax +55.11.4362.8901

**Canada**  
Sartorius Canada Inc.  
2179 Dunwin Drive #4  
Mississauga, ON L5L 1X2  
Phone +1.905.569.7977  
Toll-Free +1.800.668.4234  
Fax +1.905.569.7021

**Mexico**  
Sartorius de México S.A. de C.V.  
Circuito Circunvalación Poniente  
No. 149  
Ciudad Satélite  
53100, Estado de México  
México  
Phone +52.5555.62.1102  
Fax +52.5555.62.2942

## Asia | Pacific

**Australia**  
Sartorius Australia Pty. Ltd.  
Unit 5, 7-11 Rodeo Drive  
Dandenong South Vic 3175  
Phone +61.3.8762.1800  
Fax +61.3.8762.1828

**China**  
Sartorius (Shanghai) Trading Co., Ltd.  
3rd Floor, North Wing, Tower 1  
No. 4560 Jinke Road  
Zhangjiang Hi-Tech Park  
Pudong District  
Shanghai 201210, P.R. China  
Phone +86.21.6878.2300  
Fax +86.21.6878.2882

**Hong Kong**  
Sartorius Hong Kong Ltd.  
Unit 1012, Lu Plaza  
2 Wing Yip Street  
Kwun Tong  
Kowloon, Hong Kong  
Phone +852.2774.2678  
Fax +852.2766.3526

**India**  
Sartorius Weighing India Pvt. Ltd.  
#69/2-69/3, NH 48, Jakkasandra,  
Nelamangala Tq  
562 123 Bangalore, India  
Phone +91.80.4350.5250  
Fax +91.80.4350.5253

**Japan**  
Sartorius Japan K.K.  
4th Fl., Daiwa Shinagawa North Bldg.  
8-11, Kita-Shinagawa 1-chome  
Shinagawa-ku, Tokyo, 140-0001 Japan  
Phone +81.3.3740.5408  
Fax +81.3.3740.5406

**Malaysia**  
Sartorius Malaysia Sdn. Bhd  
Lot L3-F-3B, Enterprise 4  
Technology Park Malaysia  
Bukit Jalil  
57000 Kuala Lumpur, Malaysia  
Phone +60.3.8996.0622  
Fax +60.3.8996.0755

**Singapore**  
Sartorius Singapore Pte. Ltd  
1 Science Park Road,  
The Capricorn, #05-08A,  
Singapore Science Park II  
Singapore 117528  
Phone +65.6872.3966  
Fax +65.6778.2494

**South Korea**  
Sartorius Korea Ltd.  
8th Floor, Solid Space B/D,  
PanGyoYeok-Ro 220, Bundang-Gu  
SeongNam-Si, GyeongGi-Do, 463-400  
Phone +82.31.622.5700  
Fax +82.31.622.5799

**Thailand**  
Sartorius (Thailand) Co. Ltd.  
129 Rama 9 Road,  
Huaykwang  
Bangkok 10310  
Phone +66.2643.8361-6  
Fax +66.2643.8367



◀ [www.sartorius.com](http://www.sartorius.com)