



Practum[®]

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 module	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
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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
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Defined immunity to interference	Suitable for use in industrial areas
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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.
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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 ¹⁾	124-1x ¹⁾	64-1x ¹⁾	513-1x ¹⁾	313-1x ¹⁾	213-1x ¹⁾
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 × W × H	mm	360 × 216 × 320					
	Inch	14.1 × 8.5 × 12.6					

Model		3102- 1x ¹⁾	2102- 1x ¹⁾	1102- 1x ¹⁾	612- 1x ¹⁾	412- 1x ¹⁾	6101- 1x ¹⁾	5101- 1x ¹⁾	2101- 1x ¹⁾	6100- 1x ¹⁾	5100- 1x ¹⁾
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 × 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

¹⁾ 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 ²⁾	124-1x ²⁾	64-1x ²⁾	513-1x ²⁾	313-1x ²⁾	213-1x ²⁾
Design		1	1	1	2	2	2
Accuracy class		Ⓡ	Ⓡ	Ⓡ	Ⓢ	Ⓢ	Ⓢ
Type ³⁾		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 (only for Models ...-10IN)	mg	100	100	100	200	200	200
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 ²⁾	2102-1x ²⁾	1102-1x ²⁾	612-1x ²⁾	6101-1x ²⁾	5101-1x ²⁾	6100-1x ²⁾	5100-1x ²⁾
Design		3	3	3	3	3	3	3	3
Accuracy class		Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
Type ³⁾		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 (only for Models ...-10IN)	g	5	5	5	5	50	50	50	50
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

²⁾ 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

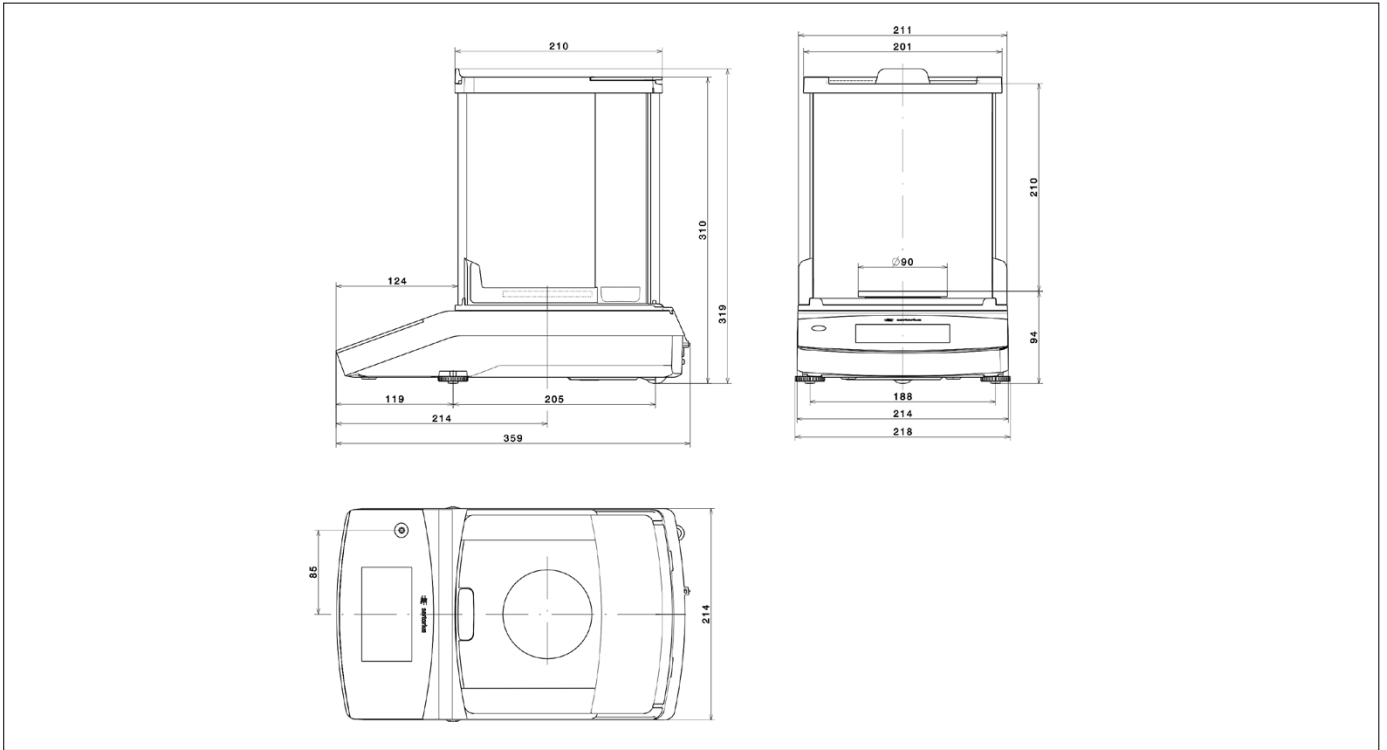
³⁾ All models with "...CN": type "SQP"

Optional Accessories

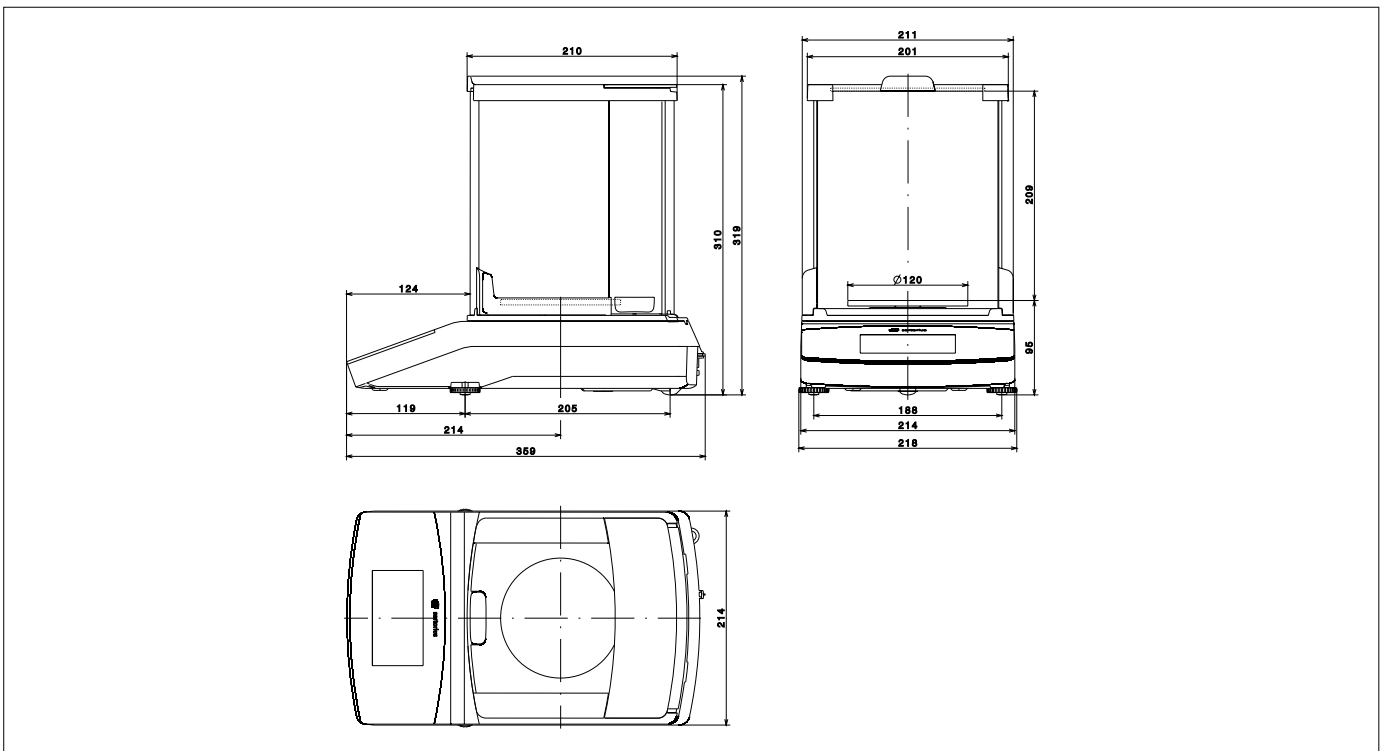
Printers and Communications	
Standard Laboratory Printer	YDP40
– Printer paper for standard laboratory printer	69Y03287
Data Cable Mini USB USB A	YCC04-D09
Date Cable Mini USB RS232 9-pin	YCC03-D09
Date Cable Mini USB RS232 25-pin	YCC03-D25
General	
Battery Pack for Standard Lab Balances	YRB11Z
Draft 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	YCW522-AC-02
– Proof Line knob weight 200 g, OIML class E2, with DAkkS certificate	
Calibration Weight for lab balance model 124	YCW512-AC-02
– Proof Line knob weight 100 g, OIML class E2, with DAkkS certificate	
Calibration Weight for lab balance model 64	YCW452-AC-02
– Proof Line knob weight 50 g, OIML class E2, with DAkkS certificate	
Calibration Weight for lab balance model 513	YCW552-AC-02
– Proof Line knob weight 500 g, OIML class E2, with DAkkS certificate	
Calibration Weight for lab balance model 3102; 2102	YCW623-AC-02
– Proof Line knob weight 2 kg, OIML class F1, with DAkkS certificate	
Calibration Weight for lab balance model 1102	YCW613-AC-02
– Proof Line knob weight 1 kg, OIML class F1, with DAkkS certificate	
Calibration Weight for lab balance model 612	YCW553-AC-02
– Proof Line knob weight 500 g, OIML class F1, with DAkkS certificate	
Calibration Weight for lab balance model 412	YCW523-AC-02
– Proof Line knob weight 200 g, OIML class F1, with DAkkS certificate	
Calibration Weight for lab balance model 6101; 5101; 6100; 5100	YCW654-AC-02
– Proof Line knob weight 5 kg, OIML class F2, with DAkkS certificate	
Calibration Weight for lab balance model 2101	YCW624-AC-02
– Proof Line knob weight 2 kg, OIML class F2, with DAkkS certificate	

Technical Drawings

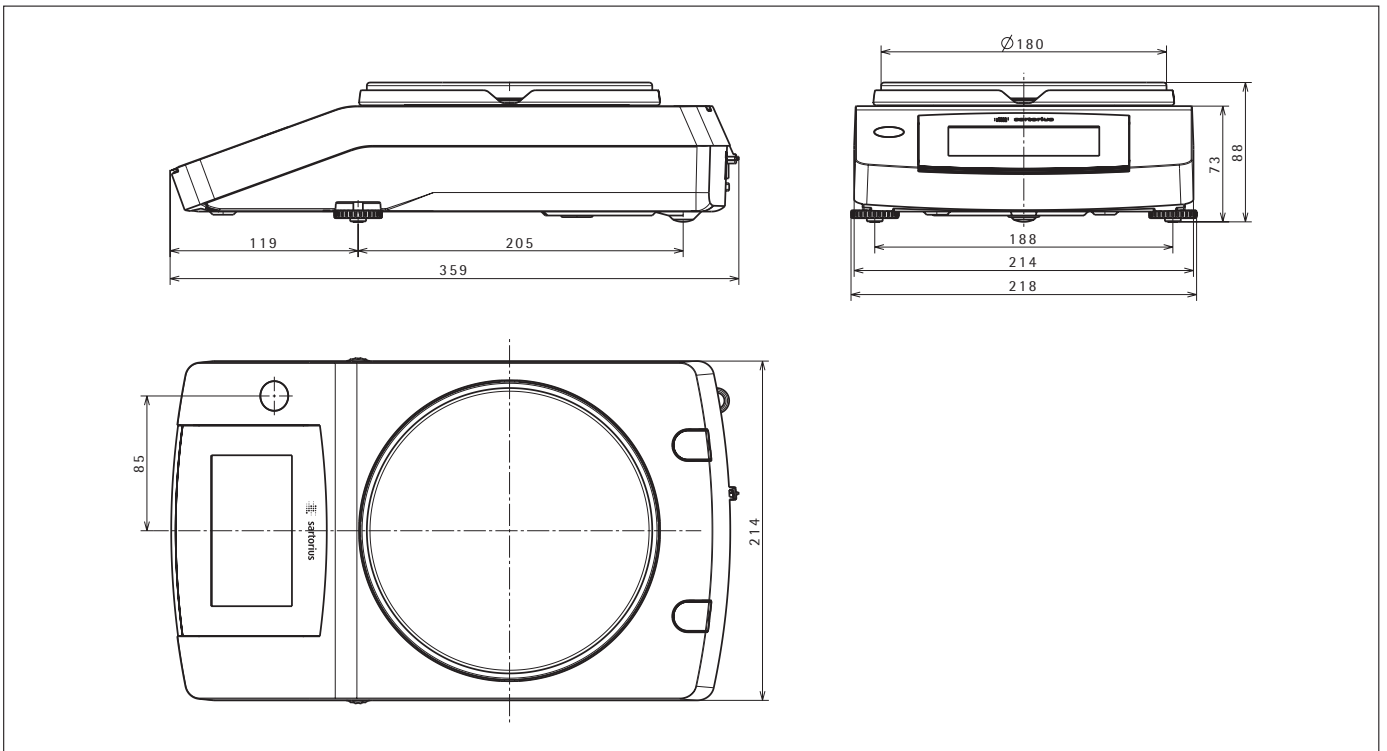
Models with a readability of 0.1 mg,
in mm



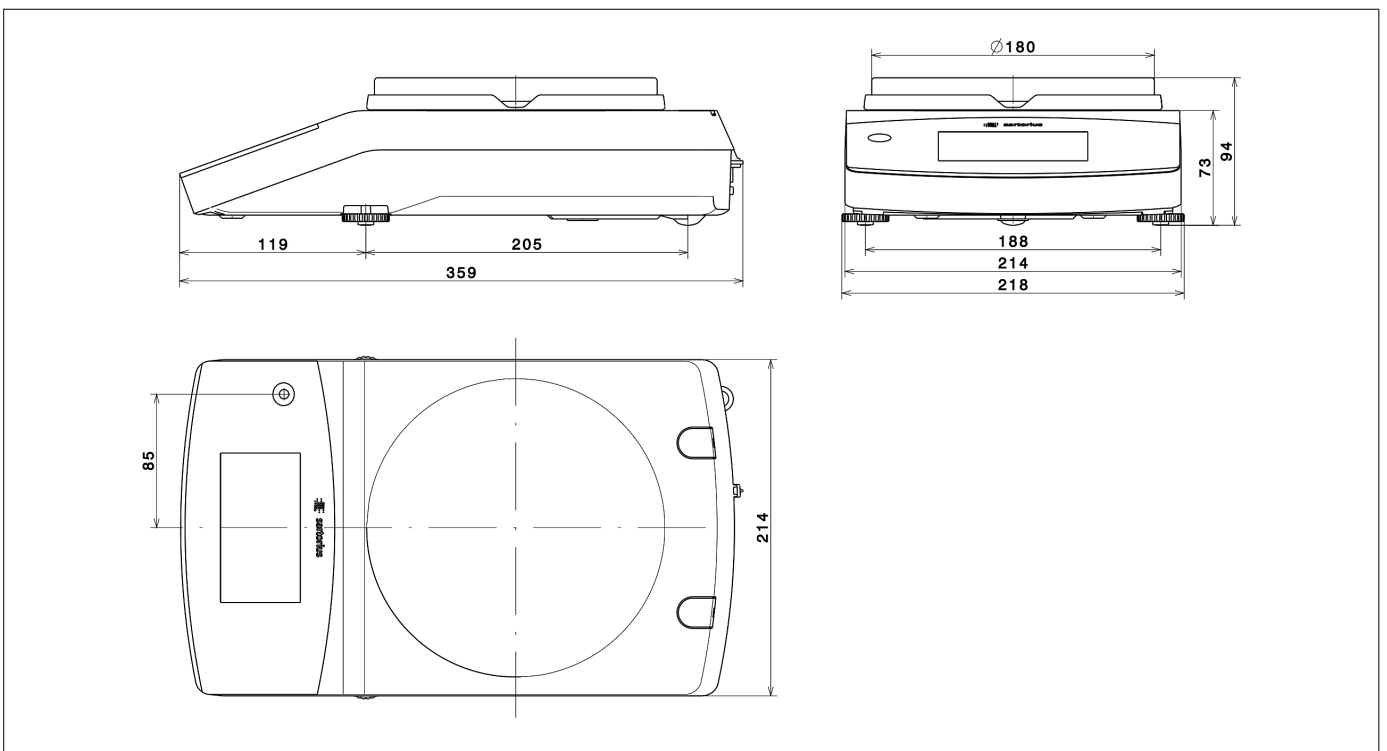
Models with a readability of 1 mg,
in mm



Models with a readability of ≥ 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

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 & Suisse Romande

Sartorius France
2, rue Antoine Laurent de Lavoisier
ZA de la Gaudrée
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 & 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

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 & 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. Avalos 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-E-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