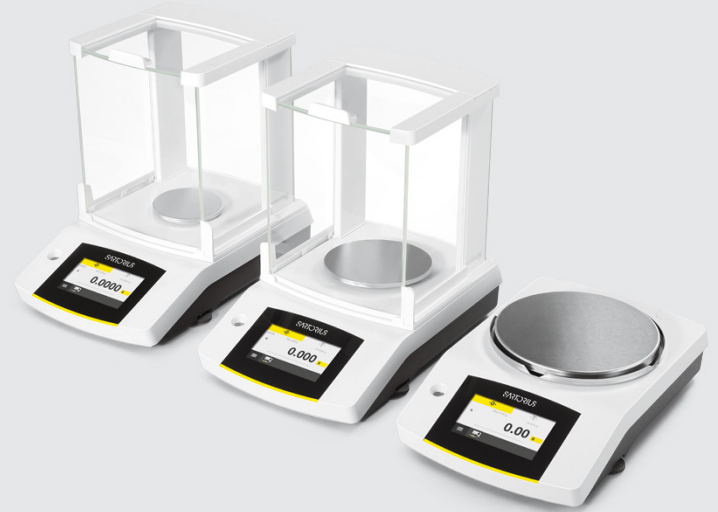


# Practum<sup>®</sup>

## Laboratory Balances



### 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	YEPS01-15V0W 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 YEPS01-15V0W
Input voltage	12.0 – 15.0 V DC
Power consumption	2.0 W (typically) 4.5 W (typically), only for 125D-1x, 65-1x and 35-1x

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 mea- surement, 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.

Balances verified for use in legal metrology comply with the requirements of Council Directive 2009 | 23 | EC, EN 45501:1992, and OIML R76:2006.

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

\*\* For balances verified for use in legal metrology 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 <ul style="list-style-type: none"> <li>▪ Automatic recognition of Sartorius printer models YDP30 or YDP40</li> <li>▪ PC-direct data transfer to Microsoft® Windows programs</li> <li>▪ Programmable interval for data output</li> <li>▪ Data transfer protocols SBI, xBPI, table format, text format</li> </ul>
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	<ul style="list-style-type: none"> <li>▪ Rugged, easy-to-clean housing</li> <li>▪ In-use cover</li> <li>▪ Dust cover for analytical balances</li> </ul>
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	Ø 90	Ø 90	Ø 90	Ø 120	Ø 120	Ø 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

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	Ø 180	Ø 180	Ø 180	Ø 180	Ø 180	Ø 180	Ø 180	Ø 180	Ø 180	Ø 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

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

<sup>1)</sup> Country-specific marking in model, x =

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		o	o	o	«	«	«
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
Tare equalization range (subtractive)		< 100% from max. weighing capacity					
Typical stabilization time	s	2	2	2	1	1	1
Weighing pan size	mm	Ø 90	Ø 90	Ø 90	Ø 120	Ø 120	Ø 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

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
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	Ø 180	Ø 180	Ø 180	Ø 180	Ø 180	Ø 180	Ø 180	Ø 180
Net weight, approx.	kg	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1

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

<sup>1)</sup> Country-specific marking in model, x =  
x = CN: Balances with approval for China  
x = OBR: Balances with approval for Brazil  
x = OIN: Balances with approval for India  
x = OJP: Balances with approval for Japan  
x = ORU: Balances with approval for Russ

<sup>2)</sup> All models with x = CN: type "SQP"

# Optional Accessories

## Printers and Communications

Standard Laboratory Printer - Printer paper for standard laboratory printer	YDP40 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

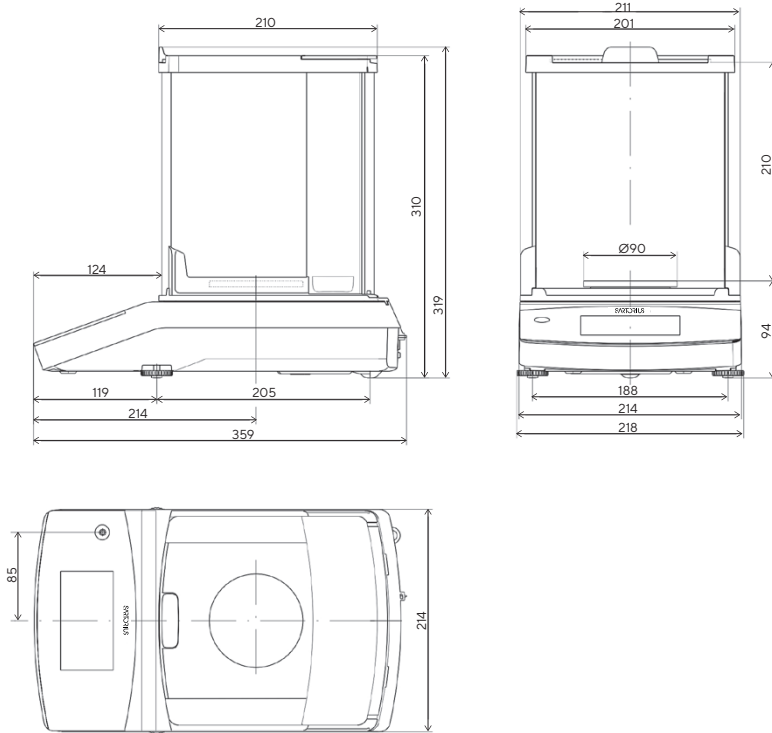
Density kit for balances with a readability of 0.1 mg 1 mg	YDK03
Density kit for balances with a readability of 0.01 g 0.1 g 1g	YDK04

## Calibration Weights

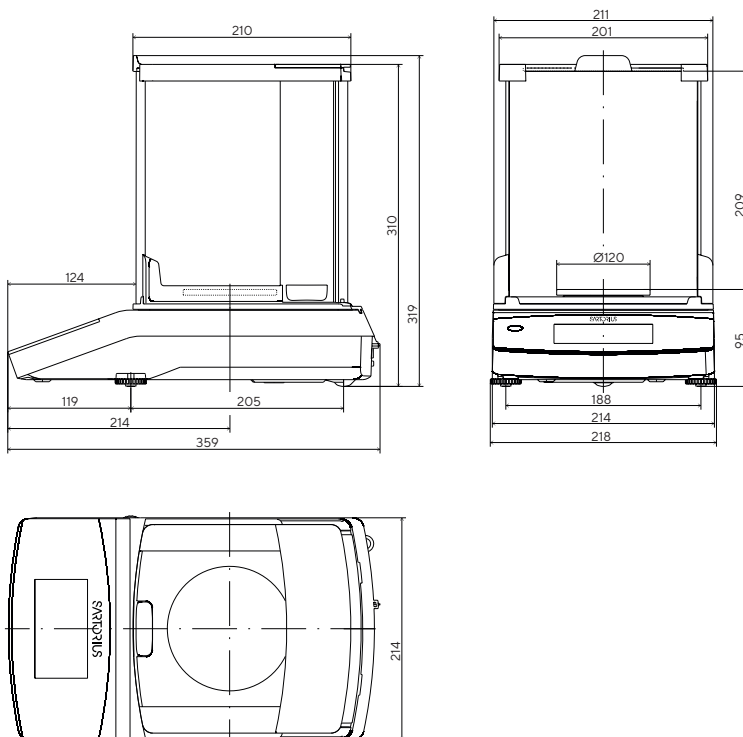
Calibration for lab balance model 224 ▪ Proof Line knob weight 200 g, OIML class E2, with DAkkS certificate	YCW522-AC-02
Calibration for lab balance model 124 ▪ Proof Line knob weight 100 g, OIML class E2, with DAkkS certificate	YCW512-AC-02
Calibration for lab balance model 64 ▪ Proof Line knob weight 50 g, OIML class E2, with DAkkS certificate	YCW452-AC-02
Calibration for lab balance model 313; 213 ▪ Proof Line knob weight 200 g, OIML class F1, with DAkkS certificate	YCW523-AC-02
Calibration for lab balance model 3102; 2102 ▪ Proof Line knob weight 2 kg, OIML class F1, with DAkkS certificate	YCW623-AC-02
Calibration for lab balance model 1102 ▪ Proof Line knob weight 1 kg, OIML class F1, with DAkkS certificate	YCW613-AC-02
Calibration for lab balance model 612 ▪ Proof Line knob weight 500 g, OIML class F2, with DAkkS certificate	YCW554-AC-02
Calibration for lab balance model 412 ▪ Proof Line knob weight 200 g, OIML class F2, with DAkkS certificate	YCW524-AC-02
Calibration for lab balance model 6101; 5101; 6100; 5100 ▪ Proof Line knob weight 5 kg, OIML class F2, with DAkkS certificate	YCW654-AC-02
Calibration for lab balance model 2101 ▪ Proof Line knob weight 2 kg, OIML class F2, with DAkkS certificate	YCW624-AC-02

# Technical Drawings

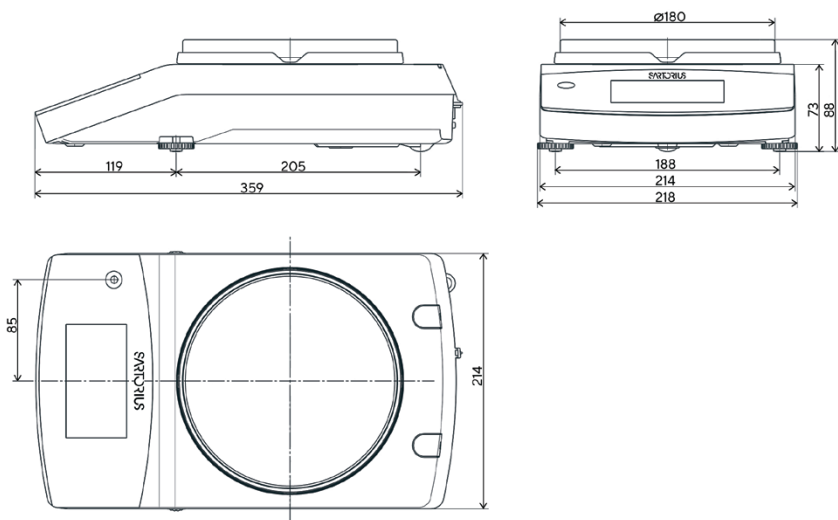
Models with a readability of 0.1 mg, in mm



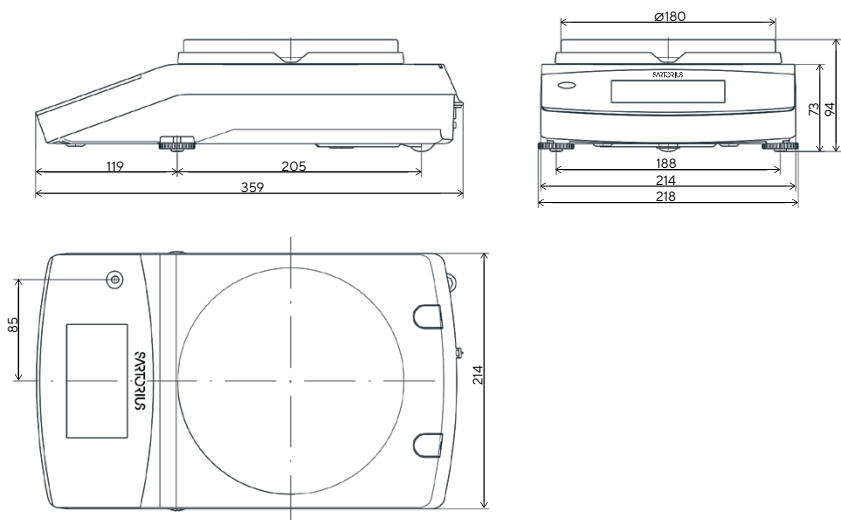
Models with a readability of 1 mg, in mm



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



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




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