## Product Datasheet

## Quintix ${ }^{\circledR}$ <br> Laboratory Balances

## Benefits

- PC-Direct Feature
- Automatic Internal Adjustment
- Top Performance
- Intuitive Operation
- Ergonomic Draft Shield


## Product Information

The Sartorius Quintix ${ }^{\oplus}$ sets new benchmarks in every aspect for standard lab balances. A number of features make Your workflow much more efficient, such as fully automatic internal adjustment, direct data transfer, ergonomic style and, above all, the entirely new touchscreen user interface with built-in application programs.

The self-explanatory icons and plain-text prompts on the large touchscreen show you all the information you need to know for the procedure - no more, no less.

## Technical Specifications

| AC Adapter |  |
| :--- | :--- |
| Sartorius AC adaptor module | YEPSO1-15VOW with interchangeable <br> country-specific plug-in AC adaptors |
| Primary | $100-240 \mathrm{~V} \sim,-10 \% \mid+10 \%$, |
|  | $50-60 \mathrm{~Hz}, \mathrm{O} .2 \mathrm{~A}$ |
| Secondary | $15 \mathrm{VDC}, \pm 5 \%, 530 \mathrm{~mA}$ (max.) \| |
|  | $8 \mathrm{Watt}\left(\right.$ max.): 0 to $+40^{\circ} \mathrm{C}$ and |
|  | $15 \mathrm{VDC}, \pm 5 \%, 330 \mathrm{~mA}$ (max.) \| |
|  | 5 Watt (max.): 0 to $+50^{\circ} \mathrm{C}$ |
| 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 <br> module YEPSO1-15VOW |
| Input voltage | $12.0-15.0 \mathrm{~V}$ DC |
| Power consumption | 2.0 W (typically) |
|  | 4.5 W (typically), only for |
|  | $125 \mathrm{D}-1 \times, 65-1 \times$ and $35-1 \times$ |


| Ambient Conditions |  |
| :---: | :---: |
| The specifications apply when the following ambient conditions are in place: |  |
| Environment | for indoor use only |
| Ambient temperature* | $+10^{\circ} \mathrm{C}$ to $+30^{\circ} \mathrm{C}$ |
| Operational capacity | guaranteed between $+5^{\circ} \mathrm{C}$ and $+45^{\circ} \mathrm{C}$ |
| Storage and shipping | $-10^{\circ} \mathrm{C}$ to $+60^{\circ} \mathrm{C}$ |
| Elevation | up to $3,000 \mathrm{~m}$ above sea level |
| Relative humidity** | $15 \%$ to $80 \%$ for temperatures up to $31^{\circ} \mathrm{C}$; non-condensing, decreasing linearly to 50\% relative humidity at $40^{\circ} \mathrm{C}$ and $20 \%$ at $50^{\circ} \mathrm{C}$ |
| 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.

[^0]| Standard Equipment |  |
| :---: | :---: |
| Levelling | Glass level indicator with air bubble for centering |
| Calibration | Internal calibration isoCAL, External calibration |
| Selectable weight units ${ }^{\text { }}$ | 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 <br> - Automatic recognition of Sartorius printer models YDP30 or YDP40 <br> - PC-direct data transfer to Microsoft ${ }^{\oplus}$ Windows programs <br> - Programmable interval for data output <br> - Data transfer protocols SBI, xBPI, 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 |


| Standard Equipment |  |
| :---: | :---: |
| Special built-in lab applications | Mixing, Components, Statistics, Conversion |
| Languages | English, French, German, Hungarian, Italian, Polish, Portuguese, Russian, Spanish, Turkish, Chinese, Japanese, Korean |
| Protection | - Chemical resistant finish of the top housing <br> - Glass parts of the draft shield are coated to reduce electrostatic influences <br> - In-use cover <br> - Dust cover for balances with draft shield |
| Password protection | Supervisor lock for protection against unintentional changes |
| Anti-theft lock | Kensington lock and lockdown capability for cable or chain |
| ${ }^{1)}$ Limited for verified m |  |



## Models with internal adjustment feature, without approval

| Model |  | 125D-1x ${ }^{\text {" }}$ | 65-1x ${ }^{11}$ | 35-1x ${ }^{17}$ | 224-1x ${ }^{17}$ | 124-1x) | 64-1x ${ }^{17}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Readability \| Scale interval (d) | mg | 0.01\|0.1 | 0.01 | 0.01 | 0.1 | 0.1 | 0.1 |
| Maximum capacity (Max) | g | 60\|120 | 60 | 30 | 220 | 120 | 60 |
| Weighing system |  | EMC | EMC | EMC | EMC | EMC | EMC |
| Repeatability |  |  |  |  |  |  |  |
| At 5\% load, typical value | $\pm \mathrm{mg}$ | $0.02 \mid 0.07$ | 0.02 | 0.02 | 0.08 | 0.08 | 0.08 |
| At approx. maximum load, typical value | $\pm \mathrm{mg}$ | $0.03 \mid 0.07$ | 0.03 | 0.03 | 0.1 | 0.1 | 0.1 |
| Linearity deviation |  |  |  |  |  |  |  |
| Limits | $\pm \mathrm{mg}$ | $0.1 \mid 0.1$ | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 |
| Typical value | $\pm \mathrm{mg}$ | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 |
| Sensitivity drift between $+10^{\circ} \mathrm{C}$ and $+30^{\circ} \mathrm{C}$ | $\pm \mathrm{ppm} / \mathrm{K}$ | 1 | 1 | 1 | 1.5 | 1.5 | 1.5 |
| Tare maximum capacity (subtractive) | < $100 \%$ of maximum capacity |  |  |  |  |  |  |
| isoCAL: |  |  |  |  |  |  |  |
| Temperature change | K | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Time interval | h | 4 | 4 | 4 | 4 | 4 | 4 |

For models with approval:

| Accuracy class | - | - | - | - |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Type $^{2)}$ |  | - | - | - | - | - |
| Verification scale interval (e) | mg | - | - | - | - | - |
| Minimum load (Min) | $m g$ | - | - | - | - | - |

"Minimum initial weighing according to USP (United States Pharmacopeia), Chap. 41"

| Optimum minimum initial weighing | g | 0.0082 | 0.0082 | 0.0082 | 0.082 | 0.082 | 0.082 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Typical minimum initial weighing | g | 0.04 | 0.04 | 0.04 | 0.16 | 0.16 |  |
| Typical measurement time | s | $\leq 6.0 \mid 2.0$ | $\leq 6.0$ | $\leq 6.0$ | $\leq 2.0$ | $\leq 2.0$ | $\leq 2.0$ |
| Typical stabilization time | s | $\leq 4.0 \mid 1.5$ | $\leq 4.0$ | $\leq 4.0$ | $\leq 1.5$ | $\leq 1.5$ | $\leq 1.5$ |

Recommended calibration weight

| External calibrated test weight | g | 100 | 50 | 20 | 200 | 100 | 50 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Accuracy class in accordance with OIML R111-1 |  | E2 | E2 | E2 | E2 | E2 | E2 |
| Weighing pan size | mm | $\varnothing 80$ | $\varnothing 80$ | $\varnothing 80$ | $\varnothing 90$ | $\varnothing 90$ | $\varnothing 90$ |
| Weighing chamber height* | mm | 218 | 218 | 218 | 209 | 209 | 209 |
| Net weight, approx. | kg | 8.80 | 8.80 | 8.80 | 5.70 | 5.70 | 5.70 |
| Gross weight, approx. | kg | 10.90 | 10.90 | 10.90 | 7.40 | 7.40 | 7.40 |
| IP protection class |  | IP43 | IP43 | IP43 |  |  |  |

* upper edge of the weighing pan to the lower edge of the upper draft shield panel
${ }^{1)}$ 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

| Model |  | 613-1x ${ }^{11}$ | 513-1x ${ }^{17}$ | $313-1{ }^{11}$ | 213-1x) | 6102-1x ${ }^{17}$ | 5102-1x ${ }^{11}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Readability \| Scale interval (d) | mg | 1 | 1 | 1 | 1 | 10 | 10 |
| Maximum capacity (Max) | g | 610 | 510 | 310 | 210 | 6,100 | 5,100 |
| Weighing system |  | EMC | EMC | EMC | EMC | EMC | EMC |
| Repeatability |  |  |  |  |  |  |  |
| At 5\% load, typical value | $\pm \mathrm{mg}$ | 0.5 | 0.5 | 0.5 | 0.5 | 5 | 5 |
| At approx. maximum load, typical value | $\pm \mathrm{mg}$ | 1 | 1 | 1 | 1 | 10 | 10 |
| Linearity deviation |  |  |  |  |  |  |  |
| Limits | $\pm \mathrm{mg}$ | 2 | 2 | 2 | 2 | 20 | 20 |
| Typical value | $\pm \mathrm{mg}$ | 0.6 | 0.6 | 0.6 | 0.6 | 6 | 6 |
| Sensitivity drift between $+10^{\circ} \mathrm{C}$ and $+30^{\circ} \mathrm{C}$ | $\pm \mathrm{ppm} / \mathrm{K}$ | 2 | 2 | 2 | 2 | 2 | 2 |
| Tare maximum capacity (subtractive) | <100\% of maximum capacity |  |  |  |  |  |  |
| isoCAL: |  |  |  |  |  |  |  |
| Temperature change | K | 2 | 2 | 2 | 2 | 2 | 2 |
| Time interval | h | 6 | 6 | 6 | 6 | 6 | 6 |

For models with approval:

| Accuracy class | - | - | - | - |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Type $^{2)}$ |  | - | - | - | - | - |
| Verification scale interval (e) | mg | - | - | - | - | - |
| Minimum load (Min) | $m g$ | - | - | - | - | - |


| "Minimum initial weighing according to USP (United States Pharmacopeia), Chap. 41" |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Optimum minimum initial weighing |  | g | 0.82 | 0.82 | 0.82 | 0.82 | 8.2 |
| Typical minimum initial weighing | g | 1 | 1 | 1 | 1 | 10 |  |
| Typical measurement time | s | $\leq 1.5$ | $\leq 1.5$ | $\leq 1.5$ | $\leq 1.5$ | $\leq 1.0$ | $\leq 1.0$ |
| Typical stabilization time | s | $\leq 1.0$ | $\leq 1.0$ | $\leq 1.0$ | $\leq 1.0$ | $\leq 0.9$ | $\leq 0.9$ |

Recommended calibration weight

| External calibrated test weight | g | 500 | 500 | 200 | 200 | 5,000 | 5,000 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Accuracy class in accordance with OIML R111-1 |  | F1 | F1 | F1 | F1 | F1 | F1 |
| Weighing pan size | mm | $\varnothing 120$ | $\varnothing 120$ | $\varnothing 120$ | $\varnothing 120$ | $\varnothing 180$ | $\varnothing 180$ |
| Weighing chamber height* | mm | 209 | 209 | 209 | 209 | - | - |
| Net weight, approx. | kg | 5.70 | 5.70 | 5.70 | 5.70 | 5.90 | 5.90 |
| Gross weight, approx. | kg | 7.40 | 7.40 | 7.40 | 7.40 | 6.70 | 6.70 |

IP protection class

## Models with internal adjustment feature, without approval

| Model |  | 3102-1x ${ }^{11}$ | 2102-1x ${ }^{17}$ | 1102-1x ${ }^{11}$ | 612-1x ${ }^{11}$ | 412-1x ${ }^{11}$ | 6101-1x ${ }^{11}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Readability \| Scale interval (d) | mg | 10 | 10 | 10 | 10 | 10 | 100 |
| Maximum capacity (Max) | g | 3,100 | 2,100 | 1,100 | 610 | 410 | 6,100 |
| Weighing system |  | EMC | Strain gauge | Strain gauge | Strain gauge | Strain gauge | Strain gauge |
| Repeatability |  |  |  |  |  |  |  |
| At 5\% load, typical value | $\pm \mathrm{mg}$ | 5 | 5 | 5 | 5 | 5 | 50 |
| At approx. maximum load, typical value | $\pm \mathrm{mg}$ | 10 | 10 | 10 | 10 | 10 | 100 |
| Linearity deviation |  |  |  |  |  |  |  |
| Limits | $\pm \mathrm{mg}$ | 20 | 20 | 20 | 20 | 20 | 300 |
| Typical value | $\pm \mathrm{mg}$ | 6 | 6 | 6 | 6 | 6 | 100 |
| Sensitivity drift between $+10^{\circ} \mathrm{C}$ and $+30^{\circ} \mathrm{C}$ | $\pm \mathrm{ppm} / \mathrm{K}$ | 2 | 3.5 | 3.5 | 3.5 | 3.5 | 7 |
| Tare maximum capacity (subtractive) | < $100 \%$ of maximum capacity |  |  |  |  |  |  |
| isoCAL: |  |  |  |  |  |  |  |
| Temperature change | K | 2 | 2 | 2 | 2 | 2 | 2 |
| Time interval | h | 6 | $6$ | 6 | 6 | 6 | 6 |

For models with approval:

| Accuracy class | - | - | - | - | - |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Type $^{2)}$ |  | - | - | - | - | - |
| Verification scale interval (e) | mg | - | - | - | - | - |
| Minimum load (Min) | mg | - | - | - | - | - |

"Minimum initial weighing according to USP (United States Pharmacopeia), Chap. 41"

| Optimum minimum initial weighing | g | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Typical minimum initial weighing | g | 10 | 10 | 10 | 10 | 10 | 100 |
| Typical measurement time | s | $\leq 1.0$ | $\leq 1.0$ | $\leq 1.0$ | $\leq 1.0$ | $\leq 1.0$ |  |
| Typical stabilization time | s | $\leq 0.9$ | $\leq 0.9$ | $\leq 0.9$ | $\leq 0.9$ | $\leq 0.9$ | $\leq 0.9$ |


| Recommended calibration weight <br> External calibrated test weight | g | 2,000 | 2,000 | 1,000 | 500 | 200 | 5,000 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Accuracy class in accordance with <br> OIML R111-1 |  | F 1 | F 1 | F 1 | F 2 | F 2 | F 2 |
| Weighing pan size | mm | $\varnothing 180$ | $\varnothing 180$ | $\varnothing 180$ | $\varnothing 180$ | $\varnothing 180$ | $\varnothing 180$ |
| Weighing chamber height* | mm | - | - | - | - | - | - |
| Net weight, approx. | kg | 5.90 | 5.30 | 5.30 | 5.30 | 5.30 | 5.90 |
| Gross weight, approx. | kg | 6.70 | 6.10 | 6.10 | 6.10 | 6.10 | 6.70 |

IP protection class

* upper edge of the weighing pan to the lower edge of the upper draft shield panel
${ }^{1}$ 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

| Model |  | 5101-1x ${ }^{11}$ | 2101-1x ${ }^{11}$ | 6100-1x ${ }^{11}$ | 5100-1x ${ }^{11}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Readability \| Scale interval (d) | mg | 100 | 100 | 1,000 | 1,000 |
| Maximum capacity (Max) | 9 | 5,100 | 2,100 | 6,100 | 5,100 |
| Weighing system |  | Strain gauge | Strain gauge | Strain gauge | Strain gauge |
| Repeatability |  |  |  |  |  |
| At 5\% load, typical value | $\pm \mathrm{mg}$ | 50 | 50 | 500 | 500 |
| At approx. maximum load, typical value | $\pm \mathrm{mg}$ | 100 | 100 | 1,000 | 1,000 |
| Linearity deviation |  |  |  |  |  |
| Limits | $\pm \mathrm{mg}$ | 300 | 300 | 1,000 | 1,000 |
| Typical value | $\pm \mathrm{mg}$ | 100 | 100 | 600 | 600 |
| Sensitivity drift between $+10^{\circ} \mathrm{C}$ and $+30^{\circ} \mathrm{C}$ | $\pm \mathrm{ppm} / \mathrm{K}$ | 7 | 7 | 7 | 7 |
| Tare maximum capacity (subtractive) | < 100\% of maximum capacity |  |  |  |  |
| isoCAL: |  |  |  |  |  |
| Temperature change | K | 2 | 2 | 2 | 2 |
| Time interval | h | 6 | 6 | 6 | 6 |

For models with approval:

| Accuracy class | - | - | - | - |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Type $^{2)}$ |  | - | - | - | - |
| Verification scale interval (e) | mg | - | - | - | - |
| Minimum load (Min) | mg | - | - | - | - |


| "Minimum initial weighing according to USP (United States Pharmacopeia), Chap. 41" |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Optimum minimum initial weighing | g | 82 | 82 | 820 | 820 |
| Typical minimum initial weighing | g | 100 | 100 | 1,000 | 1,000 |
| Typical measurement time | s | $\leq 1.0$ | $\leq 1.0$ | $\leq 1.0$ | $\leq 1.0$ |
| Typical stabilization time | s | $\leq 0.9$ | $\leq 0.9$ | $\leq 0.9$ | $\leq 0.9$ |

Recommended calibration weight

| External calibrated test weight | g | 5,000 | 2,000 | 5,000 | 5,000 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Accuracy class in accordance with OIML R111-1 |  | F2 | F2 | F2 | F2 |
| Weighing pan size | mm | $\varnothing 180$ | $\varnothing 180$ | $\varnothing 180$ | $\varnothing 180$ |
| Weighing chamber height* | mm | - | - | - | - |
| Net weight, approx. | kg | 5.90 | 5.90 | 5.90 | 5.90 |
| Gross weight, approx. | kg | 6.70 | 6.70 | 6.70 | 6.70 |

[^1]
## Models with internal adjustment feature, with approval

| Model |  | 125D-1x ${ }^{1}$ | 65-1x ${ }^{11}$ | 35-1x ${ }^{17}$ | 224-1x ${ }^{17}$ | 124-1x) | 64-1x ${ }^{11}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Readability \| Scale interval (d) | mg | 0.01\|0.1 | 0.01 | 0.01 | 0.1 | 0.1 | 0.1 |
| Maximum capacity (Max) | g | 60\|120 | 60 | 30 | 220 | 120 | 60 |
| Weighing system |  | EMC | EMC | EMC | EMC | EMC | EMC |
| Repeatability |  |  |  |  |  |  |  |
| At 5\% load, typical value | $\pm \mathrm{mg}$ | $0.02 \mid 0.07$ | 0.02 | 0.02 | 0.08 | 0.08 | 0.08 |
| At approx. maximum load, typical value | $\pm \mathrm{mg}$ | $0.03 \mid 0.07$ | 0.03 | 0.03 | 0.1 | 0.1 | 0.1 |
| Linearity deviation |  |  |  |  |  |  |  |
| Limits | $\pm \mathrm{mg}$ | 0.10 .1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 |
| Typical value | $\pm \mathrm{mg}$ | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 |
| Sensitivity drift between $+10^{\circ} \mathrm{C}$ and $+30^{\circ} \mathrm{C}$ | $\pm \mathrm{ppm} / \mathrm{K}$ | 1 | 1 | 1 | 1.5 | 1.5 | 1.5 |
| Tare maximum capacity (subtractive) | < $100 \%$ of maximum capacity |  |  |  |  |  |  |
| isoCAL: |  |  |  |  |  |  |  |
| Temperature change | K | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Time interval | h | 4 | 4 | 4 | 4 | 4 | 4 |

For models with approval:

| Accuracy class | I | I | I | I | I |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Type $^{2)}$ |  | SQP-F | SQP-F | SQP-F | SQP-A | SQP-A |
| Verification scale interval (e) | mg | 1 | 1 | 1 | 1 | 1 |
| Minimum load (Min) | mg | 1 | 1 | 1 | 10 | 10 |

"Minimum initial weighing according to USP (United States Pharmacopeia), Chap. 41"

| Optimum minimum initial weighing | g | 0.0082 | 0.0082 | 0.0082 | 0.082 | 0.082 | 0.082 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Typical minimum initial weighing | g | 0.04 | 0.04 | 0.04 | 0.16 | 0.16 |  |
| Typical measurement time | s | $\leq 6.0 \mid 2.0$ | $\leq 6.0$ | $\leq 6.0$ | $\leq 2.0$ | $\leq 2.0$ | $\leq 2.0$ |
| Typical stabilization time | s | $\leq 4.0 \mid 1.5$ | $\leq 4.0$ | $\leq 4.0$ | $\leq 1.5$ | $\leq 1.5$ | $\leq 1.5$ |

Recommended calibration weight

| External calibrated test weight | g | 100 | 50 | 20 | 200 | 100 | 50 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Accuracy class in accordance with OIML R111-1 |  | E2 | E2 | E2 | E2 | E2 | E2 |
| Weighing pan size | mm | $\varnothing 80$ | $\varnothing 80$ | $\varnothing 80$ | $\varnothing 90$ | $\varnothing 90$ | $\varnothing 90$ |
| Weighing chamber height* | mm | 218 | 218 | 218 | 209 | 209 | 209 |
| Net weight, approx. | kg | 8.80 | 8.80 | 8.80 | 5.70 | 5.70 | 5.70 |
| Gross weight, approx. | kg | 10.90 | 10.90 | 10.90 | 7.40 | 7.40 | 7.40 |
| IP protection class |  | IP43 | IP43 | IP43 |  |  |  |

[^2]| Model |  | 613-1x ${ }^{17}$ | 513-1x ${ }^{11}$ | $313-1{ }^{11}$ | 213-1x ${ }^{11}$ | 6102-1x ${ }^{17}$ | 5102-1x ${ }^{11}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Readability \| Scale interval (d) | mg | 1 | 1 | 1 | 1 | 10 | 10 |
| Maximum capacity (Max) | g | 610 | 510 | 310 | 210 | 6,100 | 5,100 |
| Weighing system |  | EMC | EMC | EMC | EMC | EMC | EMC |
| Repeatability |  |  |  |  |  |  |  |
| At 5\% load, typical value | $\pm \mathrm{mg}$ | 0.5 | 0.5 | 0.5 | 0.5 | 5 | 5 |
| At approx. maximum load, typical value | $\pm \mathrm{mg}$ | 1 | 1 | 1 | 1 | 10 | 10 |
| Linearity deviation |  |  |  |  |  |  |  |
| Limits | $\pm \mathrm{mg}$ | 2 | 2 | 2 | 2 | 20 | 20 |
| Typical value | $\pm \mathrm{mg}$ | 0.6 | 0.6 | 0.6 | 0.6 | 6 | 6 |
| Sensitivity drift between $+10^{\circ} \mathrm{C}$ and $+30^{\circ} \mathrm{C}$ | $\pm \mathrm{ppm} / \mathrm{K}$ | 2 | 2 | 2 | 2 | 2 | 2 |
| Tare maximum capacity (subtractive) | < $100 \%$ of maximum capacity |  |  |  |  |  |  |
| isoCAL: |  |  |  |  |  |  |  |
| Temperature change | K | 2 | 2 | 2 | 2 | 2 | 2 |
| Time interval | h | 6 | 6 | 6 | 6 | 6 | 6 |

For models with approval:

| Accuracy class |  | $\\|$ | $\\|$ | $\\|$ | $\\|$ | $\\|$ | II |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Type $^{2)}$ |  | SQP-B | SQP-B | SQP-B | SQP-B | SQP-C | SQP-C |
| Verification scale interval (e) | mg | 10 | 10 | 10 | 10 | 100 | 100 |
| Minimum load (Min) | mg | 20 | 20 | 20 | 20 | 500 | 500 |


| "Minimum initial weighing according to USP (United States Pharmacopeia), Chap. 41" |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Optimum minimum initial weighing | g | 0.82 | 0.82 | 0.82 | 0.82 | 8.2 | 8.2 |
| Typical minimum initial weighing | g | 1 | 1 | 1 | 1 | 10 | 10 |
| Typical measurement time | s | $\leq 1.5$ | $\leq 1.5$ | $\leq 1.5$ | $\leq 1.5$ | $\leq 1.0$ | $\leq 1.0$ |
| Typical stabilization time | s | $\leq 1.0$ | $\leq 1.0$ | $\leq 1.0$ | $\leq 1.0$ | $\leq 0.9$ | $\leq 0.9$ |


| Recommended calibration weight <br> External calibrated test weight | g | 500 | 500 | 200 | 200 | 5,000 | 5,000 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Accuracy class in accordance with <br> OIML R111-1 |  | F 1 | F 1 | F 1 | F 1 | F 1 | F 1 |
| Weighing pan size | mm | $\varnothing 120$ | $\varnothing 120$ | $\varnothing 120$ | $\varnothing 120$ | $\varnothing 180$ | $\varnothing 180$ |
| Weighing chamber height* | mm | 209 | 209 | 209 | 209 | - | - |
| Net weight, approx. | kg | 5.70 | 5.70 | 5.70 | 5.70 | 5.90 | 5.90 |
| Gross weight, approx. | kg | 7.40 | 7.40 | 7.40 | 7.40 | 6.70 | 6.70 |

IP protection class

[^3]
## Models with internal adjustment feature, with approval

| Model |  | $3102-1 x^{11}$ | $2102-1 x^{17}$ | $1102-1 x^{11}$ | $612-1 x^{1)}$ | $6101-1 x^{11}$ | $5101-1 x^{17}$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Readability \| Scale interval (d) | mg | 10 | 10 | 10 | 10 | 100 | 100 |
| Maximum capacity (Max) | g | 3,100 | 2,100 | 1,100 | 610 | 6,100 | 5,100 |
| Weighing system |  | EMC | EMC | EMC | EMC | Strain gauge | Strain gauge |

Repeatability

| At 5\% load, typical value | $\pm \mathrm{mg}$ | 5 | 5 | 5 | 5 | 50 | 50 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| At approx. maximum load, typical value | $\pm \mathrm{mg}$ | 10 | 10 | 10 | 10 | 100 | 100 |
| Linearity deviation |  |  |  |  |  |  |  |
| Limits | $\pm \mathrm{mg}$ | 20 | 20 | 20 | 20 | 300 | 300 |
| Typical value | $\pm \mathrm{mg}$ | 6 | 6 | 6 | 6 | 100 | 100 |
| Sensitivity drift between $+10^{\circ} \mathrm{C}$ and $+30^{\circ} \mathrm{C}$ | $\pm \mathrm{ppm} / \mathrm{K}$ | 2 | 2 | 2 | 2 | 7 | 7 |
| Tare maximum capacity (subtractive) | < 100\% of maximum capacity |  |  |  |  |  |  |
| isoCAL: |  |  |  |  |  |  |  |
| Temperature change | K | 2 | 2 | 2 | 2 | 2 | 2 |
| Time interval | h | 6 | 6 | 6 | 6 | 6 | 6 |

For models with approval:

| Accuracy class | II | II | II | II | II |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Type $^{2)}$ |  | SQP-C | SQP-D | SQP-D | SQP-D | SQP-E | SQP-E |
| Verification scale interval (e) | mg | 100 | 100 | 100 | 100 | 1,000 | 1,000 |
| Minimum load (Min) | mg | 500 | 500 | 500 | 500 | 5,000 | 5,000 |


| Optimum minimum initial weighing | g | 8.2 | 8.2 | 8.2 | 8.2 | 82 | 82 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Typical minimum initial weighing | g | 10 | 10 | 10 | 10 | 100 | 100 |
| Typical measurement time | S | $\leq 1.0$ | $\leq 1.0$ | $\leq 1.0$ | $\leq 1.0$ | $\leq 1.0$ | $\leq 1.0$ |
| Typical stabilization time | S | $\leq 0.9$ | $\leq 0.9$ | $\leq 0.9$ | $\leq 0.9$ | $\leq 0.9$ | $\leq 0.9$ |


| Recommended calibration weight |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| External calibrated test weight | g | 2,000 | 2,000 | 1,000 | 500 | 5,000 | 5,000 |
| Accuracy class in accordance with OIML R111-1 |  | F1 | F1 | F1 | F2 | F2 | F2 |
| Weighing pan size | mm | $\varnothing 180$ | $\varnothing 180$ | $\varnothing 180$ | $\varnothing 180$ | $\varnothing 180$ | $\varnothing 180$ |
| Weighing chamber height* | mm | - | - | - | - | - | - |
| Net weight, approx. | kg | 5.90 | 5.90 | 5.90 | 5.90 | 5.90 | 5.90 |
| Gross weight, approx. | kg | 6.70 | 6.70 | 6.70 | 6.70 | 6.70 | 6.70 |

IP protection class

[^4]| Model |  | 6100-1x ${ }^{11}$ | 5100-1x ${ }^{11}$ |
| :---: | :---: | :---: | :---: |
| Readability \| Scale interval (d) | mg | 1,000 | 1,000 |
| Maximum capacity (Max) | g | 6,100 | 5,100 |
| Weighing system |  | Strain gauge | Strain gauge |
| Repeatability |  |  |  |
| At 5\% load, typical value | $\pm \mathrm{mg}$ | 500 | 500 |
| At approx. maximum load, typical value | $\pm \mathrm{mg}$ | 1,000 | 1,000 |
| Linearity deviation |  |  |  |
| Limits | $\pm \mathrm{mg}$ | 1,000 | 1,000 |
| Typical value | $\pm \mathrm{mg}$ | 600 | 600 |
| Sensitivity drift between $+10^{\circ} \mathrm{C}$ and $+30^{\circ} \mathrm{C}$ | $\pm \mathrm{ppm} / \mathrm{K}$ | 7 | 7 |
| Tare maximum capacity (subtractive) |  | < 100\% of maximum capacity |  |
| isoCAL: |  |  |  |
| Temperature change | K | 2 | 2 |
| Time interval | h | 6 | 6 |

For models with approval:

| Accuracy class | II | II |  |
| :--- | :--- | :--- | :--- |
| Type $^{2)}$ |  | SQP-E | SQP-E |
| Verification scale interval (e) | mg | 1,000 | 1,000 |
| Minimum load (Min) | mg | 50,000 | 50,000 |


| "Minimum initial weighing according to USP (United States Pharmacopeia), Chap. 41" |  |  |  |
| :--- | :--- | :--- | :--- |
| Optimum minimum initial weighing | g | 820 | 820 |
| Typical minimum initial weighing | g | 1,000 | 1,000 |
| Typical measurement time | s | $\leq 1.0$ | $\leq 1.0$ |
| Typical stabilization time | s | $\leq 0.9$ | $\leq 0.9$ |

Recommended calibration weight

| External calibrated test weight | g | 5,000 | 5,000 |
| :--- | :--- | :--- | :--- |
| Accuracy class in accordance with <br> OIML R111-1 |  | F 2 | F 2 |
| Weighing pan size | mm | $\varnothing 180$ | $\varnothing 180$ |
| Weighing chamber height* | mm | - | - |
| Net weight, approx. | kg | 5.90 | 5.90 |
| Gross weight, approx. | kg | 6.70 | 6.70 |

IP protection class

[^5]
## Optional Accessories

| Printers and Communications |  |
| :--- | :--- |
| Premium GLP Laboratory Printer | YDP30 |
| - Printer paper for GLP laboratory printer | 69 YO3285 |
| - Endless labels for GLP laboratory printer | 69 YO3286 |
| Standard Laboratory Printer | YDP40 |
| - Printer paper for standard laboratory printer | 69 YO3287 |
| Data communication cable, USB \|USB A | YCCO4-D09 |
| Data communication cable, mini USB\|RS232, 9-pin | YCCO3-D09 |
| Data communication cable, mini USB\|RS232, 25-pin | YCCO3-D25 |

## General

| Battery Pack for Standard Lab Balances | YRB11Z |
| :--- | :--- |
| Draft shield for balances with a readability of 10 mg | YDSO1SQP |
| Round glass draft shield for balances with <br> a readability of 1 mg | YDSO2SQP |
| In-use cover for balances with a readability of 0.01 mg | 6960 SEO5 |
| In-use cover for balances with a readability <br> of $0.1 \mathrm{mg} \mid 1 \mathrm{mg}$ | 6960 SE01 |
| In-use cover for balances with a readability of 10 mg | 6960 SEO2 |
| Dust cover for balances with a readability <br> of $0.1 \mathrm{mg} \mid 1 \mathrm{mg}$ | 6960 SE03 |
| Dust cover for balances with a readability <br> of 0.01 mg | 6960 SE04 |

Weighing Pans (for balances design 1)

| Weighing pan, 80 mm , slotted | YSPO1SQP |
| :--- | :--- |
| Weighing pan, $90 \mathrm{~mm} ;$ <br> includes conversion kit | YWP01SQP |
| Filter weighing pan, 130 mm | YFW01SQP |


| Density Determination | VF4601 |
| :--- | :--- |
| Density kit for balances with a readability <br> of 0.01 mg | YDK03 |
| Density kit for balances with a readability <br> of $0.1 \mathrm{mg} \mathrm{\mid} 1 \mathrm{mg}$ | YDKO4 |
| Density kit for balances with a readability <br> of 10 mg |  |

## Calibration Weights

Calibration for lab balance model 125D; 65; 64 YCW452-AC-02

- Proof Line knob weight 50 g , OIML class E2, with DAkkS certificate

Calibration for lab balance model 224 YCW522-AC-02

- Proof Line knob weight 200 g , OIML class E2, with DAkkS certificate

Calibration for lab balance model $124 \quad$ YCW512-AC-02

- Proof Line knob weight 100 g , OIML class E2, with DAkkS certificate

Calibration for lab balance model 35 YCW422-AC-02

- Proof Line knob weight 20 g , OIML class E2, with DAkkS certificate

Calibration for lab balance model 613; $513 \quad$ YCW553-AC-02

- Proof Line knob weight 500 g , OIML class F1, with DAkkS certificate

Calibration for lab balance model 313; 213 YCW523-AC-02

- Proof Line knob weight 200 g , OIML class F1, with DAkkS certificate

Calibration for lab balance model 6102; 5102 YCW653-AC-02

- Proof Line knob weight 5 kg , OIML class F1, with DAkkS certificate
Calibration for lab balance model 3102; 2102 YCW623-AC-02
- Proof Line knob weight 2 kg , OIML class F1, with DAkkS certificate
Calibration for lab balance model $1102 \quad$ YCW613-AC-02
- Proof Line knob weight 1 kg , OIML class F1, with DAkkS certificate
Calibration for lab balance model $612 \quad$ YCW554-AC-02
- Proof Line knob weight 500 g , OIML class F2, with DAkkS certificate

Calibration for lab balance model 412
YCW524-AC-02

- Proof Line knob weight 200 g , OIML class F2, with DAkkS certificate
Calibration for lab balance model 6101; 5101; YCW654-AC-02 6100; 5100
- Proof Line knob weight 5 kg , OIML class F2, with DAkkS certificate
Calibration 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 0.01 mg , in mm



## Models with a readability of 1 mg , in mm



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


Models with a readability of $\geq 10 \mathrm{mg}$ (exclude $3102,5102,6102$ ), in mm



[^0]:    * 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

[^1]:    IP protection class

[^2]:    * upper edge of the weighing pan to the lower edge of the upper draft shield panel
    ${ }^{1)}$ Country-specific marking in model, $x=$
    $x=$ CN: Balances with approval for China
    $x=C C H$ : Conformity-assessed balances with EU type examination certificate only for Switzerland
    $x=$ CEU: Conformity-assessed balances with EU type examination certificate without country-specific additions
    x = CFR: Conformity-assessed balances with EU type examination certificate only for France
    x = CIT: Conformity-assessed balances with EU type examination certificate only for Italy

[^3]:    $x=$ 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
    ${ }^{2)}$ All models with $x=C N$ : type "SQP"

[^4]:    * upper edge of the weighing pan to the lower edge of the upper draft shield panel
    ${ }^{1)}$ Country-specific marking in model, $x=$
    $x=$ CN: Balances with approval for China
    $x=C C H:$ Conformity-assessed balances with EU type examination certificate only for Switzerland
    $x=$ CEU: Conformity-assessed balances with EU type examination certificate without country-specific additions
    x = CFR: Conformity-assessed balances with EU type examination certificate only for France
    x = CIT: Conformity-assessed balances with EU type examination certificate only for Italy

[^5]:    $x=$ 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
    ${ }^{2)}$ All models with $x=C N$ : type "SQP"

