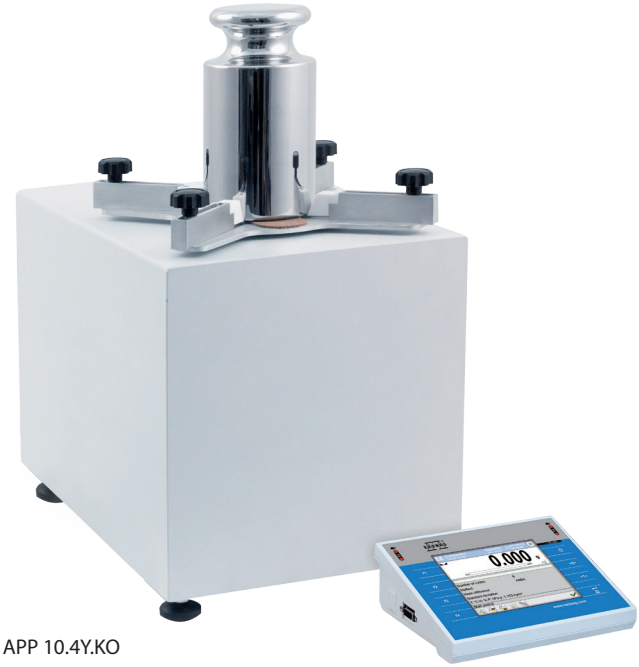
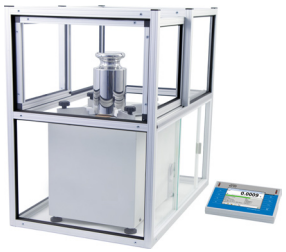
# APP 4Y.KO Mass Comparator

Class-leading manual mass comparator

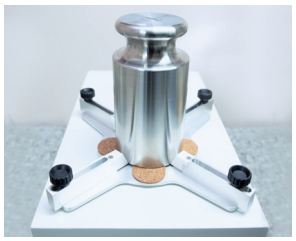


APP 10.4Y.KO

APP 64.4Y.KO



APP 30.4Y.KO in an anti-draft chamber



Weighing pan with mechanical system for weights positioning

Self-centring weighing pan

## Functions

- Mass comparator
- Ambient conditions measurement
- Proximity sensors
- Replaceable units
- Multilingual menu

## Features

**Effective and Excellent Measurement**
The APP 4Y.KO series stands for a class-leading manual mass comparator. These weighing instruments allow to compare 100 g - 50 kg weights of class E1 and lower.

**Excellent Measurement Repeatability**
The APP 4Y.KO is comprised of two parts. One featuring an electromagnetic module, the other a precise mechanical measuring system. Weighing accuracy is assured thanks to a semi-automatic system of adjustment carried out using an external adjustment weight.

**Design and Functionality**
Weighing pan with a mechanical system for weights positioning facilitates precise loading of mass standards and eliminates eccentricity. This solution additionally allows for dissemination of reference mass to few weights.

**Dedicated Software**
Specially-designed RMCS computer software enables comprehensive realisation of calibration procedures in laboratory. The system manages the whole calibration process, starting from the moment the order is placed, through procedure performance, to the moment of issuing the calibration certificate.

# Technical Specifications

| | APP 10.4Y.KO | APP 30.4Y.KO |
|---|---|---|
| **OIML calibration range E1** | 5 kg ÷ 10 kg | 20 kg |
| **OIML calibration range E2** | 1 kg ÷ 10 kg | 10 kg ÷ 20 kg |
| **OIML calibration range F1** | 500 g ÷ 10 kg | 1 kg ÷ 20 kg |
| **OIML calibration range F2** | 100 g ÷ 10 kg | 1 kg ÷ 20 kg |
| **OIML calibration range M1** | 100 g ÷ 10 kg | 1 kg ÷ 20 kg |
| **OIML calibration range M2** | 100 g ÷ 10 kg | 1 kg ÷ 20 kg |
| **Maximum capacity [Max]** | 10.2 kg | 30.5 kg |
| **Readability [d]** | 0.1 mg | 1 mg |
| **Standard repeatability [5% Max]*** | 0.35 mg | 3 mg |
| **Standard repeatability [Max] *** | 0.4 mg | 3 mg |
| **Permissible repeatability *** | 0.7 mg | 5 mg |
| **Stabilization time** | 30 s | 20 s |
| **Adjustment** | external | external |
| **Electric compensation range** | –100 g ÷ 200 g | 100 g ÷ 30.5 kg |
| **Internal supplementary weights** | semi-automatic | — |
| **External supplementary weights** | 300 g, 200 g | — |
| **Eccentricity (for test weight)** | 2 d / 1 mm | 2 d / 1 mm |
| **Display** | 5.7" colour resistive touch screen | 5.7" colour resistive touch screen |
| **Keypad** | 8 keys | 8 keys |
| **Ingress protection - indicator** | IP 43 | IP 43 |
| **Touch-free operation** | 2 programmable sensors | 2 programmable sensors |
| **USB-A** | 2 | 2 |
| **Ethernet** | 10 / 100 Mbit | 10 / 100 Mbit |
| **RS 232** | 2 | 2 |
| **Wi-Fi®** | 802.11 b/g/n | 802.11 b/g/n |
| **IN/OUT** | 4 × IN, 4 × OUT | 4 × IN, 4 × OUT |
| **Power supply** | 110 ÷ 230 V AC / 50 ÷ 60 Hz | 110 ÷ 230 V AC / 50 ÷ 60 Hz |
| **Operating temperature** | +15 ÷ +30 °C | +15 ÷ +30 °C |
| **Operating temperature change rate** | ±0.5 °C / 12 h (± 0.3 °C / 4 h) | ±0.5 °C / 12 h |
| **Relative humidity variations** | ±3% / 4 h | (30 ÷ 70)% |
| **Relative humidity*** ** | 40 ÷ 60% | ±5% / 4 h |
| **Transport and storage temperature** | –20 ÷ +50 °C | –20 ÷ +50 °C |
| **Weighing pan dimensions** | ø 200 mm (ø 300 mm) | ø 220 mm (ø 300 mm) |
| **Self-centring weighing pan dimensions**** | ø 220 mm | ø 220 mm |
| **Anti-draft chamber dimensions** | 660 × 680 × 450 mm | 700 × 545 × 440 mm |
| **Mass comparator dimensions** | 455 × 385 × 315 mm | 454 × 200 × 275 mm |
| **Dimensions of mass comparator with self-centring weighing pan**** | 455 × 385 × 315 mm | 455 × 385 × 315 mm |
| **Indicator dimensions** | 206 × 140 × 70 mm | 206 × 140 × 70 mm |
| **Mass comparator net weight** | 45 kg | 23 kg |
| **Mass comparator gross weight** | 59 kg | 37 kg |
| **Net weight of mass comparator with self-centring weighing pan**** | 47 kg | 25 kg |
| **Anti-draft chamber net weight** | 18 kg | 16 kg |
| **Gross weight of mass comparator with self-centring weighing pan**** | 49 kg | 39 kg |
| **Anti-draft chamber gross weight** | 30 kg | 28 kg |
| **Anti-draft chamber packaging dimensions** | 970 × 930 × 750 mm | 960 × 830 × 730 mm |
| **Mass comparator packaging dimensions** | 1160 × 650 × 690 mm | 1160 × 650 × 690 mm |
| **Packaging dimensions of mass comparator with self-centring weighing pan**** | 1160 × 650 × 690 mm | 1160 × 650 × 690 mm |

* repeatability is expressed as a standard deviation determined for 6 ABBA cycles
** optional design
*** non-condensing conditions
Wi-Fi ® is a registered trademark of Wi-Fi Alliance.

# Technical Specifications

| | APP 64.4Y.KO |
|---|---|
| **OIML calibration range E1** | — |
| **OIML calibration range E2** | 50 kg |
| **OIML calibration range F1** | 20 kg ÷ 50 kg |
| **OIML calibration range F2** | 5 kg ÷ 50 kg |
| **OIML calibration range M1** | 1 kg ÷ 50 kg |
| **OIML calibration range M2** | 1 kg ÷ 50 kg |
| **Maximum capacity [Max]** | 64 kg |
| **Readability [d]** | 10 mg |
| **Standard repeatability [5% Max]*** | 13 mg |
| **Standard repeatability [Max] *** | 18 mg |
| **Permissible repeatability *** | 30 mg |
| **Stabilization time** | 20 s |
| **Adjustment** | external |
| **Electric compensation range** | 0 g ÷ 64 kg |
| **Internal supplementary weights** | — |
| **External supplementary weights** | — |
| **Eccentricity (for test weight)** | 2 d / 1 mm |
| **Display** | 5.7" colour resistive touch screen |
| **Keypad** | 8 keys |
| **Ingress protection - indicator** | IP 43 |
| **Touch-free operation** | 2 programmable sensors |
| **USB-A** | 2 |
| **Ethernet** | 10 / 100 Mbit |
| **RS 232** | 2 |
| **Wi-Fi®** | 802.11 b/g/n |
| **IN/OUT** | 4 × IN, 4 × OUT |
| **Power supply** | 110 ÷ 230 V AC / 50 ÷ 60 Hz |
| **Operating temperature** | +15 ÷ +30 °C |
| **Operating temperature change rate** | ±3.5 °C / 12 h |
| **Relative humidity variations** | ±10% / 4 h |
| **Relative humidity***** | 40 ÷ 60% |
| **Transport and storage temperature** | –20 ÷ +50 °C |
| **Weighing pan dimensions** | ø 300 mm (ø 400 mm) |
| **Self-centring weighing pan dimensions**** | ø 300 mm |
| **Anti-draft chamber dimensions** | 700 × 545 × 440 mm |
| **Mass comparator dimensions** | 520 × 205 × 400 mm |
| **Dimensions of mass comparator with self-centring weighing pan**** | 455 × 385 × 315 mm |
| **Indicator dimensions** | 206 × 140 × 70 mm |
| **Mass comparator net weight** | 25 kg |
| **Mass comparator gross weight** | 39 kg |
| **Net weight of mass comparator with self-centring weighing pan**** | 25 kg |
| **Anti-draft chamber net weight** | 16 kg |
| **Gross weight of mass comparator with self-centring weighing pan**** | 39 kg |
| **Anti-draft chamber gross weight** | 28 kg |
| **Anti-draft chamber packaging dimensions** | 960 × 830 × 730 mm |
| **Mass comparator packaging dimensions** | 1160 × 650 × 690 mm |
| **Packaging dimensions of mass comparator with self-centring weighing pan**** | 1160 × 650 × 690 mm |

* repeatability is expressed as a standard deviation determined for 6 ABBA cycles
** optional design
*** non-condensing conditions
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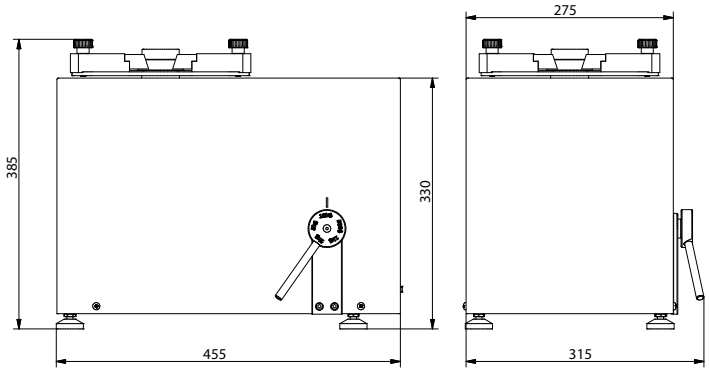
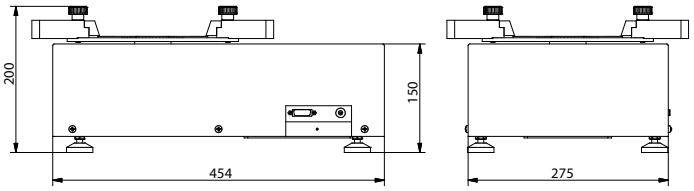
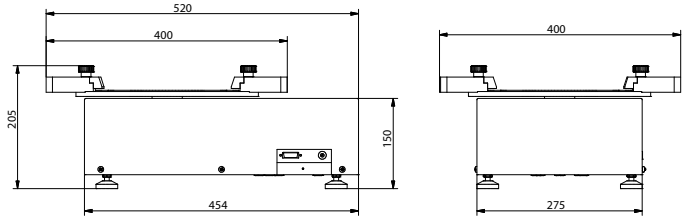
# Dimensions



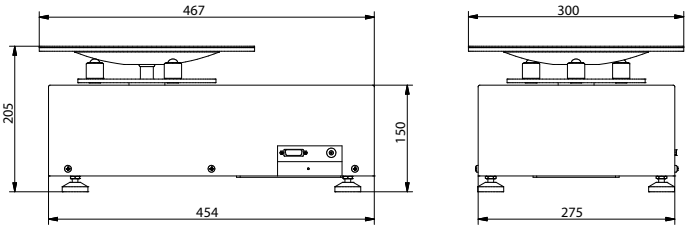

APP-10.4Y.KO




APP-30.4Y.KO




APP-64.4Y.KO




APP-30.4Y.SSC self-centring weighing pan

# Accessories

**Weighing Tables**
- granite anti-vibration table
- anti-vibration table for APP series mass comparators

**Professional weighing**
- self-centring pan

**Ambient Conditions**
- THB-S or THB-P sensor

**Peripheral Devices**
- Epson dot matrix printer
- barcode scanner
- WD-5/3Y LCD display (backlit)

**Cables, Converters**
- RS-232 – P0108 computer cable
- RS-232 – P0167 computer cable
- RS-232 – P0151 Epson printer cable

**Electrical Accessories**
- power supply with ZR–02 battery

**Anti-Draft Chambers**
- anti-draft chamber for APP.3Y.KO mass comparator

## Dedicated Software

**RMCS System**
- performance of calibration procedures in a laboratory from the moment the order is placed, to the moment of issuing a calibration certificate
- compatible with THB sensors enabling recording ambient conditions
- export of report results to various files
- archiving calibration protocols, orders, certificates and ambient conditions

**RADWAG Remote Desktop**
- remote control of the mass comparator using computer, telephone or tablet
- sending text messages
- version for Windows 10 and Android systems

**R-LAB**
- collecting measurements
- carrying out statistical analysis of measurements
- customized graphs and reports

**Parameters Editor**
- remote change of parameters
- remote on-line preview of the display
- displaying current mass indication
- software update
- file loading, editing and saving parameters to a file
- import and export of parameters
- interfaces: RS232, Ethernet and Wireless Connection
- quick and easy edition of balance parameters using computer