

Entris® II Advanced Line



특장점

- 내장 된 실시간 수평 지원으로 저울의 수평을 간소화
- 통합 보호 시스템을 사용하여 계량 결과의 신뢰성 상승
- 사용자 관리를 통한 저울의 설정값 변경의 제한된 접근
- CalAuditTrail을 통한 공백없는 문서화

제품 정보

어떤 계량이든 새로운 Entris® II 저울은 언제나 올바른 선택입니다. 150년 독일의 기술적인 전문지식과 독보적인 가치 제공을 바탕으로 Entris® II 의 두 가지 제품군을 통하여 사용자의 특정 계량 요구사항을 충족할 수 있는 저울을 찾을 수 있습니다. 그리고 분말을 혼합 장치로 옮길 때 분말 먼지를 피함으로써 작업자에게 보다 안전한 환경을 조성할 것으로 기대됩니다.

Entris® II Advanced 라인은 실시간 수평 지원, 통합 보호 시스템, CalAuditTrail, 그래픽 터치스크린 디스플레이 및 13 개의 내장 애플리케이션을 제공하는 38개 이상의 모델을 통해 Entris® II 제품군에 추가 가치를 제공합니다.

기술 사양

Ambient Conditions		Value
Installation site	For indoor use only, max. height above sea level	3000 m
Temperature	Environment (metrological data)*	+10 – +30° C
	Environment	+5 – +40° C
	Storage and transport	-10 – +60° C
Relative humidity**	At temperatures up to 31° C, non-condensing, then linear decrease from max. 80% at 31° C to max. 50% at 40° C	15 – 80%
No heat from heating systems or direct sunlight		
No electromagnetic fields		
Power Supply Device		Value
Input voltage		15 V _{DC} (±10%)
Power consumption, max		4 W
Only by Sartorius power supply unit YEPS01-15V0W with interchangeable country-specific plug-in AC adaptors		
Power Supply Unit		Value
Type: Sartorius power supply unit YEPS01-15V0W		
Primary	Voltage	100 – 240 V _{AC} (±10%)
	Frequency	50 – 60 Hz
	Current consumption, maximum	0.2 A
Secondary	Voltage	15 V _{DC} (±5%)
	Current, maximum	0.53 A
Short-circuit protection		Electronic
Protection class according to IEC 60950-1		II
Pollution level according to IEC 61010-1		2
Overvoltage category according to IEC 60664-1		II
Other data: See label on the power supply unit		
Electromagnetic Compatibility		
Interference resistance: Suitable for use in industrial areas		
Transient emissions	Class B Suitable for use in residential areas and areas that are connected to a low voltage network that also supplies residential buildings	
Materials		
Housing	Polybutylene terephthalate (PBT)	
Control module	Glass	
Draft shield	Glass polybutylene terephthalate (PBT)	
Weighing pan	Stainless steel	
Warm-up Time		Value
Device, approx		2 h

* For conformity-assessed (verified) balances in accordance with EU requirements, refer to the information on the balance.

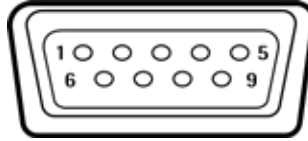
** For conformity-assessed (verified) balances in accordance with EU requirements, the legal regulations apply.

Interfaces

Specifications of the RS232 Interface

Type of interface	Serial interface
Interface operation	Full duplex
Level	RS232
Connection	D-sub connector, 9-pin
Maximum cable length	10 m

Pin assignment



Pin 1: Not assigned
Pin 2: Data output (TxD)
Pin 3: Data input (RxD)
Pin 4: Not assigned
Pin 5: Internal ground
Pin 6: Not assigned
Pin 7: Clear to Send (CTS)
Pin 8: Request to Send (RTS)
Pin 9: Universal key

Specifications for the USB-C Interface

Communication	USB UTL
Connectable devices	Sartorius printers, Sartorius second display, FTDI cable or USB memory stick

Specifications for the PC-USB Interface

Communication	USB Device
Connectable devices	PC

Calibration

Internal calibration isoCAL (models with marking i-1x)

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

Display

Intuitive graphic touch technology

Built-in Applications

- Weighing | Dosing
 - Counting
 - Percentage weighing
 - Mixing | Net total
 - Components | Totalizing
 - Animal weighing
 - Calculation | Free factor
 - Density determination
 - Underfloor weighing feature for bigger samples
 - Statistics
 - Peakhold
 - Checkweighing
 - Mass unit conversion
 - Pipette smart test
-

Languages

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

Protection

- Chemical resistant housing parts
 - Glass parts of the draft shield are coated to reduce electrostatic influences
 - Display foil (available as accessory)
 - Dust cover for balances (also available as accessory)
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Anti-theft Lock

Kensington lock and lockdown capability for cable or chain

* The availability of units depends on national legislation and is therefore country-specific.

분동 내장형 모델

Model BCA	Unit	324i-1x ¹	224i-1x ¹	124i-1x ¹	64i-1x ¹	1203i-1x ¹	623i-1x ¹	423i-1x ¹	323i-1x ¹
Readability Scale interval (d)	mg	0.1	0.1	0.1	0.1	1	1	1	1
Maximum capacity (Max)	g	320	220	120	60	1,200	620	420	320
Weighing system		EMC	EMC	EMC	EMC	EMC	EMC	EMC	EMC
Repeatability									
At 5% load, typical value	± mg	0.08	0.08	0.08	0.08	0.5	0.5	0.5	0.5
At approx. maximum load, typical value	± mg	0.1	0.1	0.1	0.1	1	1	1	1
Linearity deviation									
Limits	± mg	0.3	0.2	0.2	0.2	2	2	2	2
Typical value	± mg	0.06	0.06	0.06	0.06	0.6	0.6	0.6	0.6
Sensitivity drift between +10° C and +30° C	± ppm/K	1	1	1	1	1.5	2	2	2
Tare maximum capacity (subtractive)		<100% of maximum capacity							
isoCAL (only for i-1x models):									
Temperature change	K	1.5	1.5	1.5	1.5	1.5	2	2	2
Time interval	h	4	4	4	4	4	6	6	6
For models with approval:									
Accuracy class		I	I	I	I	I	II	II	II
Type		BC-AA	BC-AB	BC-AB	BC-AB	BC-AC	BC-AD	BC-AD	BC-AD
Verification scale interval (e)	mg	1	1	1	1	10	10	10	10
Minimum load (Min)	mg	10	10	10	10	100	20	20	20
Minimum initial weighing according to USP (United States Pharmacopeia), Chap. 41									
Optimum minimum initial weighing	g	0.082	0.082	0.082	0.082	0.82	0.82	0.82	0.82
Typical minimum initial weighing	g	0.16	0.16	0.16	0.16	1	1	1	1
Typical measurement time	s	≤2.0	≤2.0	≤2.0	≤2.0	≤1.5	≤1.5	≤1.5	≤1.5
Typical stabilization time	s	≤1.5	≤1.5	≤1.5	≤1.5	≤1.0	≤1.0	≤1.0	≤1.0
Recommended calibration weight									
External calibrated test weight	g	200	200	100	50	1,000	500	200	200
Accuracy class in accordance with OIML R111-1		E2	E2	E2	E2	E2	F1	F1	F1
Weighing pan size	mm	Ø 90	Ø 90	Ø 90	Ø 90	Ø 120	Ø 120	Ø 120	Ø 120
Weighing chamber height*	mm	240	240	240	240	240	240	240	240
Net weight, approx.	kg	6.20	6.20	6.20	6.20	6.30	6.30	6.30	6.30
Gross weight, approx.	kg	8.00	8.00	8.00	8.00	8.10	8.10	8.10	8.10

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

¹ Country-specific marking in model:

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
x = CCN: Balances with approval for China
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 = 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 Russia

223i-1x ¹	6202i-1x ¹	4202i-1x ¹	3202i-1x ¹	2202i-1x ¹	1202i-1x ¹	822i-1x ¹	12201i-1x ¹	10201i-1x ¹	8201i-1x ¹	5201i-1x ¹	2201i-1x ¹
1	10	10	10	10	10	10	100	100	100	100	100
220	6,200	4,200	3,200	2,200	1,200	820	12,200	10,200	8,200	5,200	2,200
EMC	EMC	EMC	EMC	EMC	EMC	EMC	EMC	EMC	EMC	EMC	EMC
0.5	5	5	5	5	5	5	50	50	50	50	50
1	10	10	10	10	10	10	100	100	100	50	50
2	20	20	20	20	20	20	100	100	100	100	100
0.6	6	6	6	6	6	6	60	60	60	60	60
2	2	2	2	2	2	2	4	4	4	2	2
<100% of maximum capacity											
2	2	2	2	2	2	2	2	2	2	2	2
6	6	6	6	6	6	6	6	6	6	6	6
II	II	II	II	II	II	II	II	II	II	II	II
BC-AD	BC-AE	BC-AE	BC-AE	BC-AE	BC-AE	BC-AE	BC-AG	BC-AG	BC-AG	BC-AE	BC-AE
10	100	100	100	100	100	100	1,000	1,000	1,000	100	100
20	500	500	500	500	500	500	5,000	5,000	5,000	5,000	5,000
0.82	8.2	8.2	8.2	8.2	8.2	8.2	82	82	82	82	82
1	10	10	10	10	10	10	100	100	100	100	100
≤1.5	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0
≤1.0	≤0.9	≤0.9	≤0.9	≤0.9	≤0.9	≤0.9	≤0.9	≤0.9	≤0.9	≤0.9	≤0.9
200	5,000	2,000	2,000	2,000	1,000	500	10,000	10,000	5,000	5,000	2,000
F1	F1	F1	F1	F1	F1	F2	F2	F2	F2	F2	F2
Ø 120	182 x 182	182 x 182	182 x 182	182 x 182	182 x 182	182 x 182	182 x 182	182 x 182	182 x 182	182 x 182	182 x 182
240	-	-	-	-	-	-	-	-	-	-	-
6.30	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20	6.20
8.10	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00

내부 조정 기능 없는 모델 (승인)

Model BCA	Unit	224-1x ¹	124-1x ¹	64-1x ¹	623-1x ¹	423-1x ¹	323-1x ¹	223-1x ¹
Readability Scale interval (d)	mg	0.1	0.1	0.1	1	1	1	1
Maximum capacity (Max)	g	220	120	60	620	420	320	220
Weighing system		EMC	EMC	EMC	EMC	EMC	EMC	EMC
Repeatability								
At 5% load, typical value	± mg	0.08	0.08	0.08	0.5	0.5	0.5	0.5
At approx. maximum load, typical value	± mg	0.1	0.1	0.1	1	1	1	1
Linearity deviation								
Limits	± mg	0.2	0.2	0.2	2	2	2	2
Typical value	± mg	0.06	0.06	0.06	0.6	0.6	0.6	0.6
Sensitivity drift between +10° C and +30° C	± ppm/K	1	1	1	2	2	2	2
Tare maximum capacity (subtractive)		<100% of maximum capacity						
isoCAL (only for i-1x models):								
Temperature change	K	-	-	-	-	-	-	-
Time interval	h	-	-	-	-	-	-	-
For models with approval:								
Accuracy class		I	I	I	II	II	II	II
Type		BC-AB	BC-AB	BC-AB	BC-AD	BC-AD	BC-AD	BC-AD
Verification scale interval (e)	mg	1	1	1	10	10	10	10
Minimum load (Min)	mg	10	10	10	20	20	20	20
Minimum initial weighing according to USP (United States Pharmacopeia), Chap. 41								
Optimum minimum initial weighing	g	0.082	0.082	0.082	0.82	0.82	0.82	0.82
Typical minimum initial weighing	g	0.16	0.16	0.16	1	1	1	1
Typical measurement time	s	≤2.0	≤2.0	≤2.0	≤1.5	≤1.5	≤1.5	≤1.5
Typical stabilization time	s	≤1.5	≤1.5	≤1.5	≤1.0	≤1.0	≤1.0	≤1.0
Recommended calibration weight								
External calibrated test weight	g	200	100	50	500	200	200	200
Accuracy class in accordance with OIML R111-1		E2	E2	E2	F1	F1	F1	F1
Weighing pan size	mm	Ø 90	Ø 90	Ø 90	Ø 120	Ø 120	Ø 120	Ø 120
Weighing chamber height*	mm	240	240	240	240	240	240	240
Net weight, approx.	kg	5.90	5.90	5.90	5.90	5.90	5.90	5.90
Gross weight, approx.	kg	7.70	7.70	7.70	7.70	7.70	7.70	7.70

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

¹ Country-specific marking in model:
x = CCN: Balances with approval for China
x = OIN: Balances with approval for India

6202-1x ¹	4202-1x ¹	3202-1x ¹	2202-1x ¹	1202-1x ¹	822-1x ¹	12201-1x ¹	10201-1x ¹	8201-1x ¹	5201-1x ¹	2201-1x ¹
10	10	10	10	10	10	100	100	100	100	100
6,200	4,200	3,200	2,200	1,200	820	12,200	10,200	8,200	5,200	2,200
EMC	EMC	EMC	EMC	EMC	EMC	EMC	EMC	Strain gauge	EMC	EMC
5	5	5	5	5	5	50	50	50	50	50
10	10	10	10	10	10	100	100	100	50	50
20	20	20	20	20	20	100	100	300	100	100
6	6	6	6	6	6	60	60	100	60	60
2	2	2	2	2	2	4	4	7	2	2
<100% of maximum capacity										
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
II	II	II	II	II	II	II	II	II	II	II
BC-AE	BC-AE	BC-AE	BC-AE	BC-AE	BC-AE	BC-AG	BC-AG	BC-AI	BC-AE	BC-AE
100	100	100	100	100	100	1000	1000	1000	100	100
500	500	500	500	500	500	5000	5000	5000	5000	5000
8.2	8.2	8.2	8.2	8.2	8.2	82	82	82	82	82
10	10	10	10	10	10	100	100	100	100	100
≤1.0	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0
≤0.9	≤0.9	≤0.9	≤0.9	≤0.9	≤0.9	≤0.9	≤0.9	≤0.9	≤0.9	≤0.9
5,000	2,000	2,000	2,000	1,000	500	10,000	10,000	5,000	5,000	2,000
F1	F1	F1	F1	F1	F2	F2	F2	F2	F2	F2
182 x 182	182 x 182	182 x 182	182 x 182	182 x 182	182 x 182	182 x 182	182 x 182	182 x 182	182 x 182	182 x 182
-	-	-	-	-	-	-	-	-	-	-
4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.30	4.60	4.60
5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.10	5.40	5.40

내부 조정 기능 없는 모델 (미승인)

Model BCA	Unit	224-1x ¹	124-1x ¹	64-1x ¹	623-1x ¹	423-1x ¹	323-1x ¹	223-1x ¹
Readability Scale interval (d)	mg	0.1	0.1	0.1	1	1	1	1
Maximum capacity (Max)	g	220	120	60	620	420	320	220
Weighing system		EMC	EMC	EMC	EMC	EMC	EMC	EMC
Repeatability								
At 5% load, typical value	± mg	0.08	0.08	0.08	0.5	0.5	0.5	0.5
At approx. maximum load, typical value	± mg	0.1	0.1	0.1	1	1	1	1
Linearity deviation								
Limits	± mg	0.2	0.2	0.2	2	2	2	2
Typical value	± mg	0.06	0.06	0.06	0.6	0.6	0.6	0.6
Sensitivity drift between +10° C and +30° C	± ppm/K	1	1	1	2	2	2	2
Tare maximum capacity (subtractive)		<100% of maximum capacity						
isoCAL (only for i-1x models):								
Temperature change	K	-	-	-	-	-	-	-
Time interval	h	-	-	-	-	-	-	-
For models with approval:								
Accuracy class		-	-	-	-	-	-	-
Type		-	-	-	-	-	-	-
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	0.082	0.082	0.082	0.82	0.82	0.82	0.82
Typical minimum initial weighing	g	0.16	0.16	0.16	1	1	1	1
Typical measurement time	s	≤2.0	≤2.0	≤2.0	≤1.5	≤1.5	≤1.5	≤1.5
Typical stabilization time	s	≤1.5	≤1.5	≤1.5	≤1.0	≤1.0	≤1.0	≤1.0
Recommended calibration weight								
External calibrated test weight	g	200	100	50	500	200	200	200
Accuracy class in accordance with OIML R111-1		E2	E2	E2	F1	F1	F1	F1
Weighing pan size	mm	Ø 90	Ø 90	Ø 90	Ø 120	Ø 120	Ø 120	Ø 120
Weighing chamber height*	mm	240	240	240	240	240	240	240
Net weight, approx.	kg	5.90	5.90	5.90	5.90	5.90	5.90	5.90
Gross weight, approx.	kg	7.70	7.70	7.70	7.70	7.70	7.70	7.70

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

¹ Country-specific marking in model:

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

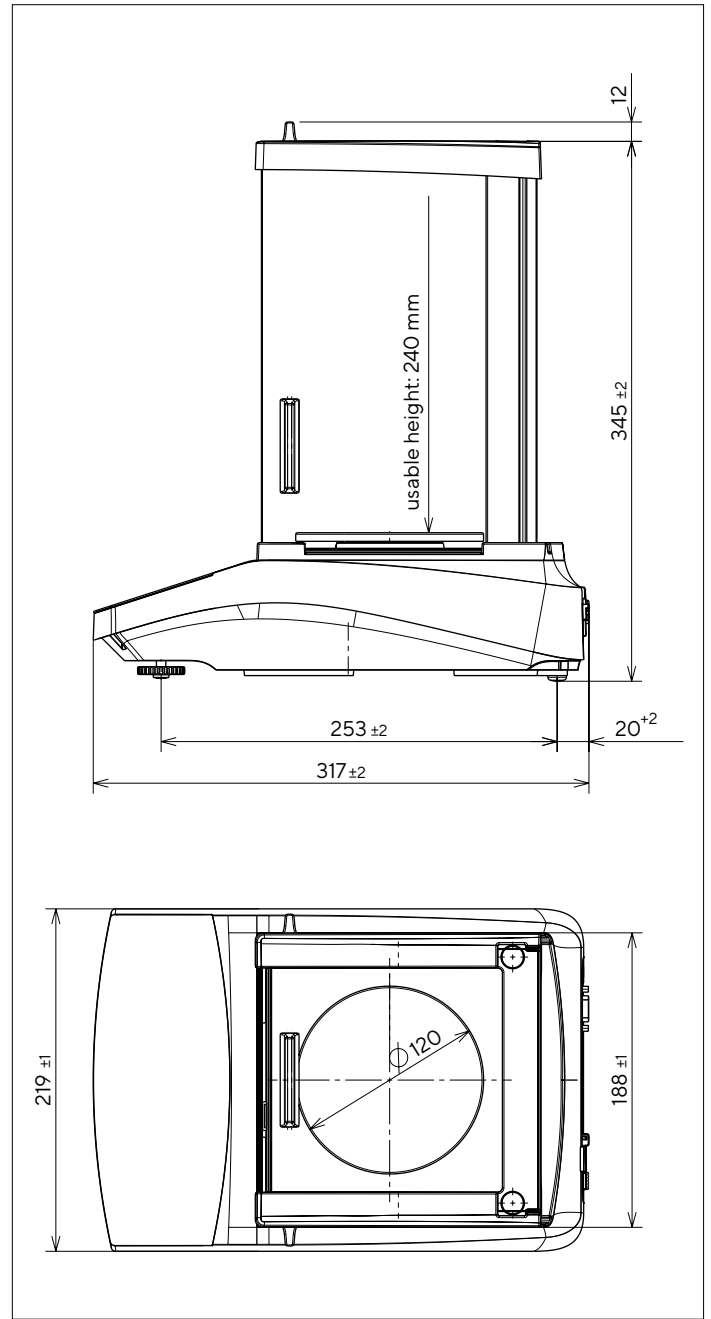
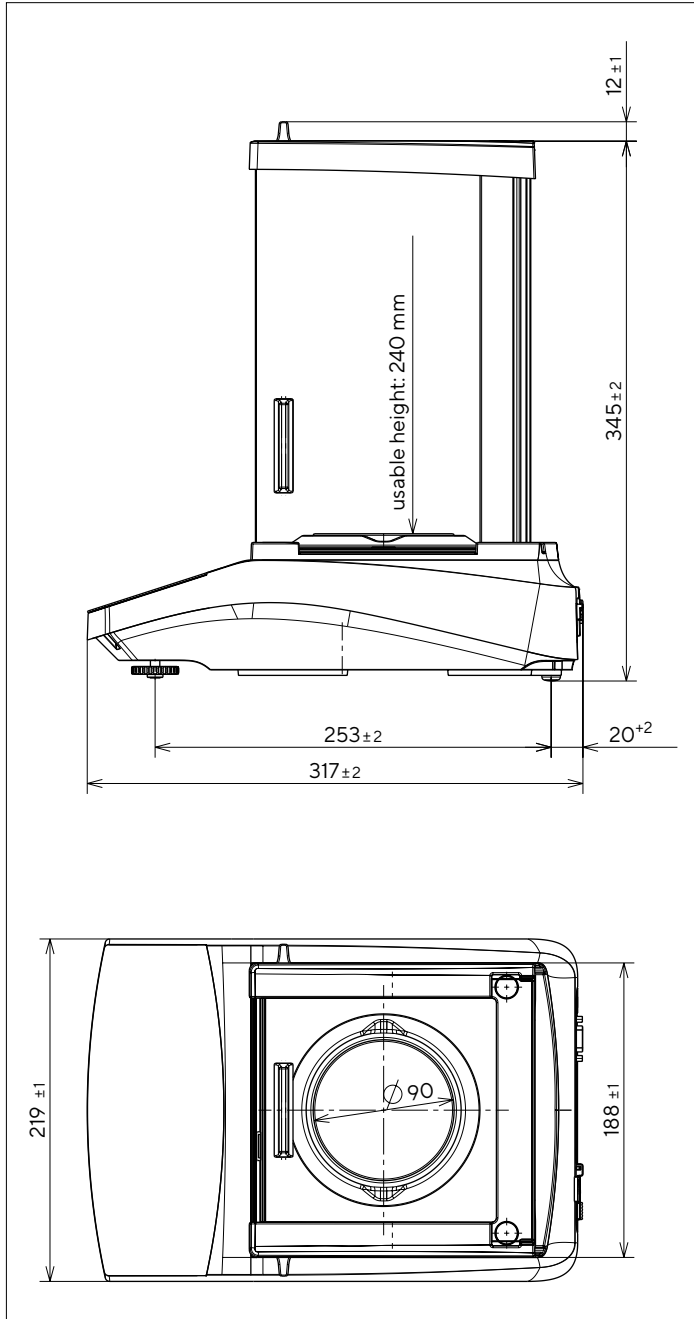
x = SKR: Standard balances with country-specific additions for South Korea

6202-1x ¹	4202-1x ¹	3202-1x ¹	2202-1x ¹	1202-1x ¹	822-1x ¹	12201-1x ¹	10201-1x ¹	8201-1x ¹	5201-1x ¹	2201-1x ¹
10	10	10	10	10	10	100	100	100	100	100
6,200	4,200	3,200	2,200	1,200	820	12,200	10,200	8,200	5,200	2,200
EMC	EMC	EMC	Strain gauge	Strain gauge	Strain gauge	EMC	EMC	Strain gauge	Strain gauge	Strain gauge
5	5	5	5	5	5	50	50	50	50	50
10	10	10	10	10	10	100	100	100	100	100
20	20	20	20	20	20	100	100	300	300	300
6	6	6	6	6	6	60	60	100	100	100
2	2	2	3.5	3.5	3.5	4	4	7	7	7
<100% of maximum capacity										
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
8.2	8.2	8.2	8.2	8.2	8.2	82	82	82	82	82
10	10	10	10	10	10	100	100	100	100	100
≤1.0	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0
≤0.9	≤0.9	≤0.9	≤0.9	≤0.9	≤0.9	≤0.9	≤0.9	≤0.9	≤0.9	≤0.9
5,000	2,000	2,000	2,000	1,000	500	10,000	10,000	5,000	5,000	2,000
F1	F1	F1	F1	F1	F2	F2	F2	F2	F2	F2
182 x 182	182 x 182	182 x 182	182 x 182	182 x 182	182 x 182	182 x 182	182 x 182	182 x 182	182 x 182	182 x 182
-	-	-	-	-	-	-	-	-	-	-
4.60	4.60	4.60	4.30	4.30	4.30	4.60	4.60	4.30	4.30	4.30
5.10	5.10	5.10	5.10	5.10	5.10	5.10	5.10	5.10	5.10	5.10

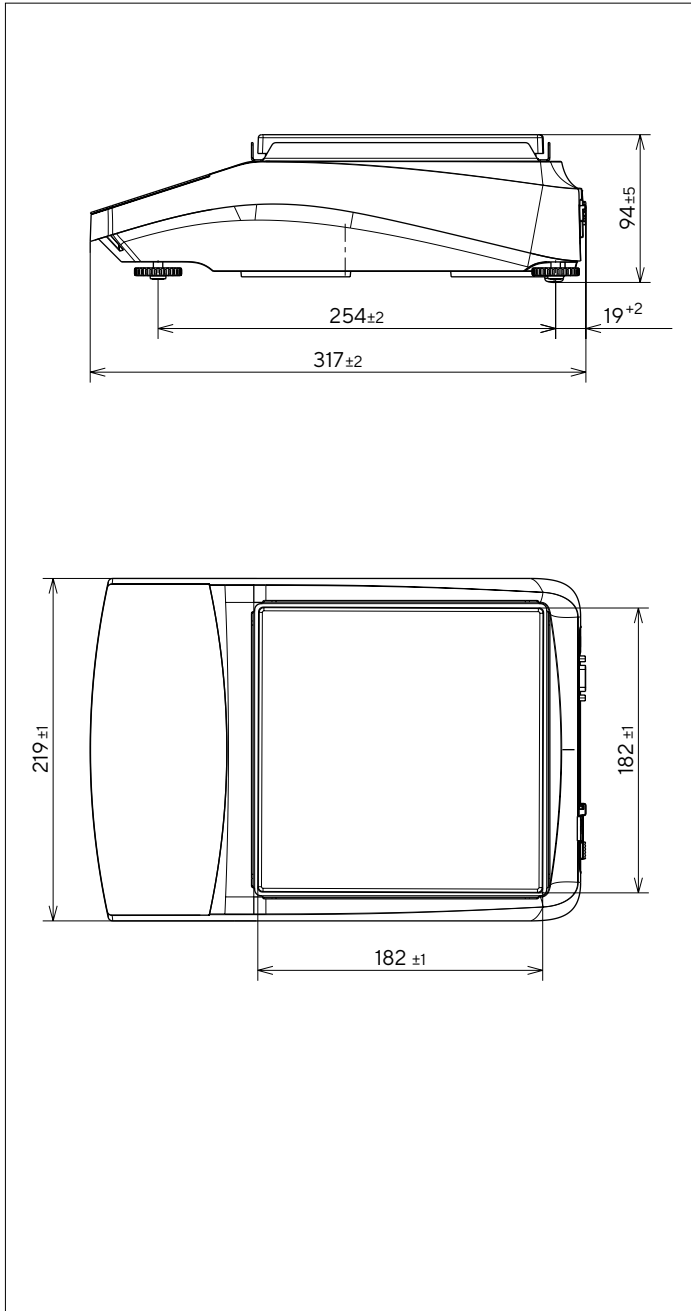
제품 도면

Models with a readability of 0.1 mg
All dimensions are given in millimeters

Models with a readability of 1 mg
All dimensions are given in millimeters



Models with a readability of ≥ 10 mg
All dimensions are given in millimeters



악세서리

These tables contain an excerpt of the accessories that can be ordered. For information on other products, contact Sartorius.

저울 악세서리

Item	Quantity	Order number
Display protection film (set of 5)	1	YDC10
Dust cover for balances with an analytical draft shield	1	6960BC01
Dust cover for balances with rectangular weighing pan	1	YDC30
In-use cover (set of 5)	1	YIC01
Density determination set for solids and liquids for balances with a readability of 0.1 mg 1 mg	1	YDK03
“Kensington Lock” anti-theft device	1	YKL01
Pedal button foot switch	1	YFS03
Second display remote display	1	YSD01
Below-balance weighing (not for models in legal metrology)		
Hook M5	1	69EA0039
Weighing table		
Made from wood with natural stone	1	YWT09
Made from natural stone, with vibration dampening	1	YWT03
Wall console made from natural stone	1	YWT04
Converter cable 5 V _{DC} > 15 V _{DC}	1	YCC-5V-15V

데이터 통신을 위한 프린터 및 액세서리

Item	Quantity	Order number
Thermal printer (USB-B)	1	YDP40
Thermal transfer printer (USB-B, RS232)	1	YDP30
Dot matrix printer (RS232)	1	YDP20-OCE
Data cable USB-C > USB-B	1.5 m	YCC-USB-C-B
Data cable USB-C > USB-A	1.5 m	YCC-USB-C-A
Data cable RS232 (9-pin) > USB-A	1.5 m	YCC-DO9M-USB-A
Data cable RS232 (9-pin) male > RS232 (9-pin) male	1.5 m	YCC-DO9MM
Data cable RS232 (9-pin) male > RS232 (9-pin) female	1.5 m	YCC-DO9MF
Y-adaptor RS232 (9-pin) male > 2x RS232 (9-pin) female	1.5 m	YCC-DO9M-2DO9F

External Calibration and Adjustment Weights

BCA model	Weight	Accuracy class	Order number
324 224	200 g	E2	YCW522-AC-02
124	100 g	E2	YCW512-AC-02
64	50 g	E2	YCW452-AC-02
1203	1,000 g	E2	YCW612-AC-02
623	500 g	F1	YCW553-AC-02
423 323 223	200 g	F1	YCW523-AC-02
6202	5,000 g	F1	YCW653-AC-02
4202 3202 2202	2,000 g	F1	YCW623-AC-02
1202	1,000 g	F1	YCW613-AC-02
822	500 g	F2	YCW554-AC-02
12201 10201	10,000 g	F2	YCW714-AC-02
8201 5201	5,000 g	F2	YCW654-AC-02
2201	2,000 g	F2	YCW624-AC-02

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