18.2.2 XS precision balances with readability 10 mg, S platform with draft shield element

Technical data (limit values)

Model	XS802S	XS2002S	XS4002S	XS4002SDR	XS6002S	XS6002SDR
Maximum load	810 g	2100 g	4100 g	4100 g	6100 g	6100 g
Maximum load, fine range	–	–	–	800 g	–	1200 g
Readability	10 mg	10 mg	10 mg	100 mg	10 mg	100 mg
Readability, fine range	–	–	–	10 mg	–	10 mg
Taring range	0…810 g	0…2100 g	0…4100 g	0…4100 g	0…6100 g	0…6100 g
Repeatability (sd)	8 mg	8 mg	8 mg	60 mg	8 mg	60 mg
Repeatability (sd), fine range	–	–	–	8 mg	–	8 mg
Linearity	20 mg	20 mg	20 mg	60 mg	20 mg	60 mg
Eccentric load deviation (measured at)	20 mg (500 g)	30 mg (1 kg)	30 mg (2 kg)	100 mg (2 kg)	30 mg (2 kg)	100 mg (2 kg)
Sensitivity offset	$7.5\times10^{-5}\cdot R_{nt}$	$3\times10^{-5}\cdot R_{nt}$	$1.5\times10^{-5}\cdot R_{nt}$	$1.5\times10^{-5}\cdot R_{nt}$	$1\times10^{-5}\cdot R_{nt}$	$2.5\times10^{-5}\cdot R_{nt}$
Sensitivity temperatur drift [1]	$3\times10^{-6}/°C\cdot R_{nt}$	$3\times10^{-6}/°C\cdot R_{nt}$	$3\times10^{-6}/°C\cdot R_{nt}$	$3\times10^{-6}/°C\cdot R_{nt}$	$3\times10^{-6}/°C\cdot R_{nt}$	$3\times10^{-6}/°C\cdot R_{nt}$
Sensitivity stability [2]	$2.5\times10^{-5}/a\cdot R_{nt}$	$2.5\times10^{-5}/a\cdot R_{nt}$	$1.5\times10^{-5}/a\cdot R_{nt}$	$1.5\times10^{-5}/a\cdot R_{nt}$	$1.5\times10^{-5}/a\cdot R_{nt}$	$1.5\times10^{-5}/a\cdot R_{nt}$
Settling time	1.2 s	1.2 s	1.2 s	1.2 s	1.2 s	1.2 s
Interface update rate	23 /s	23 /s	23 /s	23 /s	23 /s	23 /s
Internal adjustment weigths [3]	1	1	1	1	1	1
Balance dimensions (W x D x H) [mm]	194 x 366 x 96	194 x 366 x 96	194 x 366 x 96	194 x 366 x 96	194 x 366 x 96	194 x 366 x 96
Weighing pan dimensions (W x D) [mm]	170 x 205	170 x 205	170 x 205	170 x 205	170 x 205	170 x 205
Weight [kg]	6.9	6.9	6.9	6.9	6.9	6.9

Typical data for determination of the measurement uncertainty

Model	XS802S	XS2002S	XS4002S	XS4002SDR	XS6002S	XS6002SDR
Repeatability (sd) typical	$4mg+2.5\times10^{-6}\cdot R_{gr}$	$4mg+1\times10^{-6}\cdot R_{gr}$	$4mg+5\times10^{-7}\cdot R_{gr}$	$40mg+2.5\times10^{-6}\cdot R_{gr}$	$4mg+3\times10^{-7}\cdot R_{gr}$	$40mg+1.5\times10^{-6}\cdot R_{gr}$
Differential nonlinearity (sd) typical	$\sqrt{(1.5\times10^{-8}g\cdot R_{nt})}$	$\sqrt{(6\times10^{-9}g\cdot R_{nt})}$	$\sqrt{(3\times10^{-9}g\cdot R_{nt})}$	$\sqrt{(3\times10^{-9}g\cdot R_{nt})}$	$\sqrt{(2\times10^{-9}g\cdot R_{nt})}$	$\sqrt{(2\times10^{-9}g\cdot R_{nt})}$
Differential eccentric load deviation (sd) typical	$3\times10^{-6}\cdot R_{nt}$	$1.5\times10^{-6}\cdot R_{nt}$	$1.5\times10^{-6}\cdot R_{nt}$	$1.5\times10^{-6}\cdot R_{nt}$	$1.5\times10^{-6}\cdot R_{nt}$	$1.5\times10^{-6}\cdot R_{nt}$
Sensitivity offset (sd) typical	$2\times10^{-5}\cdot R_{nt}$	$8\times10^{-6}\cdot R_{nt}$	$4\times10^{-6}\cdot R_{nt}$	$4\times10^{-6}\cdot R_{nt}$	$2.5\times10^{-6}\cdot R_{nt}$	$2.5\times10^{-6}\cdot R_{nt}$
Minimum weight [4] (according to USP) typical	$12g+7.5\times10^{-3}\cdot R_{gr}$	$12g+3\times10^{-3}\cdot R_{gr}$	$12g+1.5\times10^{-3}\cdot R_{gr}$	$120g+7.5\times10^{-3}\cdot R_{gr}$	$12g+9\times10^{-4}\cdot R_{gr}$	$120g+4.5\times10^{-3}\cdot R_{gr}$
Minimum weight [4] (acc.to USP) fine range, typ.	–	–	–	$12g+7.5\times10^{-3}\cdot R_{gr}$	–	$12g+4.5\times10^{-3}\cdot R_{gr}$
Minimum weight [4] (1%, 2 sd) typical	$800mg+5\times10^{-4}\cdot R_{gr}$	$800mg+2\times10^{-4}\cdot R_{gr}$	$800mg+1\times10^{-4}\cdot R_{gr}$	$8g+5\times10^{-4}\cdot R_{gr}$	$800mg+6\times10^{-5}\cdot R_{gr}$	$8g+3\times10^{-4}\cdot R_{gr}$
Minimum weight [4] (1%, 2 sd) fine range, typ.	–	–	–	$800mg+5\times10^{-4}\cdot R_{gr}$	–	$800mg+3\times10^{-4}\cdot R_{gr}$

R_{gr} = Gross weight
R_{nt} = Net weight (sample weight)
sd = Standard deviation
a = Year (annum)

[1] In the temperature range 10…30 °C

[2] Sensitivity drift/year after putting into operation for the first time , with the FACT self-calibration function activated

[3] The adjustment weights of the XS precision balances are made from stainless antimagnetic chrome-nickel steel.
The masses of the adjustment weights are traceable to the prototype kilogram which is the standard unit of mass kept in Paris.

[4] The minimum weight can be improved by the following measures:
- Selecting suitable weighing parameters
- Choosing a better location
- Using smaller taring containers