

# Precisa Series 321 LS



Analytical

Precision

**CONTROLTECNICA**



## Precisa Series 321 LS

### **PRECISA DNA: ZERO TOLERANCE.**

Discerning experts at work in laboratories and industry accept no compromises in their working environments. And that is precisely why leading specialists around the world place their trust in Precisa. That's because Precisa products are prime examples of Swiss perfection and reliability. They have proved themselves for decades in more than 100 countries and are subject to rigorous quality checks throughout the entire production process. Precisa invests continuously in developing new technologies and employs a highly qualified team of specialists.

Precisa users around the world benefit from a competent service, fast reaction times and customer-oriented solutions. Anywhere, anytime.

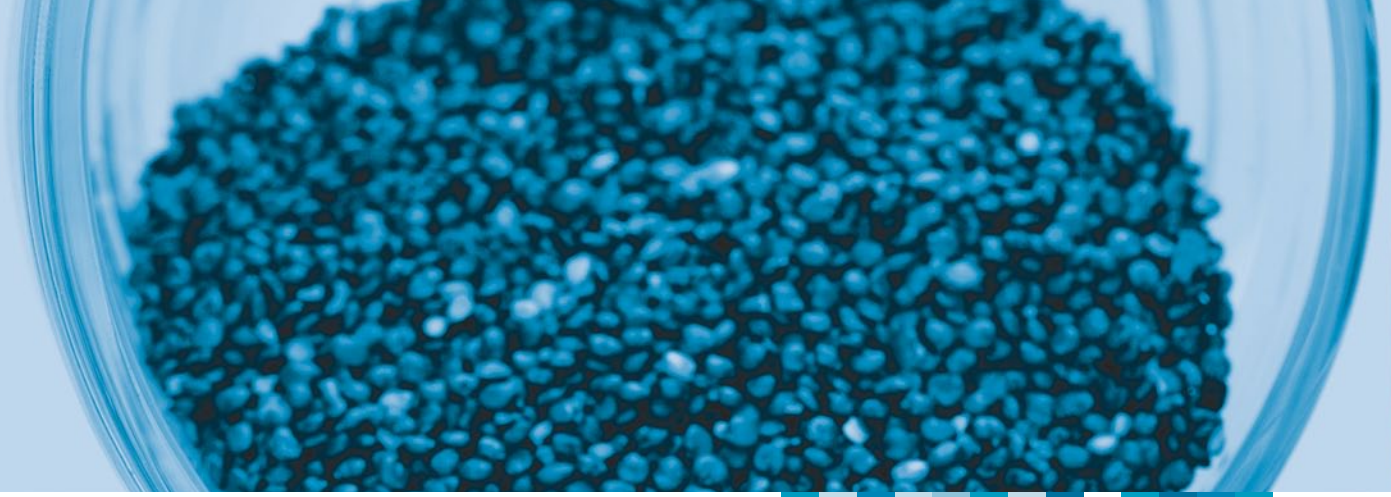
### **PRECISA DNA PURE: THE NEW SERIES 321 LS.**

The Precisa models of the new LS series combine precision with comprehensive user friendliness and an appealing design. Its reliable integrated weighing technology is extremely robust and long-lasting. Users can rely on this model range even in the toughest ambient conditions. A high-contrast display offers perfect readability in any environment.

An easy-to-use draft shield, many integrated weighing applications and interfaces for highly versatile accessories turn these latest-generation scales to a professional partner in laboratory and industry.







## Universal use

The LS models of the 321 series are extremely reliable and long-lasting thanks to the proverbial Precisa technology. They fulfil and exceed every relevant international standard. User-defined settings make them both, easy and intuitive to use. The LS series offers competent all-rounders with a broad range of applications.

## Simple operation

The draft shield on the analytical balances is designed for easy and convenient use. A direct view of the sample plate makes sampling so much easier. They are also very easy to keep clean.

A 5-key operating field structures the many applications in a very user-friendly manner and significantly enhances the use of the LS Series.

## Vacuum fluorescent display

Navigating through the range of applications is easy thanks to a strikingly clear display and easy-to-follow input commands.

## Life-long reliability

The force-compensating measuring cell developed by Precisa stands for absolute precision and durability. The cell is made by hand and meets the highest requirements that rule out automated production. Another advantage is that the cell can be repaired by Precisa technicians at the customer's premises. This guarantees a high level of investment protection.



### **Self-calibrating system SCS**

The often-copied self-calibrating system developed by Precisa allows automatic calibration. This function can be temperature- and/or timer-programmed so that the user has access to a fully calibrated instrument at precisely the right time. This option is frequently used in particular in regulated environments (GLP).



### **IP65**

The 321 LS series is available with IP65 industrial protection as an option. IP65 protects against ingress of dust and water splashes.

### **Data management**

A USB or serial interface makes it easy to transfer data to higher level systems (LIMS). Precisa provides the corresponding software (BALINT) free of charge that is also available for downloading from the Internet. It couldn't be easier.

### **Bus interface**

Various accessories can be connected and used simultaneously thanks to a bus interface system:



- Signal Lamp
- Barcode scanner
- Secondary display unit
- SmartBox® for application programmes with alphanumeric input
- Input/output box with 8 relays and 4 input contacts
- Additional interfaces
- Analogue data output



Options	321 LS
Protection IP65: protection against ingress of dust and low-pressure water jets, fitted at factory, not available for all types	350-8688
Protection IP65, including cable for RS232 interface with DB9 Female 1.5m (PC): protection against ingress of dust and low pressure water jets, fitted at factory, not all types available	350-8693
Set for EC / OIML verification, fitted at factory, not verified, available only for balances with EC ( / OIML) Type approval	350-8684
EC-Verification according to 90/384/ECC by Precisa (initial verification) available only for balances with EC ( / OIML) Type approval and SCS	350-8685
SCS: Self Calibration System with clock, automatic on temperature change and real-time programmable	available
ACW: Calibration Warning System, automatic warning for calibration on temperature change	standard
Clock	standard

BUS Accessories	321 LS
Remote / secondary display free-standing with cable 1.5 m	350-8504
Remote / secondary display mounted to the wall with cable 3 m	350-8516
Interface 20mA current loop passive	350-8526
Interface RS232 for data transmission: - to PC, Printer or Barcode-Printer - from Barcode Reader (350-8856) or Reference-Balance	350-8506
Analog output -10V... +10V (Resolution 10mV)	350-8508
Ethernet Interface, Wired	350-8573
Ethernet Interface, Wireless	350-8588
Signal Lamp, indicator with 3 lamps, green / red / yellow	350-8510
Horn for Signal Lamp	350-8533
Input / Output module with 6 TTL Inputs / 8 Relay Outputs	350-8509
CCE-Bar code scanner BCS5040 with push button and plug to be connected to the Interface RS232 350-8506 (Connector DB25)	350-8856

SmartBox® Applications	321 LS
SmartBox® Counting	350-8511-011
SmartBox® Finished Goods Packing Control, FPVO	350-8511-012
CCE-Bar code scanner BCS5040 with push button and plug to be connected to the SmartBox® (Connector RJ45)	350-8531

Accessories	321 LS
Draft shield 320 XB, height 180 mm needs adapter for 1mg, 0.01g, 0.1g and 1g balances*	350-8518
*Adapter for 1mg, 0.01g, 0.1g and 1g balances	350-7402
Draft shield mg, glass with cover	320-8504
Hook for weighing below the balance	350-8527
Density kit for 0.01mg and 0.1mg balances. Container size Ø= 75mm, h= 100mm	350-8636
Density kit solids only (w/o Glass body and Hook) for 0.01mg and 0.1mg balances. Container size Ø= 75mm, h= 100mm	350-8637
Glass body 10ccm for density determination of liquids	350-7054
Downholder for samples with density < 1 g/cm <sup>3</sup>	350-7194
Animal weighing bowl complete for 0.01g, 0.1g and 1g balances	350-8551
Dust cover for the whole balance, set of 20 pieces	350-8686
Cable for balance used as reference balance	350-8661
External USV accu power pack, for continuous operation	350-8662
Power supply / Adapter with Euro plug for balances with IP65 protection (80V - 240V)	350-8372

## Features and Applications



Swiss made



Support IQ/OQ/PQ



Interface RS232 for PC printer



% weighing



Net total application  
Add-up summation  
Dosage program



Vacuum Fluorescent Display



Anti theft protection - password and mechanical



Below balance weighing



Units g, mg, ozt, lb, tael, etc.



Animal Weighing



Fully automatic internal calibration system SCS (optional)



Clock (Printout GLP/GMP, Auto-Cal etc.)



Calibration Warning System



Counting program



Density determination



USB Device



Automatic Repeatability Test



## Precisa LS Series: Technical Specifications

### Analytical Balances 0.1 mg

Model	Capacity	Readability	Repeatability	Linearity	Pan Size (mm/inch)	Response time
LS 120A	120 g	0.1 mg	0.1 mg	0.2 mg	Ø 80 x 3.1	2 s
LS 220A	220 g	0.1 mg	0.1 mg	0.2 mg	Ø 80 x 3.1	2 s
LS 320A	320 g	0.1 mg	0.1 mg	0.2 mg	Ø 80 x 3.1	3 s

Dimensions (WxLxH) 228x381x345 mm  
Draft shield inside dimensions (WxLxH) 170x170x230 mm

Net weight 6.6 kg  
Sensitivity drift (10...30°C) 1.5 ppm / °C



### Precision Balances 1 mg

Model	Capacity	Readability	Repeatability	Linearity	Pan Size (mm)	Response time
LS 160M	160 g	1 mg	1 mg	1.5 mg	135 x 135	1.5 s
LS 320M	320 g	1 mg	1 mg	1.5 mg	135 x 135	1.5 s
LS 620M	620 g	1 mg	1 mg	1.5 mg	135 x 135	1.5 s
LS 920M	920 g	1 mg	1 mg	1.5 mg	135 x 135	2 s
LS 1220M	1220 g	1 mg	1 mg	2 mg	135 x 135	2 s

Dimensions (WxLxH) 228x381x124 mm  
Draft shield inside dimensions (WxLxH) 170x170x35 mm

Net weight 5.5 kg  
Sensitivity drift (10...30°C) 2.0 ppm / °C



### Precision Balances 0.01 g

Model	Capacity	Readability	Repeatability	Linearity	Pan Size (mm)	Response time
LS 320C	320 g	0.01 g	0.005 g	10mg	200 x 200	1.5 s
LS 620C	620 g	0.01 g	0.005 g	10mg	200 x 200	1.5 s
LS 1200C	1200 g	0.01 g	0.01 g	10mg	200 x 200	1.5 s
LS 2200C	2200 g	0.01 g	0.01 g	15mg	200 x 200	1.5 s
LS 3200C	3200 g	0.01 g	0.01 g	15mg	200 x 200	1.5 s
LS 4200C	4200 g	0.01 g	0.01 g	15mg	200 x 200	1.5 s
LS 6200C	6200 g	0.01 g	0.01 g	15mg	200 x 200	1.5 s

Dimensions (WxLxH) 228x381x90 mm  
No draft shield

Net weight 5.6 kg  
Sensitivity drift (10...30°C) 2.0 ppm / °C



### Precision Balances 0.1 - 1 g

Model	Capacity	Readability	Repeatability	Linearity	Pan Size (mm)	Response time
LS 3200D	3200 g	0.1 g	0.05 g	0.1 g	200 x 200	1 s
LS 6200D	6200 g	0.1 g	0.05 g	0.1g	200 x 200	1 s
LS 10200D	10200 g	0.1 g	0.1 g	0.15g	200 x 200	2 s
LS 10200G	10200 g	1 g	0.5 g	0.5 g	200 x 200	1.5 s

Dimensions (WxLxH) 228x381x90 mm  
No draft shield

Net weight 5.6 kg  
Sensitivity drift (10...30°C) 2.0 ppm / °C

### Common Specifications

Floating display	Temperature range	Line voltage	Stability settings	Power consumption	Frequency
adjustible	0 .. 40 °C	90V – 264V	adjustible	18 VA	47 – 63 Hz