

LSPlus Material Tester Comparison Sheet

Confidential information!

Confidential



Product: Lloyd Instruments LSPlus Series
Comparison: Old LS Series vs. New LSPlus Series

Key Applications & Customer Segments:

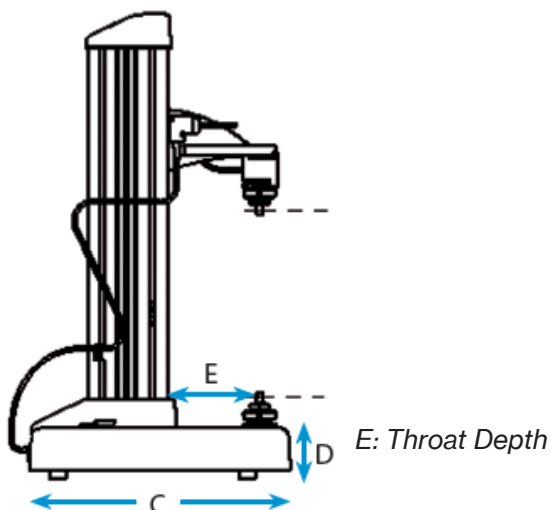
- Material Testing (medical Devices, packaging, plastics, componentsetc.)
- Research & Development Labs
- Quality Control Departments

LSPlus Series Vs LS Series

Feature	LS Series	New LSPlus Series	Impact on Applications & Customers
Speed Accuracy	0.2% (LS1 from 40mm/min, LS5 from 20mm/min)	0.1% (LS1 Plus from 0.1mm/min, LS5 Plus from 0.01mm/min)	Higher precision data for all applications. - Most materials are strain rate dependent meaning that test speed will affect the load readings. More accurate speed mean more accurate load readings.
Speed Range	0.01 to 1016 mm/min	0.001 to 2032 mm/min	Wider range of testing speeds allows for broader material characterization. – Slow speed for testing on engineered components. The high speed enables high return speed to allow greater testing throughput
Extension Resolution	0.15 microns	0.04 microns	Significantly improved measurement resolution for crosshead displacement. This allows the motion control electronics to control the speed with higher accuracy and smoothly across the whole range.
Load Resolution		Min. 1 part in 10 ⁹	Excellent load resolution allows calibration across a wider range of forces, reducing the need for multiple loadcells.
A/D Converter		New 32-bit with improved accuracy	Increases load resolution for calibration across a wider range of forces reducing the need for multiple loadcells
Strain Rate Control	Not supported	Supported	Enables testing under constant strain rate, a requirement for ISO plastic tensile tests. - Expands testing capabilities to meet industry standards. - Valuable for R&D and quality control in the plastics industry.
Control Interface	Nexygen Plus or main console (limited functionality)	Nexygen Plus or LS Plus tablet	Tablet interface with wide range of applications, tension, compression and cycling. Data output and reports. Enhances user experience and simplifies test setup for R&D and quality control labs.
Low Speed Performance	Limited	Significantly improved	New motion control system means LS1 can now be used for slow speed applications, no need to upgrade to LS5.
Cycling Performance		Improved cycling reaction and turnaround time	Faster response changes in direction or speed. More accurately follows the test procedure.
Load Holding		Improved	More precise and stable load control. - Ensures accurate data during static load tests. - Benefits R&D, quality control, and manufacturing by providing consistent test results.

Competitor Comparison

Feature	Lloyd LSPlus	Instron 3400 Series	Shimadzu Single Column Testers	ZwickRoell zwickiLine
Speed Accuracy	0.1% (above 0.1mm/min)	0.2%	0.10%	0,05%
Speed Range	0.01 to 2032mm/min (LS1+) 0.001 - 2032 mm/min (LS5+)	0.05 to 1016mm/min	0.01 to 1000mm/min	0.0005 to 2000mm/min
Return Speed	2032mm/min	1016mm/min	3000mm/min	2000 mm/min
Extension Resolution	0.04 microns	0.1 microns	0.1 microns	0.0554 microns
A/D Converter	32-bit	24-bit	24-bit	24-bit
Min. Load Resolution	1 part in 10 ⁹	1 part in 500,000	1 part in 500,000	Data not available
Strain Rate Control	Yes	Yes	Yes	Yes
Safety Door Control	Yes	Yes	Yes	Yes
Throat depth	180mm (LS1+) 150mm (LS5+)	100mm	100mm	100mm
POGO Option	unique pogo option	No pogo option	No pogo option	No pogo option
Interface	Software or tablet for production testing (no extensometers)	Software or full materials testing portrait tablet	Software	Software or full materials testing tablet
Software	NexygenPlus 4.18	Bluehill Universal	TRAPEZIUM X	testXpert III



Standout Features of LSPlus

- **High Speed Range:** LSPlus offers a broad speed range, making it versatile for a wide range of testing scenarios. The high return speed reduces time between tests.
- **High Extension Resolution:** Allows superior motion control
- **32-bit A/D Converter:** Provides superior data acquisition capabilities
- **Min. Load Resolution:** Allows calibration of loadcells across a wider range of forces which reduces the need for multiple loadcells.
- **Strain rate control:** allows compliance to the latest International Standards for tensile testing of plastics
- **Safety door interlock integration** between Nexygen Plus and machine hardware
- **Throat depth,** allowing users to test larger samples compared to our competitors. The user can confidently work with bulkier specimens, ensuring accurate and representative results.
- **POGO frame option** that allows users to work through the base of the machine. POGO test frames are unique to AMETEK STC. By fitting the POGO frame below the machine base it becomes possible to test very large samples. This design facilitates easier specimen handling, positioning, and removal during testing.



LD Tablet replaces the old LS main console

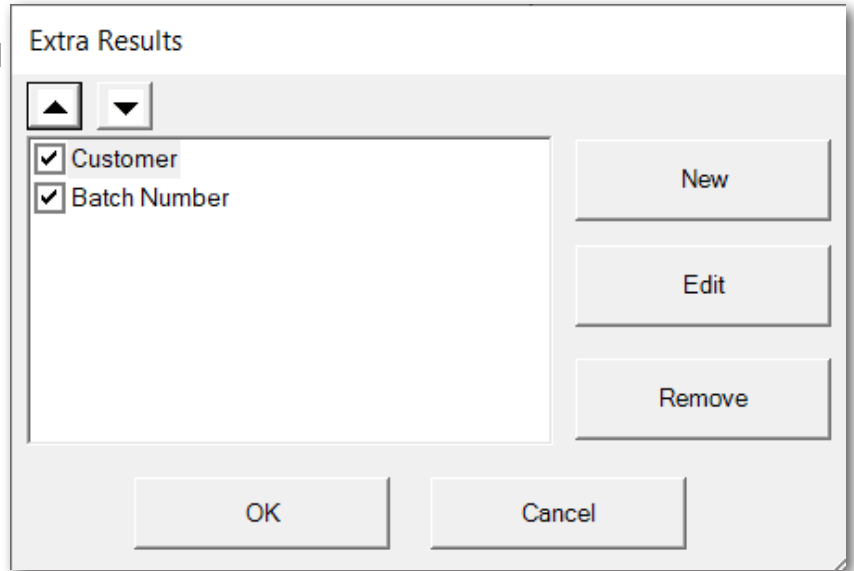


New LSPlus in new modern design

Material Testing Software, Nexygen 4.18

New standard Features

- New LS Plus/LD software console allows adjustment of speed ramping up and down. Motion control can now be fine tuned for each application.
- Pre-test questions can now be re-ordered
- Bar code scanners, when pre-test questions are displayed the focus is set to the first question. If using a bar code scanner you can now go ahead and scan right away.
- NexygenPlus reports add Word Tag operations to Header and Footer fields
- Load cell calibration date is now a standard result for LD/LS Plus
- Saving to a template (formerly standards library) creates a new clean batch with no rows, avoiding time consuming cleaning up of old data
- Pre and post test questions now have the option to



New Security Module features

- Audit Trail - Batch Creation Recorded in Audit Trail Log
- ASM - Review and Lock in 2 separate permissions
- Moving Markers and Authentication update, simplifies use case of moving markers post test but maintaining data integrity
- Add Print to PDF button option to Security Configurator 'Users' screen
- UI and Function Change to NexygenPlus Installer for ASM option
- Batch templates and locked batches now have a different file extension. Makes it very easy to review and sort batches, templates and reviewed batches in Windows explorer
- New optional detailed software IQ/OQ

Audit Record

User ID:

Date/Time:

Time Zone:

File:

Reason:

Description:

NexygenPlus Audit Trail Report	
Generated By:	Lloyd 1
Date/Time:	22/09/2023 10:19:19
Search Criteria	
From	18/09/2023 10:08:01
To	22/09/2023 10:08:01
User Name	-
PC	-
Category	-
Reason	-
File	-
Description	-
Max Rows	100
Audit Log Records	
ID	175
Full Name	Lloyd 1
Logged	22/09/2023 10:18:36
Time Zone	GMT Daylight Time
Description	Archiving batch tests from 22/09/2023 08:42:27 to 22/09/2023 08:42:27. Number of tests = 1. Archive file: 'C:\ProgramData\Lloyd Instruments Ltd\NexygenPlus\Shared\Data\Largo2_22092023 084227_22092023 084227.batch'.
Workstation	DESKTOP-KVT1T5I
Reason	-
File Path	C:\ProgramData\Lloyd Instruments Ltd\NexygenPlus\Shared\Data\Largo2.batch
Category	Batch File
UTC Logged	22/09/2023 09:18:36

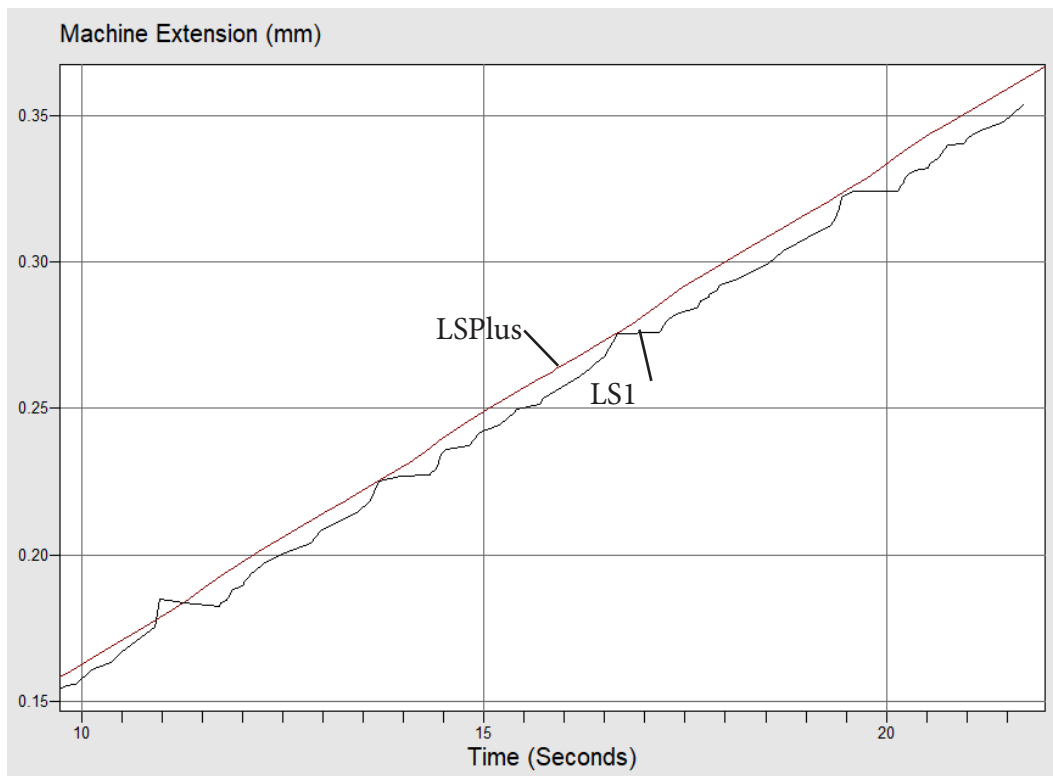
Material Testing Software, Nexygen 4.18

NexygenPlus 4.18 Software Advantages

- **Workflow Builder:** Customizable testing workflows cater to specific testing protocols and user needs.
- **Data Integrity:** SQL database ensures secure and traceable data management, essential for regulatory compliance.
- **Real-Time Graphing:** Immediate visualization of test results aids in prompt analysis and decision-making.
- **Test Automation:** Increases efficiency and consistency in testing processes.
- **SPC Functionality:** Facilitates process control and quality monitoring, reducing variability and ensuring product quality.

Conclusion

The Lloyd LSPlus series, with its significant improvements in speed accuracy, extension resolution, and load control, coupled with the robust NexygenPlus 4.18 software, offers a compelling package for a range of material testing needs. The enhancements make it a standout choice over competitors like Instron, Shimadzu, and ZwickRoell, particularly in applications requiring high precision, compliance with ISO standards, and comprehensive data management capabilities.



LS1 Plus Slow Speed

LSPlus Material Tester: Go-to-Market Strategy

Key Selling Points

- **Advanced Features:** Highlight the LSPlus series' high-speed range, high extension resolution, 32-bit A/D converter, and strain rate control. These features provide superior testing capabilities compared to older LS models and competitors.
- **Nexygen Software:** Emphasize the benefits of the Nexygen 4.18 software, including customizable workflows, real-time graphing, and secure data management. The software enhances efficiency and productivity.

Target Market Segments:

- **Material Testing Labs:** LSPlus is ideal for testing medical devices, packaging materials, plastics, and components. Position it as a reliable solution for accurate material characterization.
- **R&D Departments:** Researchers and engineers can leverage LSPlus for product development, quality assurance, and innovation. Highlight its versatility and precision.

Customer Types:

- **New Customers:** Approach potential customers in the identified market segments. Showcase LSPlus advantages through demos, webinars, and marketing collateral.
- **Existing LS Machine Owners:** Engage current LS machine users by emphasizing the LSPlus series' upgrades. Offer trade-in programs or discounts for upgrading to LSPlus. (Contact us for options on this)

Competitor Landscape:

- Emphasize LSPlus' higher speed range, resolution, and software capabilities. Highlight LSPlus' advanced throat depth and pogo option. Position the LSPlus as a smart investment that balances cost-effectiveness with cutting-edge capabilities.



*POGO test frames are
unique to AMETEK STC*

LLOYD **STC**[™]
materials testing
AMETEK