

Legato Integration System Specifications

Legato Integration System integrates Lighthouse piezo dispense technology seamlessly with automated systems – maximizing performance and reliability. Legato includes all tools for precision dispensing except for the drive system & environmental conditions.

Legato Integration System consists of the following:

Item	Description
METRONOME 8-CHANNEL PULSE GENERATOR	1 - 8 channel pulse generator providing various pulse shapes from -150 to +150 volts including an API
DLL SOFTWARE CONTROLS	Powerful, flexible control and seamless system integration
SYRINGE PUMPS	1 - 8 syringe pumps inc. 3 port advanced ceramics valves for handling reagent in fluid lines
INTEGRATED WASH VACUUM STATION	Efficient Staccato or Symphony rinsing & cleaning. Peristaltic wash pump
HORIZONTAL QC CAMERA	Dispense control station with a stroboscopic light & CCD camera for documenting droplet volume, speed, and trajectory
STACC PAK	1 to 8 channel Stacc Pak
STACCATO PIEZO DISPENSE CAPILLARY	1 to 8 Staccato with or without coating
RACK	19-inch rack containing Pipetting Unit and dispensing electronics



Legato Integration System makes high-precision, non-contact dispensing technology easy to integrate into automated instruments. Designed for system integrators and instrument manufacturers, Legato simplifies software development through straightforward serial communication via USB or RS-232.

Built-in operating modes support both internal and external trigger control for droplet dispensing, providing fast, reliable integration while delivering exceptional dispensing performance, flexibility, and ease of use.

Specifications

Lighthouse's Legato Integration System series operates with the following characteristics

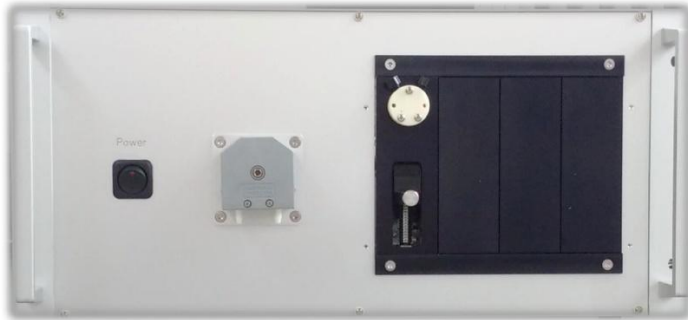
Parameter	Specification
Mode	Piezo dispensing, non-contact
Supported Capillary orifice	50 - 100 μm
Supported Spot frequency	1 - 1500 Hz
Typical drop size	50 - 500 picolitres
Average CV of drop volumes	<2%, typically < 0.5 %
Capillary materials	silica glass, TEFLON® tube, PEEK
Viscosity of spot-able media	0.4 - 5 (mPa.s)
Size	19-inch rack
Firmware	LabVIEW based
Power Supply	24 VDC, 8 Amp
Communication	Serial data communication Note: when using USB it is essential to install a VCP (virtual COM-port) driver.

Legato Integration System is equipped with up to eight channels. Each channel can generate rectangular high voltage pulses independent of the other channels. The three pulse parameters - pulse width, frequency (or distance) and voltage - can be adjusted within a fixed parameter range. Drop release can be activated by software command or by an external trigger signal. The trigger signal must be externally provided as a TTL signal.



The syringe pump communication is configured for serial data communication via RS232 comport. The wash pump is connected with a switchable 24 VDC (5W). The flow rate can be adjusted by voltage adjustment.

Front View (4 Channel)



Rear view (4 Channel)





Part number, description and pricing

Quantity	Part Number	Description	Unit Price
1	LIM001	Legato Integration Module Lighthouse's piezo-dispense module for integration into third party robotics systems. Includes: - 8 Pin connector board with holder - Standalone piezo dispensing driver electronics - Liquid handling unit (additional channels €10K ea.) - Dispense control station (with camera) - 19 inch housing	€74.130
1	LIM-DH01	DISPENSE HEAD The dispense head can hold up to eight STACCATO's dispense capillaries with 4.5 mm spacing between the capillaries.	€2.000
1	ST-SN03	Setup STACCATO (3 pcs) To teach positions and test runs. No dispensing function	€250
1	ST-TBD	STACCATO Piezo Dispense Capillary Drop volume between 150-600 pl depending on the Staccato size	€795
1	ST-TBD	STACCATO with either Alto or Bass Coating	€995 – €1.195

Available Staccato Piezo Dispense Capillaries and Coatings

Size	Drop Volume
Staccato 50P	150 – 220 pL
Staccato 60P	220 – 300 pL
Staccato 70P	300 – 360 pL
Staccato 80P	360 – 440 pL
Staccato 90P	440 – 520 pL
Staccato 100P	520 – 600 pL

Staccato Coatings

Staccato Dispense Capillaries deliver stable printing for many reagents. The exceptionally high manufacturing tolerances give consistent drop ejection and minimize salt deposits. However, some printing applications, such as proteins, oleic solutions, and organic solvents benefit from coating the silica capillary.

We offer a range of coatings providing hydrophobic surfaces



Our coatings reduce reagent absorption in the capillary channel promoting smooth dispensing. The coatings are covalently bonded providing an ultra-thin layer that is biocompatible and biostable.

We have two standard coatings: Alto and Bass



These give moderate and high hydrophobicity, respectively. Lighthouse Diagnostics applications team is available to assist you in making the best choice for coatings. Further, we can tailor the choice and adhesion method of coatings to suit your specific reagent application.