

# **LIGHTNIN<sup>®</sup> Mixers For Small Scale Applications**

**Wide selection.  
Precise control.**



**YOU AND LIGHTNIN.  
THE RIGHT MIX.**



**LIGHTNIN**

# LIGHTNIN LabMaster SI

LabMaster SI mixers provide precise programmable control of mixing speed and process power in a lab-size unit. Monitor process temperature and impeller pumping capacity, and control the mixer with the programmable timer.

Analyze how varying these parameters influences results. It's easy to repeat procedures with accuracy. As a process develops, document all the mixing parameters to facilitate scale-up.

One or more LabMaster SI mixers can be linked to a single PC for control and monitoring. You get all the programmable convenience and precision your scientific work requires.

## Liquid Crystal Display (LCD)

No guessing on adjusting speed. Program and monitor the speed in rpm and the power in watts, something no other lab mixer does. Time is also displayed, counting up or down. Monitor process temperature with the probe included with full-feature models.

## Unit Monitors Flow

Input the type of impeller and the LabMaster SI displays the theoretical pumping rate in gallons or liters per minute. The unit is calibrated to handle six standard *LIGHTNIN* impeller types, some optional with particular models. Input the flow number of any custom impeller and monitor its flow rate.

## Large Keypad

Large, easy-to-use buttons. LED indicates when unit is on. Select English or metric units. Audible and tactile response ensures accurate data input, and the sealed keypad is easy to keep clean.



## Power Module

Use 50/60 Hz, with built-in choice of 100-120 volt or 210-240 volt. All units are shipped with a 110 volt USA-style cord. Other power cords are universally available. Automatic speed level control protects against minor overloads. Power module is fused to protect against severe overloads.

## Jacobs™ Chuck Design

A variety of shaft diameters is positively gripped with the Jacobs chuck design. Thru-shaft models to adjust shaft and impeller.

## Three Torque Ranges

The 1/10 hp (75 watt) gear-drive model covers a range of 15-500 rpm, providing the highest torque of any LabMaster model. And the 1/10 hp (75 watt) direct-drive

model offers a range of 50-1800 rpm. The 1/30 hp (25 watt) direct drive model offers a speed range of 50-1800 rpm.

## International Certification

LabMaster mixers are UL listed, CSA certified and carry the CE mark for the European Community and the T mark for Japan. In addition, LabMaster mixers are ETL listed and certified for Australia, Canada, China, England, France, Germany, Holland, Japan, Korea, Malaysia, New Zealand, Singapore, Taiwan and Thailand.

## Universal Clamp

Two separate adjustments with index marks swivel in two planes, so placement of the mixer is easy and accurate whether to ring stand, tank rim or lattice framework.



## Mixer Connect for Windows

This custom software package from LIGHTNIN lets you connect up to 98 LabMaster SI Mixers.

Mixer Connect monitors and controls the speed of up to five mixers individually, including acceleration and deceleration rates and collect data.

Record power draw in watts against time as viscosity changes, record temperature with the probe included with your LabMaster SI, and monitor the 0-5 volt analog port which you can connect to a pH probe or weight scale or other peripheral equipment.

Model	Power kW, Watts, HP	Thru Shaft	RS422/R485 Port	Temp Probe	Analog	Output RPM	Max Torque (in.-Oz)	Shaft Dia (In.)	Chuck Capacity (In.)	Catalog Number
L1U08F	.08, 75, 1/10	STD	STD	STD	STD	50-1800	56	3/8	1/2	834823
L1U08	.08, 75, 1/10	STD	N/A	N/A	N/A	50-1800	56	3/8	1/2	834822
L5U08F	.08, 75, 1/10	N/A	STD	STD	STD	15-500	180	3/8	1/2	834821
L5U08	.08, 75, 1/10	N/A	N/A	N/A	N/A	15-500	180	3/8	1/2	834820
L1U03	.03, 25, 1/30	N/A	N/A	N/A	N/A	50-1800	18	5/16	3/8	834824

## Choice Of Impellers

LabMaster SI mixers come equipped with standard impellers shown. Other impellers are available.			
1/30 hp direct drive	2.5" A310		
1/10 hp thru shaft direct drive	3.4" A310	2.7" A100	2.0" R100
1/30 hp gear drive	3.1" A310	2.0" A100	5.0" A320
Available as optional impellers	4" A310	4" A200	2.0" R100
Instruction manual explains how to enter flow number for any impeller			



Peripheral equipment for analog port is not included with the LabMaster SI Mixer, nor with the Mixer-Connect Software Kit.

Software requires IBM 386 or better, 4mb RAM, 1mb hard disk space, Windows 3.0 or later, RS422/485 serial card or adapter.



# LIGHTNIN BioMixer

BioMixers feature an easily detachable drive assembly made with a chemically resistant housing. Variable speed control allows operation from 20-250 RPM.

BioMixer allows precise, repeatable mixing. All parameters are displayed, including timer, speed, pumping capacity (in liters per second) and process watts.

BioMixer features include:

- Textured handgrip area.
- High-torque planetary gear drive.
- Self-indexing chuck for easy alignment of the mixer on the lower assembly.
- Dual V rings of FDA approved material.
- Double bearing pedestal ensures smooth shaft operation.
- Optional RS422 and analog input ports for feeding data directly into your lab computer.
- Optional temperature probe also available.
- Optional non-cytotoxic, FDA food grade materials.

B7S08 features include:

- Threaded shaft connection
- External single dry running seal
- 3" Tri-Clover® mounting



## Drive Assembly

Model	Motor hp	RS422/485 Port	Temp Probe	Analog Port	Output RPM	Catalog Number
B7G03	1/30	NA	NA	NA	20-250	834825
B7G08	1/10	NA	NA	NA	20-140	834826
B4G08F	1/10	STD	STD	STD	20-250	835220
B4G08F	1/10	STD	STD	STD	20-140	835219

## Lower Assembly

Model	Tri-Clover Mounting	Shaft	Impeller Type	Diam.	Catalog Number
B7S08	3 in.	1/2 x 23	A310	6.3 in.	
B7W50	2 in.	1/2 x 19	A410	155 mm	834865
B7W75	2 in.	1/2 x 23	A310	6.3 in.	871041
B7W115	2 in.	1/2 x 30	A310	6.8 in.	871038
B7W200	2 in.	1/2 x 32	A410	225 mm	834866
B7W210	2 in.	1/2 x 32	A310	8.8 in.	871037
B7W380	2 in.	1/2 x 38	A310	10 in.	871039

# General Purpose Stirrer Series

The open-tank models are suitable for use in enclosed environments such as vapor hoods, with variable speed control positioned conveniently on the outside.

- Fixed- or remote variable-speed control
- Direct drive 50 or 25 watts (1/15 or 1/30 hp)
- Quick-disconnect hand chuck
- Thru-shaft design for infinitely variable turbine position
- Fuse protection
- Universal clamp or rod mounting
- High-efficiency A310 impeller
- On/off indicating light
- Max. 1600, 1800 or 2300 rpm
- Also available with air motor

## Closed tanks models

Closed tank Lab Stirrers prevent vapor loss—excellent for sanitary applications

- 3" Tri-Clover standard with optional 4" Tri-Clover and 2" ANSI flange.
- Viton® V-ring seals for atmospheric pressure, but can handle up to 5 psig. Optional mechanical seal for pressures to 25 psig.
- Adjustable shaft
- Separate variable speed controller offers speeds up to 2300 RPM
- Air motor also available
- A310 impeller is standard



Model	Power kW, Watts, hp	Motor Type	Output RPM	Mounting	Options	Catalog Number
G1Y03	.03, 25, 1/30	Electric	1800	Rod Mount		809408
G1U03		"	"	Uni. Clamp		830162
G2Y05R	.05, 50, 1/15	Electric	90-1600	Rod Mount		832039
G2U05R	"	"	90-1600	Uni. Clamp		832042
G3Y05R	"	"	180-2300	Rod Mount		869000
G3U05R	"	"	180-2300	Uni. Clamp		869001
G2Q05R	"	"	90-1600	Tri-Clover		869434
G2L05R	"	"	90-1600	Tri-Clover	V-Ring Seal	869362
G2S05R	"	"	90-1600	Tri-Clover	Mechanical Seal	869435
G3Q05R	"	"	180-2300	Tri-Clover		869436
G3L05R	"	"	180-2300	Tri-Clover	V-Ring Seal	869437
G3S05R	"	"	180-2300	Tri-Clover	Mechanical Seal	869438
G1Y05A	.05, 50, 1/15	Air	30-1800	Rod Mount		869439
G1U05A	"	"	"	Uni. Clamp		869440
G1Q05A	"	"	"	Tri-Clover		869441
G1L05A	"	"	"	Tri-Clover	V-Ring Seal	869442
G1S05A	"	"	"	Tri-Clover	Mechanical Seal	869443

# Small Scale Batch Mixers

## Model S1U03A Air Drive

Our most rugged performer is your most economical choice in a variable speed stirrer/mixer. Even a stalling load can't hurt the motor. All you need is compressed air at 30 to 90 psi and 2 cfm maximum. For volumes to 100 liters of low-viscosity fluids, lesser amounts at higher viscosities.

### Standard equipment:

316 stainless steel shaft and A310 impeller. Also with stainless steel chuck and tube. Comes with a muffler for quiet operation, needle valve for precise speed control and universal mounting clamp. Weighs 5 pounds.

## Explosion-proof Motor Model S1U04X Mixer

For up to 200 liters of low-viscosity fluids and lesser amounts of high-viscosity materials. The 40-watt (1/20 hp) motor delivers a constant 1750 rpm (60 Hz service). UL listed for Class I, Group D and Class II, Groups E, F and G.

### Standard Equipment:

Shaft and A310 impeller, both of 316 stainless. Chuck and tube also stainless steel. Furnished with bronze rim clamp, unless ring stand clamp is specified. Weighs 21 pounds.



Model S1U03A



Model S1U10 and Model S1U05T



Model S1U04X

Model	Power (kW, Watts, HP)	Motor Type	Output RPM	Mounting	Catalog Number
S1U03A	.03, 25, 1/30	Air	30-1750	Uni. Clamp	809020
S1U04X	.04, 40, 1/20	Explosion-proof Electric	1750	Uni. Clamp	800013
S1U05T	.05, 50, 1/15	Two-speed Electric	1200/1600	Uni. Clamp	800000
S1U10	1.0, 95, 1/8	Electric	1750	Uni. Clamp	800129

## Model S1U05T Two-speed Mixer

The two-speed switch lets you match power and speed to batch volume and viscosity. For lab or production use. The 50 watt (1/15 hp) motor for 115 volts, 50/60 Hz is completely enclosed, non-ventilated for years of non-stop service.

### Standard equipment

Shaft and A310 impeller, both of 316 stainless steel. Chuck and tube also stainless steel. Comes with bronze rim clamp, unless our ring stand clamp is specified. Shaft length 24 inches. Weighs 18 pounds.

## Model S1U10 Single-speed Mixer

Mix up to 100 gallons of water-like fluids. The 95 watt (1/8 hp) chemical plant motor delivers a constant 1750 rpm. Completely enclosed for 115 volt, 60 Hz single-phase service. Specially treated for use in high-humidity atmospheres. Housing is coated with corrosion-resistant styrenated alkyd enamel. High-capacity ball bearings are sealed and lubricated for life to provide maintenance-free service under normal conditions.

### Standard equipment:

316 stainless steel shaft and single or dual A310 impellers. Chuck and tube also stainless steel.

## Options

### 316 Stainless Steel Shafts

Available in 5/16" through 3/8" diameter with lengths ranging from 12" to 36."

### Heavy Duty Ring Stand

24" high, 5/8" rod; cast iron, 14 lb. cast iron base.

### Ring Stand Clamp

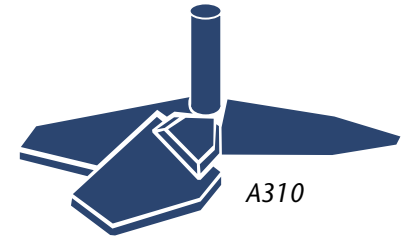
Heavy duty, recommended for all models with tube suspension mounting.

### Pilot Plant Kit

The perfect accessory kit for all pilot plants. It includes:

- LIGHTNIN pilot plant manual
- 2 extra shafts
- A310 impellers (2 sizes)
- R100 impeller
- R500 impeller
- A200 impeller
- A100 impeller
- Beads for visual mixing/flow indication
- "Fluid Mixing Technology" textbook by Dr. James Oldshue

## Impellers



The A310 impeller is standard on LabMaster mixers. The high efficiency design develops 50% more mixing action than ordinary props.

The traditional A100 propeller provides moderate pumping action.

The A315 impeller is an excellent choice for gas dispersion with solids suspension.



The A320 impeller is efficient at blending high viscosity materials.

The R100 impeller provides high shear and moderate pumping action.

The R500 impeller provides low flow with the highest shear. Excellent for solids or liquid dispersion.

The A200 impeller has a 45° pitch and provides a semi-axial flow.

The A100 propeller with ring guard protects dip tubes or sensors in the mixing vessel.

Paddle turbine is good for dispersions.

The A100 folding propeller is perfect for mixing in vessels with small, narrow ports. It opens for full axial mixing action.

For more information on impellers, please contact your local representative and ask for brochure B-647.