

# PRECISION TEMPERATURE SOLUTIONS



**YOU WILL LIKE IT!**



Labo uses 39 years of experience and know-how to provide heating and cooling services and to produce very precise working circulators, water baths and custom design temperature solutions.

Labo's foundations were established by Numan Teknik (mother company), which was established with all domestic capital in 1981. Numan Teknik has become a solution partner in the heating-cooling systems for lots of corporate companies. Since the day it was established, it continuously follows the developing technology in the sector and constantly renews itself in the face of developing the technology. As a result, Labo comes in existence as a service provider to the laboratory sector on production and R&D.

Labo; with high-quality engineering and design strength has executed and successfully completed a wide range of installation, design and mass production projects since its establishment to many domestic and foreign customers.

Labo responds to the needs of consumers on time and completes manner and is always aware that customer satisfaction is at the forefront. The indispensable principle: "Customers deserve properly flawless service both before and after the project."

Labo's precision temperature products, which are manufactured according to European Quality Standards, can be used in many industries such as universities, institutes, chemistry, food, beverage, automotive, calibration, aviation, defense, health, textile, metallurgy and etc.

Labo has ISO 9001:2015 quality certificate and works to maintain the quality with Tüv Rheinland.

We are rising up with our motto day by day in the world:

"YOU WILL LIKE IT"



## Bridgeable Device Types



Abbe Refractometers



Viscometers



Custom Analysis Devices



Temperature Coil Applications



Reactors



Rotary Evaporators



Falling Ball Viscometer



Soxhlet Extraction



Stable Temperature Jackets



Tensiometers



Ultrasonic Baths

## Some Activities and Tests

- Quality Control Activities
- R&D Activities
- Calibration Activities
- Viscosity Tests
- Closed-Loop Systems
- Distillation Systems
- Exothermic Reaction Cooling
- Biological Researches
- Chemical Reaction Researches
- Polymer Researches
- Food Quality Control Activities
- Petroleum Tests
- Water Resistance Tests
- Temperature Resistance Tests
- General Laboratory Cooler
- Temperature-Corrosion Tests
- Crystallization Researches
- Bacteriological Researches
- Charpy Impact Testing
- Pilot Production Systems
- Blood and Serum Thawing Baths
- Metallurgical Analysis
- Cloud and Pour Point Tests

## Contents

Applications	4
→ Products	
→ Refrigerated and Heating Circulators	
B Series	6
C Series	8
P Series	10
S Series	12
H Series	14
Water Baths (non-circulated)	16
Special Purpose Devices	18
Accessories	28
Special Design Request	34
Warranty	35
References	36

## B SERIES

### REFRIGERATED and HEATING CIRCULATORS

The most important feature of the Labo B (Big) series circulators is that they have a very large internal usage area. It is especially preferred by users who work placing their samples in the bath.

The Labo B series circulators have cooling and heating features. When the cooling feature is turned off by a switch, the circulators can be used as a heating circulator. Thus, energy conservation is provided. The Labo B (Big) series circulators offer bath capacity alternatives between 20 and 54 liters and work with environmentally friendly refrigerants (NON CFC) that do not damage the ozone layer.

**Advise: You can check the Accessories page for Height Adjustable Rack which is the most preferred by users of B series circulators.**



# B SERIES

## REFRIGERATED and HEATING CIRCULATORS

COMMON FEATURES	
Display Type	Digital
Temperature Control System	New Generation PID
Display Resolution	0,1 °C
Over Temp. Alert System	Existing
Material	Stainless Steel
Easy Liquid Drain System	Existing
Low Liquid Level Alert System	Existing for product codes end with number 2 (XXX-X2)
Power Requirement	220-240 V / 50-60 Hz
RS485 Communication Interface	Optional



### B (BIG) SERIES - REFRIGERATED and HEATING CIRCULATORS

Product Code	Temp. Range (°C)	Bath Capacity (lt)	Bath Opening/ Depth(mm)	Temperature Stability (°C)	Heating Capacity (kW)	Cooling Capacity (at 20°C/kW)	Circulation Type	Pump Capacity (lt/min)	Dimensions (mm)	Weight (kg)
B100-D23	-10 / 100	20	260x360/160	±0,03	2	0,31	Internal	16	340x570x610	39
B100-H23	-10 / 100	20	260x360/160	±0,03	2	0,31	Internal + External	16	340x570x610	39
B100-H22	-10 / 100	20	260x360/160	±0,02	2	0,31	Internal + External	16	340x570x610	39
B100-D22	-10 / 100	20	260x360/160	±0,02	2	0,46	Internal	16	340x570x610	39
B105-D22	-10 / 200	20	260x360/160	±0,05	2	0,42	Internal	16	340x570x610	39
B250-D23	-25 / 100	20	260x360/160	±0,03	2	0,42	Internal	16	340x570x610	40
B250-H22	-25 / 100	20	260x360/160	±0,02	2	0,52	Internal + External	16	340x570x610	40
B250-H23	-25 / 100	20	260x360/160	±0,03	2	0,42	Internal + External	16	340x570x610	40
B405-D22	-40 / 100	40	350x420/200	±0,05	2	0,50	Internal	16	495x690x902	60
BX100-D22	-10 / 100	54	350x420/270	±0,05	2	0,43	Internal	16	495x690x902	60
BX100-H22	-10 / 100	54	350x420/270	±0,05	2	0,43	Internal + External	16	495x690x902	60
BX200-D22	-20 / 100	54	350x420/270	±0,05	2	0,48	Internal	16	490x650x902	62
BX350-D22	-35 / 100	54	350x420/270	±0,05	2	0,51	Internal	16	490x650x902	65
BX400-D22	-40 / 100	54	350x420/270	±0,05	2	0,53	Internal	16	495x690x902	67
BX405-D22	-40 / 100	40	350x420/200	±0,05	2	0,50	Internal	16	490x650x902	61

## C SERIES

### REFRIGERATED and HEATING CIRCULATORS

C (Compact) series circulators are used for precise temperature studies with cooling and heating features. The C series models are preferred for R&D and quality control processes because of their practical structure.

Labo C series circulators have a digital PID temperature control system and can be easily viewed even from a long distance with its large size Led LCD screen. Internal liquid circulation feature is standard for all models. If external liquid circulation is requested, please inform to your sales representative to advice models which have external liquid circulation feature.

All Labo refrigerated circulators work with environmentally friendly refrigerants (NON CFC) that do not damage the ozone layer.





# C SERIES

## REFRIGERATED and HEATING CIRCULATORS

COMMON FEATURES	
Display Type	Digital
Display Resolution	0,1 °C
Temperature Control System	New Generation PID
Over Temp. Alert System	Existing
Material	Stainless Steel
Easy Liquid Drain System	Existing
Power Requirement	220-240 V / 50-60 Hz
RS485 Communication Interface	Optional



### C (COMPACT) SERIES - REFRIGERATED and HEATING CIRCULATORS

Product Code	Temp. Range (°C)	Bath Capacity (lt)	Bath Opening/ Depth(mm)	Temperature Stability (°C)	Heating Capacity (kW)	Cooling Capacity (at 20°C/kW)	Circulation Type	Pump Capacity (lt/min)	Dimensions (mm)	Weight (kg)
C200-H13	-20 / 100	7	140x145/155	±0,03	1,1	0,25	Internal + External	16	292X423X620	27
C200-H23	-20 / 100	7	140x145/155	±0,03	2	0,25	Internal + External	16	292X423X620	27
C300-D13	-30 / 100	8	140x145/160	±0,03	1,1	0,30	Internal	16	320x475x630	30
C300-H13	-30 / 100	8	140x145/160	±0,03	1,1	0,30	Internal + External	16	320x475x630	30
C300-H23	-30 / 100	8	140x145/160	±0,03	2	0,30	Internal + External	16	320x475x630	30
C400-D13	-40 / 100	8	140x145/160	±0,03	1,1	0,47	Internal	16	320x380x650	39
C400-H13	-40 / 100	8	140x145/160	±0,03	1,1	0,47	Internal + External	16	320x380x650	39
C400-H23	-40 / 100	8	140x145/160	±0,03	2	0,47	Internal + External	16	320x380x650	39
C600-H23	-60 / 100	8	140x145/160	±0,05	2	0,38	Internal + External	16	495x690x892	87
C600-D23	-60 / 100	8	140x145/160	±0,05	2	0,38	Internal	16	495x690x892	87
C800-H22	-80 / 100	8	140x145/160	±0,02	2	0,53	Internal + External	16	495x690x902	92
C800-H23	-80 / 100	8	140x145/160	±0,05	2	0,53	Internal + External	16	495x690x892	92
C800-D23	-80 / 100	8	140x145/160	±0,05	2	0,53	Internal	16	495x690x892	92

## P SERIES

### REFRIGERATED and HEATING CIRCULATORS

P (Professional) series circulators are advanced models with liquid level warning system and better temperature stability. The P Series circulators have cooling and heating features and are suitable for general purpose production, R&D and quality control processes. When the cooling feature is turned off by a switch, the circulators can be used as a heating circulator.

All audio and visual warning systems are integrated into one digital control panel. Internal liquid circulation feature is standard for all models. Internal liquid circulation feature is standard for all models. If external liquid circulation is requested, please inform to your sales representative to advice models which have external liquid circulation feature.

All Labo refrigerated circulators work with environmentally friendly refrigerants (NON CFC) that do not damage the ozone layer.



# P SERIES

## REFRIGERATED and HEATING CIRCULATORS

COMMON FEATURES	
Display Type	Digital
Display Resolution	0,1°C
Temperature Control System	New Generation PID
Over Temp. Alert System	Existing
Material	Stainless Steel
Easy Liquid Drain System	Existing
Low Liquid Level Alert System	Existing
Power Requirement	220-240 V / 50-60 Hz
RS485 Communication Interface	Optional



### P (PROFESSIONAL) SERIES - REFRIGERATED and HEATING CIRCULATORS

Product Code	Temp. Range (°C)	Bath Capacity (lt)	Bath Opening/ Depth(mm)	Temperature Stability (°C)	Heating Capacity (kW)	Cooling Capacity (at 20°C/kW)	Circulation Type	Pump Capacity (lt/min)	Dimensions (mm)	Weight (kg)
P200-D22	-20 / 100	9	130x170/160	±0,02	2	0,27	Internal	16	320x475x640	29
P200-H22	-20 / 100	9	130x170/160	±0,02	2	0,27	Internal + External	16	320x475x640	29
PL200-D22	-20 / 150	9	130x170/160	±0,02	2	0,27	Internal	16	320x475x640	29
PL200-H22	-20 / 150	9	130x170/160	±0,02	2	0,27	Internal + External	16	320x475x640	29
PH200-D22	-20 / 200	9	130x170/160	±0,02	2	0,27	Internal	16	320x475x640	29
PH200-H22	-20 / 200	9	130x170/160	±0,02	2	0,27	Internal + External	16	320x475x640	29
P300-D22	-30 / 100	9	130x170/160	±0,02	2	0,32	Internal	16	320x475x640	33
P300-H23	-30 / 100	9	130x170/160	±0,05	2	0,32	Internal + External	16	320X475X630	33
P300-H22	-30 / 100	9	130x170/160	±0,02	2	0,32	Internal + External	16	320x475x640	33
PL300-D22	-30 / 150	9	130x170/160	±0,02	2	0,32	Internal	16	320x475x640	33
PL300-H22	-30 / 150	9	130x170/160	±0,02	2	0,32	Internal + External	16	320x475x640	33
PH300-D22	-30 / 200	9	130x170/160	±0,02	2	0,32	Internal	16	320x475x640	33
PH300-H22	-30 / 200	9	130x170/160	±0,02	2	0,32	Internal + External	16	320x475x640	33
P400-D22	-40 / 100	9	130x170/160	±0,02	2	0,49	Internal	16	320x475x670	37
P400-H22	-40 / 100	9	130x170/160	±0,02	2	0,49	Internal + External	16	320x475x670	37
PL400-D22	-40 / 150	9	130x170/160	±0,02	2	0,49	Internal	16	320x475x670	37
PL400-H22	-40 / 150	9	130x170/160	±0,02	2	0,49	Internal + External	16	320x475x670	37
PH400-D22	-40 / 200	9	130x170/160	±0,02	2	0,49	Internal	16	320x475x670	37
PH400-H22	-40 / 200	9	130x170/160	±0,02	2	0,49	Internal + External	16	320x475x670	37
P600-H22	-60 / 100	9	140x145/160	±0,02	2	0,65	Internal + External	16	495x690x902	87
PL600-H22	-60 / 150	9	140x145/160	±0,02	2	0,65	Internal + External	16	495x690x902	87
PH600-H22	-60 / 200	9	140x145/160	±0,02	2	0,65	Internal + External	16	495x690x902	87

# S SERIES

## REFRIGERATED and HEATING CIRCULATORS

The most conspicuous feature of the S (Short) series circulators is the external dimensions. These models are, contrary to conventional thin-long bath structure, have wide-short appearance. Because of its different structure, users who plan to do different works in the bath, prefer S series circulators.

Internal liquid circulation feature is standard for all models. If external liquid circulation is requested, please inform to your sales representative to advice models which have external liquid circulation feature.

All Labo refrigerated circulators work with environmentally friendly refrigerants (NON CFC) that do not damage the ozone layer.



# S SERIES

## REFRIGERATED and HEATING CIRCULATORS

COMMON FEATURES	
Display Type	Digital
Display Resolution	0,1°C
Temperature Control System	New Generation PID
Over Temp. Alert System	Existing
Material	Stainless Steel
Easy Liquid Drain System	Existing
Power Requirement	220-240 V / 50-60 Hz
RS485 Communication Interface	Optional



### S (SHORT) SERIES - REFRIGERATED and HEATING CIRCULATORS

Product Code	Temp. Range (°C)	Bath Capacity (lt)	Bath Opening/ Depth(mm)	Temperature Stability (°C)	Heating Capacity (kW)	Cooling Capacity (at 20°C/kW)	Circulation Type	Pump Capacity (lt/min)	Dimensions (mm)	Weight (kg)
S200-D13	-20 / 100	7	140x145/155	±0,03	1,1	0,25	Internal	16	430X400X410	25
S200-H13	-20 / 100	7	140x145/155	±0,03	1,1	0,25	Internal + External	16	430X400X410	25
S200-H23	-20 / 100	7	140x145/155	±0,03	2	0,25	Internal + External	16	430X400X410	25

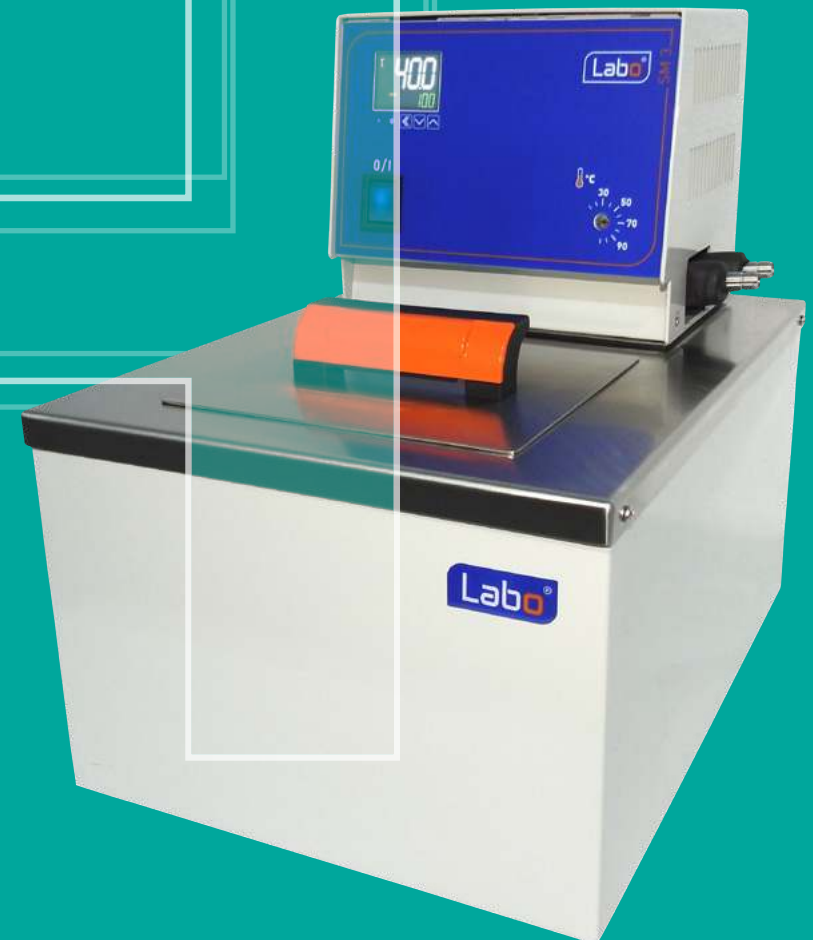
# H SERIES

## HEATING CIRCULATORS

H (Heater) series circulators have only heating feature and are used to work between at room temperature (can be +5 °C higher than room temperature) and 250 °C. Because of their PID control system, they are suitable for precise temperature applications.

Internal liquid circulation, stainless steel bath surface, easy fluid drain system and the PID control system are common features for all models.

If external liquid circulation is requested, please inform to your sales representative to advice models which have external liquid circulation feature.



# H SERIES

## HEATING CIRCULATORS

COMMON FEATURES	
Display Type	Digital
Display Resolution	0,1°C
Temperature Control System	New Generation PID
Over Temp. Alert System	Existing
Material	Stainless Steel
Easy Liquid Drain System	Existing
Low Liquid Level Alert System	Existing for product codes end with number 2 (XXX-X2)
Power Requirement	220-240 V / 50-60 Hz
RS485 Communication Interface	Optional



### H (HEATER) SERIES - HEATING CIRCULATORS

Product Code	Temp. Range (°C)	Bath Capacity (lt)	Bath Opening/Depth(mm)	Temperature Stability (°C)	Heating Capacity (kW)	Circulation Type	Pump Capacity (lt/min)	Dimensions (mm)	Weight (kg)
H70-H13	30 / 100	7	140x145/155	±0,03	1,1	Internal + External	16	250X425X395	12
H70-H23	30 / 100	7	140x145/155	±0,03	2	Internal + External	16	250X425X395	12
H70-D22	30 / 100	7	140x145/155	±0,02	2	Internal	16	250X425X405	12
H70-H22	30 / 100	7	140x145/155	±0,02	2	Internal + External	16	250X425X405	12
H75-D22	30 / 200	7	140x145/155	±0,02	2	Internal	16	250X425X405	12
H75-H22	30 / 200	7	140x145/155	±0,02	2	Internal + External	16	250X425X405	12
H76-D22	30 / 250	7	140x145/155	±0,02	2	Internal	16	250X425X405	12
H76-H22	30 / 250	7	140x145/155	±0,02	2	Internal + External	16	250X425X405	12
H200-D23	30 / 100	20	260x360/160	±0,03	2	Internal	16	360X650X400	25
H200-H23	30 / 100	20	260x360/160	±0,03	2	Internal + External	16	360X650X400	25
H200-D22	30 / 100	20	260x360/160	±0,02	2	Internal	16	360X650X410	25
H200-H22	30 / 100	20	260x360/160	±0,02	2	Internal + External	16	360X650X410	25
H205-H22	30 / 200	20	260x360/160	±0,02	2	Internal + External	16	360X650X410	25
H205-D22	30 / 200	20	260x360/160	±0,02	2	Internal	16	360X650X410	25
H250-D22	30 / 100	25	140x145/600	±0,02	2	Internal	16	250X425X800	24
H250-H22	30 / 100	25	140X145/600	±0,02	2	Internal + External	16	250X425X800	24
H255-D22	30 / 200	25	140x145/600	±0,03	2	Internal	16	250X425X800	24
H540-D22	30 / 100	54	350x420/270	±0,03	2	Internal	16	452X722X515	30

### Labo **BMS-90**

Temperature Range	Ambient Temperature / +100 °C
Display Type	Digital
Temperature Control Type	PID + Timer
Display Resolution	0,1 °C
Temperature Stability	± 0,2 °C
Temperature Probe	0,01 °C PT100
Heating Capacity	0,7 kW
High Temperature Safety Sys.	Existing
Easy Handling	Existing
Bath Volume	5-10 liters
Bath Material	Stainless Steel
Easy Drain System	Existing
Bath Opening	240 x 300 mm
Bath Depth	150 mm
Dimensions (w x l x h)	450 x 350 x 210 mm
Power Requirement	220-240 V / 50-60 Hz
Weight	9 kg

**Note:** a Stainless steel plane lid is delivered with water bath as free of charge.

**Advice:** You can check Accessories page for Anti Evaporation Balls which provide practical working without lid.

You will like it 👍



- Non-circulated
- Handles for easy relocation
- Easy-clean interior
- No heaters, sensors or other fittings in the bath vessel
- Full use of the bath
- Timer feature
- Special design and concept product (like Labo's logo design)



## Labo BMS-200

Temperature Range	Ambient Temperature / +100 °C
Display Type	Digital
Temperature Control Type	PID + Timer
Display Resolution	0,1 °C
Temperature Stability	± 0,2 °C
Heating Capacity	1,5 kW
High Temperature Safety Sys.	Existing
Easy Handling	Existing
Bath Volume	10-21 liters
Bath Material	Stainless Steel
Easy Drain System	Existing
Bath Opening	300 x 500 mm
Bath Depth	150 mm
Dimensions (w x l x h)	650 x 410 x 210 mm
Power Requirement	220-240 V / 50-60 Hz
Weight	12,6 kg

**Note:** a Stainless steel plane lid is delivered with water bath as free of charge.

**Advice:** You can check Accessories page for Anti Evaporation Balls which provide practical working without lid.

You will like it 



- Non-circulated
- Handles for easy relocation
- Easy-clean interior
- No heaters, sensors or other fittings in the bath vessel
- Full use of the bath
- Timer feature
- Special design and concept product (like Labo's logo design)

# Chiller

In old times, tap water was used as a cooling mode in many laboratories. At first, this method was seen as a practical solution, but then the users became aware of certain deficiencies. Tap water contains lime due to the damage to many devices and equipments and also it causes to decrease in the performance. It could be removed but it was still causing waste of time which is the most precious thing today. In addition, tap water, in cool winter days, could serve as a good cooler, but when it gets heated with the heat of summer it was not able to fulfill its task. Continuous drain of water crucially damages to the environment and to the economy was a big problem in itself. Due to such reasons, conscious laboratory personnel headed for closed circuit refrigerated circulators.

Chiller equipments which designed for applications that require high cooling capacity, are external circulation featured models. Liquids in baths (water, alcohol, antifreeze, etc.) are sent to different cells and devices with external liquid circulation pump. The liquid which loaded heat where it goes and returns to the bath, is sent to the system with cooling again.

## Labo CH1000

Temperature Range	-20 / +40 °C
Display Type	Digital
Temperature Control Type	New Generation PID
Temperature Stability	± 0,05 °C
Heating Capacity	2,0 kW
Cooling Capacity (at 20 °C)	1,0 kW
Internal Liquid Circulation	Existing
External Liquid Circulation	Existing
Bath Capacity	8 liters
Bath Material	Stainless Steel
Easy Fluid Drain System	Existing
Bath Opening	140 x 145 mm
Bath Depth	160 mm
Pump Flow	16lt/min
Dimensions (w x l x h)	320 x 380 x 650 mm
Weight	39 kg
Power Requirement	220-240 V / 50-60 Hz



# Calibration Baths

Gaining the right to a measuring instrument capable of measuring or testing the ability of the process is called calibration. For doing temperature calibration is used liquid calibration baths and it's the most practiced method.

- > Reaching the target temperature in a very short time
- > Holding the liquid temperature stable very sensitively
- > Easy to do measurements with all temperature sensors

Labo's calibration baths are developed for these features. The products which are universal models are appropriate to all temperature calibration measurements and correspond all needs of their users.

## Kind of Measured Sensors;

Initially, Pt100, Pt500, Pt1000, ptc, ntc, k, j, t, e, l, u, n, r, s, b sensors, infrared thermo sensors, digital and analog thermometers, glass thermometers and many of temperature sensors' calibration can be done easily.



CAL-140

# CALIBRATION BATHS

## COMMON FEATURES

Display Type	Digital
Display Resolution	0,01 °C (Optional for CAL models)
Temperature Check System	PT-100 (0,01 °C precision)
Over Temp. Alert System	Existing
Material	Stainless Steel
Easy Liquid Drain System	Existing
Low Liquid Level Alert System	Existing for CAL models
Power Requirement	220-240 V / 50-60 Hz



## SPECIAL PURPOSE DEVICES/CALIBRATION BATHS

Product Code	Temp. Range (°C)	Bath Capacity (lt)	Bath Opening/Depth(mm)	Temperature Stability (°C)	Heating Capacity (kW)	Cooling Capacity (at 20°C/kW)	Circulation Type	Dimensions (mm)	Weight (kg)
CAL-60	30 / 200	9	130x170/200	±0,01	2,2	–	Internal	310x430x420	12
CAL-140	-40 / 100	9	130x170/160	±0,01	2,2	0,40	Internal	310x430x620	37
CAL-160	-60 / 100	9	140x145/160	±0,01	2,2	0,45	Internal	490x650x900	87
CAL-180	-80 / 100	9	140x145/160	±0,01	2,2	0,52	Internal	490x650x900	92
CALX-60	30 / 250	9	Ø 100/500	±0,01	2,2	–	Internal	450x500x1260	80
CALX-100	0 / 100	9	Ø 100/500	±0,01	2,2	0,35	Internal	450x500x1260	90
CALX-140	-40 / 100	9	Ø 100/500	±0,01	2,2	0,40	Internal	450x500x1260	95
CALX-180	-80 / 100	9	Ø 100/500	±0,01	2,2	0,52	Internal	450x500x1260	110

# Cloud Point and Pour Point Test Baths

Pour Point expresses the lowest temperature which the sample keeps its liquidity while cooled under the certain standards.

Pour Point devices are used generally in labs which analyses oil products (naphta – biodisel) while testing samples whether they are appropriate to the standards or not.

Long term usage of devices is caused the corrosion and oxidation problems on surfaces which touch to liquid. Because of Labo's stainless steel bath structure, the corrosion and oxidation problems are avoided and provided long lived device to users.

The devices are delivered with air jacket (suitable for ASTM D97), test tube (glass) and ASTM 5C thermometer.

Naphta – Fuel Oil – Fuel Biodiesel – Auto Biodiesel – Ship Fuels – Diesel

- Manuel measurement can be done with ASTM glass thermometer optionally
- The device provides easy to use on table
- Designed to work silently in Laboratories

## Some Standards:

ASTM D97 / ASTM D2500 / ASTM D5853 / DIN 51428 / DIN 51597 / IP 15 / IP 219 / IP 309 - TS 1233 ISO 3016 / ISO 3015



# CLOUD POINT and POUR POINT TEST DEVICES

## COMMON FEATURES

Display Type	Digital
Display Resolution	0,1 °C
Material	Stainless Steel
Easy Liquid Drain System	Existing
Power Requirement	220-240 V / 50-60 Hz



## SPECIAL PURPOSE DEVICES/CLOUD POINT and POUR POINT DEVICES

Product Code	Temp. Range (°C)	Bath Capacity (lt)	Sample Quantity (pcs)	Temperature Stability (°C)	Heating Capacity (kW)	Circulation Type	Pump Capacity (lt/min)	Dimensions (mm)	Weight (kg)
CPP-100	-40 / 100	8	2	±0,1	1,1	Internal	16	310x380x650	39
CPP-100-3	0 / -18 / -40	3x8	6	±0,1	3 x 1,1	Internal	16	310x380x650	89
CPP-105	-40 / 100	8	4	±0,1	1,1	Internal	16	310x380x650	39
CPP-105-3	0 / -18 / -40	3x8	12	±0,1	3 x 1,1	Internal	16	310x380x650	90
CPP-300	0 / -18 / -40	3x6	12	±0,1	-	Internal	16	1000x400x1000	85
CPP-600	-60 / 100	8	2	±0,1	-	Internal	16	490x650x900	87

# Charpy Cooling Baths

When we evaluate the charpy impact test results, we observe that sample temperature is an important factor. Labo Charpy Cooling Baths are the usable devices to prepare charpy samples at cold or hot stable temperature for test. Rustless sample basket which has capacity of 100 pieces of sample and special charpy sample tongs which provides to locate the samples to charpy impact device untouched are freely delivered with the device. Charpy sample tongs is a special product which has very low convective.

According to the ASTM and TSE (Turkish Standards Institution) standards, the required time for conditioning the charpy samples which in liquid is much shorter than air condition. The charpy cooling baths can condition the samples in a short time and take impact test by the liquid in bath.





# CHARPY COOLING BATHS

## COMMON FEATURES

Display Type	Digital
Display Resolution	0,1 °C
Temperature Control System	New Generation PID
Over Temp. Alert System	Existing
Material	Stainless Steel
Easy Liquid Drain System	Existing
Power Requirement	220-240 V / 50-60 Hz



## SPECIAL PURPOSE DEVICES/CHARPY COOLING BATHS

Product Code	Temp. Range (°C)	Bath Capacity (lt)	Bath Opening/Depth(mm)	Temperature Stability (°C)	Heating Capacity (kW)	Cooling Capacity (at 20°C/kW)	Circulation Type	Pump Capacity (lt/min)	Dimensions (mm)	Weight (kg)
CP-400 Charpy	- 40 / 100	8	140x145/160	±0,03	1,1	0,47	Internal	16	320x380x650	39
CP-402 Charpy	- 40 / 100	22	260x360/200	±0,05	1,1	0,51	Internal	16	495x690x892	68
CP-650 Charpy	- 65 / 100	8	140x145/160	±0,05	1,1	0,61	Internal	16	495x690x892	92
CP-800 Charpy	- 80 / 100	8	140x145/160	±0,05	1,1	0,67	Internal	16	495x690x892	92

# Magnetic Circulating Bath

Labo MG-800 magnetic circulating bath model is a special designed device which win huge admiration of its users. MG-800 provides many different working by its large usage area and magnetic stirrers which are under the surface of bath. Samples which are in the bath and stirring system can be easily watch by its lucid observation glass.



## Labo MG-800

Temperature Range	+30 / +70 °C
Temperature Control Type	New Generation PID
Display Resolution	± 0,1 °C
Heating Capacity	2,2 kW
Dimensions (w x l x h)	1200 x 700 x 550 mm
Bath Opening	950 x 550 mm
Bath Depth	200 mm
Internal Liquid Circulation	Existing
Bath Capacity	80-104 liters
Bath Material	Stainless Steel
Quantity of Magnetic Stirrers	8 units
Power Requirement	220-240 V / 50-60 Hz

# Viscosity Bath

Labo VSC - 100 kinematic viscosity bath is digital and easy to use universal device which provides appropriate measurements to the standards of ASTM D445 and TS 1451 EN ISO 3104. Measurements can easily be done by watching from lucid glass surface and semi-automatically. Many U tubes measurement systems like ubbelohde, micro ubbelohde, cannon-fenske, micro -ostwald etc. can be used. Water or silicone oil can be preferred as bath liquid.

To work at the temperature which are under the room temperature viscosity baths, which can easily connect and work integrated with Labo Refrigerated Circulators, are used commonly at mineral oil, chemistry, petrochemical, textile, plastic and polymer materials measurements. Working temperature can be easily changed and watched by digital screen in VSC-100 model which you can hold 3 different samples at ready.

You can arrange comparative measurements with special fixation accessories for calibration ASTM glass thermometer.



## Labo VSC-100

Temperature Range	+30 / +150 °C
Display Type	Digital
Temperature Control Type	New Generation PID
Display Resolution	0,1 °C
Temperature Stability	± 0,02 °C
Heating Capacity	2,0 kW
Cooling Feature	*Optional (+10 °C)
High Temp. Safety Sys.	Existing
Low Fluid Level Warning Sys.	Existing
Internal Liquid Circulation	Existing
Bath Capacity	25 liters
Bath Material	Glass
Sample Capacity	3 units
Pump Material	Stainless Steel
Power Requirement	220-240 V / 50-60 Hz

\* With P200-H22 and a cooling coil

## Stable Temperature Jackets (Glass or Stainless Steel)

Labo stable temperature jackets are practical application tool which is used to stable the temperature of samples or sample glasses. These jackets which are used with refrigerated and heating circulators, are made of glass or stainless steel and have liquid capacity between 250 ml and 10000 ml. They provide to mix the samples homogenous depends on your demand by locating on magnetic stirrers and putting magnetic stirring bars in it. Changes of sample can be always observed because of its pearly structure.

### Method of Applying:

Liquid is sent to the Labo stable temperature jacket by silicone tube from digital controlled Labo circulators' external circulation exit. The liquid which entered from the bottom part exits from the exit pipe which is on the top point by compassing in the jacket and comes back to the water bath by silicone tube. Labo circulators have digital control panel and demanded temperature can be easily arrange to 0, 1 °C sensitively.



## Lead Rings (Covered Soft PVC)

It is used to prevent floating or falling of materials such as erlenmeyer flask and round bottom flask which located in the bath. These accessories which provides very practical usage, can be used as su-  
perpose. Thereby weight will be increased.

Labo Lead Rings are very important helper at cooling – heating – stable temperature works by locating erlenmayer flask and round bottom flasks which has little sample inside in the bath.

**Weight:** 475 gr.

**Inner Diameter:** 45 mm



## Anti Evaporation Balls

While working in water baths, vaporization is decreased at 80% by fulling surface of the water with balls. Balls swim on the liquid and cover the surface like a sealed tap. Produced of polypropylene material and used till to 100 °C.

### Advantages:

- Avoids to evaporation up to 80%
- Decreases energy consumption because it provides isolation on the liquid
- Decreases odour constitution
- Prevents water equipments come to harm because of liquid diminish



Ø20 mm x 250 pieces

**Surface area:** 0,093 m<sup>2</sup> / a package

## Silicone Oil

Silicone oil which is used as bath liquid between at + 30 / +200 °C, is appropriate to use in many works by sending liquid in the bath and out of the bath. This liquid which is harmless to the environment and human health, gives perfect stable and homogen measurement solutions by its low viscosity feature.



10 lt

## Calibration Certificate

It is the calibration certificate for Labo Baths which certified by TurkAk (Turkish Accreditation Agency) laboratory.



## Tubing Clamp

It is used at the connect points of tubing to avoid water wangles and fall away of tubing. The diameter of tubing clamp min: 12 mm – max: 17 mm



## Charpy Sample Tongs

The Charpy sample tongs have very low temperature transmission. It is used to settle the samples in to the bath and then settle in to the testing system.

\* It is important to cooling Charpy samples between at  $-40\text{ }^{\circ}\text{C}$  and  $-80\text{ }^{\circ}\text{C}$  temperature in the bath and taking to impact test in a short time and untouched. Thereby the results are stable and testing will be done without changing the temperature of sample.

- The material is stainless steel
- Designed and produced according to EN ISO 148-1 Standard



## Silicon Tubing

It is appropriate to use in Labo baths which has external circulation feature. Silicone tubing which is used for connection of sending liquid from water baths to different devices and sample cells, provides easy and flexible assembling.

**Working Temperature:**  $-80 / +100\text{ }^{\circ}\text{C}$

\*Don't use with silicone oil!



## Viton Tubing

It is appropriate to use in Labo baths which has external circulation feature. Viton tubing which is used for connection of sending liquid from water baths to different devices and sample cells, provides easy and flexible assembling.

Viton tubings are more resistant to high temperatures than silicone tubings.

**Working Temperature:**  $-35 / +200\text{ }^{\circ}\text{C}$



## Tubing Isolation

It is used for isolation of external circulation tubing. Provides amendment at temperature stabilise of liquid in tubing. Also avoids heat dissipation and transpiration at the time of cool liquid transfer.

**Working Temperature:** -100 / +100 °C



## Flow Indicator

It can be hard to observe liquid inflow by using circulators' external circulation system. To watch liquid inflow in the work Inflow Indicator wrapped between external tubing easily and fastly.

**Working Temperature:** 0 / +60 °C  
**Max. Working Pressure:** 2 bars  
**Min. Flow Indicator:** 150 ml/min.  
**Ext. Dimensions:** 87 x 15 x 41 mm



## Tubing Connector

In some cases which Labo circulators are used with different connection to other devices and cells, different tubings with different worths can be connect with each other. In these cases, tubing connector accessorize provides huge facility.

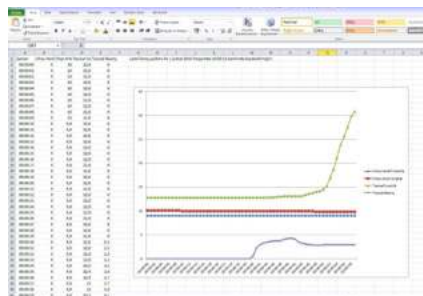
Tubing which are 5 and 17 mm inner diameter can be connect to each other with this accessorize. The total length of accessorize is 110 mm.





## LaboTEMP - Temperature Control Software

- Instantaneous measurement values
- Time-Temperature and Ramp control
- Ability to save, export and print results in excel format
- Graphical data analysis on instant measurements and recorded documents
- Record and recall temperature-time program



Excel Report



## Height Adjustable Rack

The height adjustable rack accessories which allow the samples to be placed easily and without tipping over in the tank.

It can easily be adjusted within 5 seconds without the need for mounting equipment like screws.

Rack material is stainless steel.

### Dimensions (w x l x h):

A101: 135 x 142 x 150 mm

A102: 125 x 168 x 153 mm

A103: 172 x 255 x 155 mm

A104: 203 x 348 x 262 mm



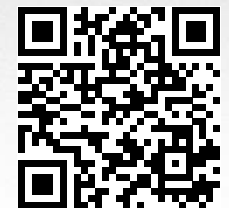
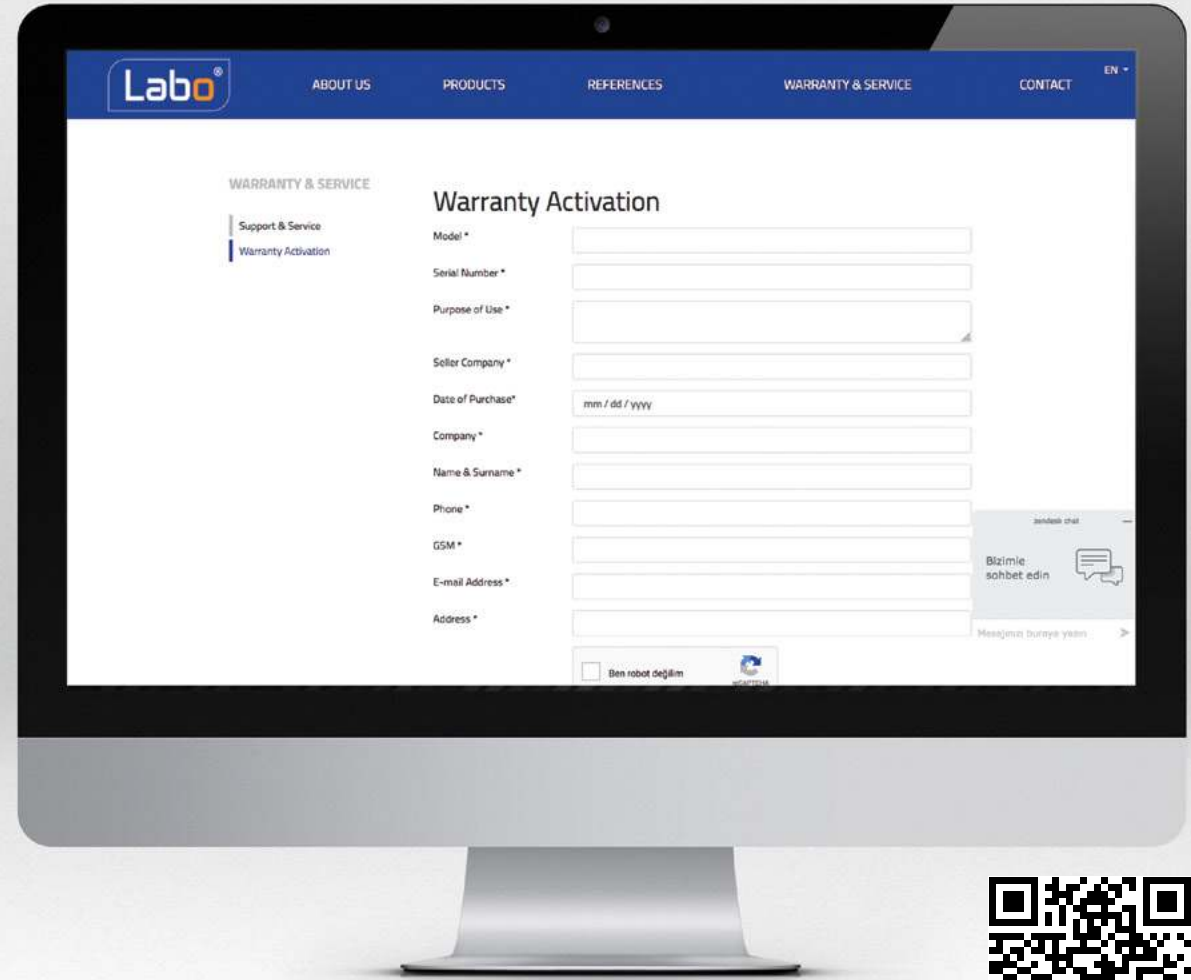
Labo Inc., keeps being solution partner for many private sector and public institution companies which do R&D, product and quality control working by its 39 years sector experiment. By combining knowledge, technology and engineering together Labo serves special products to users and waits for you to produce together.

You can contact with Labo Sales Team for your special design requests, suggestion and questions by e-mail and phone whenever you want.



# We extended the warranty period for you

- Please go to [www.labo.com.tr](http://www.labo.com.tr)
- Click to Warranty&Service tab
- Click to Warranty Activation
- Please fill all required informations
- Congratulations! You extended the warranty period one year more 😊







---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---



Labo®

LEADER  
MANUFACTURER  
WITH  $\pm 0,01$  °C  
PRECISION  
IN TURKEY

Labo's Official Distributor in South Korea



#807 Tower-dong, Heungdeok IT Valley 13,  
Heungdeok 1 ro, Giheung-gu, Yongin-si, Gyeonggi-do, Korea  
82-31-713-5988 / [sales@tessol.com](mailto:sales@tessol.com)