

General Specifications, Isotherm® Forced Convection Laboratory Incubator			
Model	IFA-32-1	IFA-54-1	IFA-110-1
Volume	32 litre (1.13 cu.ft)	54 litre (1.91 cu.ft)	110 litre (3.88 cu.ft)
Temperature Range	Ambient +5 °C to 100 °C		
Temperature Variation Per DIN 12880 Spatial Uniformity	at 37 °C	<=+/-0.5 °C	<=+/-0.4 °C
	at 50 °C	<=+/-0.6 °C	<=+/-0.7 °C
Temperature Fluctuation Per DIN 12880 Control Fluctuation	at 37 °C	<=+/-0.3°C	
	at 50 °C	<=+/-0.3°C	
External Dimensions (W x D x H)	550 x 437 x 615 mm 21.7" x 17.2" x 24.2"	550 x 527 x 695 mm 21.7" x 20.7" x 27.4"	710 x 587 x 785 mm 28" x 23.1" x 30.9"
Internal Dimensions (W x D x H)	400 x 250 x 320 mm 15.7" x 9.8" x 12.6"	400 x 340 x 400 mm 15.7" x 13.4" x 15.7"	560 x 400 x 490 mm 22" x 15.7" x 19.3"
Number of Shelves	Standard	2	2
	Maximum	3	4
Load Per Shelf	15 kg (33 lbs)	15 kg (33 lbs)	30 kg (66 lbs)
Total Load, Maximum	30 kg (66 lbs)	30 kg (66 lbs)	60 kg (132 lbs)
Incubator Construction	Main Body	Electrogalvanised steel with white oven-baked epoxy power-coated finish	
	Chamber	Stainless steel, grade 304	
Electrical	220-240V, AC, 50Hz, 1Ø		
Incubator Power/ Amp	770W / 3.4A	890W / 4A	1110W / 4.9A
Net Weight	44 kg (96 lbs)	58 kg (128 lbs)	73 kg (161 lbs)
Shipping Weight	56 kg (122 lbs)	71 kg (157 lbs)	89 kg (196 lbs)
Shipping Dimensions, Maximum (W x D x H)	610 x 530 x 670 mm 24.0" x 20.9" x 26.4"	620 x 610 x 750 mm 24.4" x 24.0" x 29.5"	770 x 670 x 840 mm 30.3" x 26.4" x 33.0"
Shipping Volume, Maximum	0.21 m³ (7.4 cu.ft)	0.28 m³ (9.9 cu.ft)	0.43 m³ (15.2 cu.ft)

Note: All technical specifications are specified for units with standard equipment at an ambient temperature of 20 °C and a voltage fluctuation of ±10 %. Temperature data is determined in accordance with DIN 12880 standards. All indications are average values, typical for units produced in series. Esco reserves the right to alter technical specifications at all times.

Standards Compliance	Temperature Safety	Electrical Safety
	DIN 12880 Class 3.1	UL 61010-1, USA CAN/CSA-22.2, No.61010-1 EN 61010-1, Europe IEC 61010-1, Worldwide

Options

- Door keylock prevents unauthorized access to sensitive samples.
- Glass viewing port in main door enables easy sample monitoring.
- Wall bracket (only for 32L, 54L chambers) accomodates desired operating heights.
- Support stands, fixed height, available 703 mm (27.7").
- Right door swing.
- Access port.

ESCO
WORLD CLASS. WORLDWIDE.

escoglobal.com
LIVE SUPPORT



Biological Safety Products
Cleanroom Products
Containment / Pharma Products
Ductless Fume Hoods / Carbon Filtration
General Purpose Scientific Equipment
Industrial Lab Equipment
In-Vitro Fertilization Products
PCR Products
Pharmacy Products
Lab Animal Research Products
Lab Thermostatics Products
Lab Ventilation / Chemical Fume Products / Lab Furniture
Powder Handling Products

Since 1978, Esco has emerged as a leader in the development of controlled environment, laboratory and cleanroom equipment solutions. Products sold in more than 100 countries include biological safety cabinets, fume hoods, ductless fume hoods, laminar flow clean benches, animal containment workstations, cytotoxic cabinets, hospital pharmacy isolators, and PCR cabinets and instrumentation. With the most extensive product line in the industry, Esco has passed more tests, in more languages, for more certifications, throughout more countries than any biosafety cabinet manufacturer in the world. Esco remains dedicated to delivering innovative solutions for the clinical, life science, research and industrial laboratory community. www.escoglobal.com.

Biological Safety Cabinets and Laminar Flow • Laboratory Fume Hoods • Laboratory Ovens
Laboratory Incubators • PCR Thermal Cyclers • Microplate Shaker/Incubators • Ultralow Freezers

ESCO

WORLD CLASS. WORLDWIDE.

Esco Technologies, Inc. • 2940 Turnpike Drive, Units 15-16 • Hatboro, PA 19040 USA
Toll-Free USA and Canada 877-479-ESCO • Tel +1 215 441 9661 • Fax +1 215 441 9660
us.escoglobal.com • usa@escoglobal.com

Esco Micro Pte. Ltd. • 21 Changi South Street 1 • Singapore 486 777
Tel +65 6542 0833 • Fax +65 6542 6920 • mail@escoglobal.com
www.escoglobal.com

Esco Global Offices | Kuala Lumpur, Malaysia | Leiden, The Netherlands | Manama, Bahrain
Mumbai, India | Philadelphia, USA | Salisbury, UK | Shanghai, China | Singapore



ESCO
WORLD CLASS. WORLDWIDE.

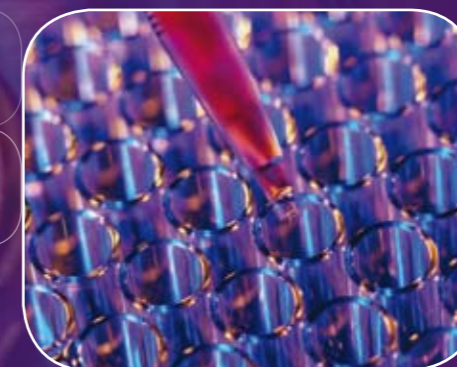
Isotherm®

Forced Convection Laboratory Incubators

Introducing Esco Isotherm® - world class laboratory incubators from Esco with the technologies and compliance to prove it. Ergonomic, intuitive interfaces, microprocessor PID controls with programming options, 4 zone heated air jacket, precisely tuned and tested ventilation and insulation package, all supported by Esco's solutions - based sales and service representatives worldwide.

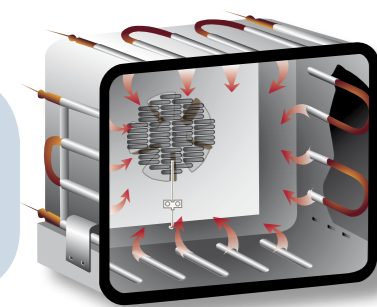


Isotherm Forced Convection Laboratory Incubators, 110L, 54L and 32L models.



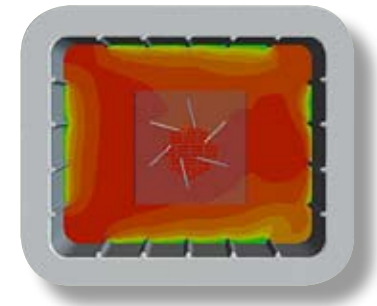
Isotherm, Forced Convection Laboratory Incubators

Reliable Performance For Universal Applications

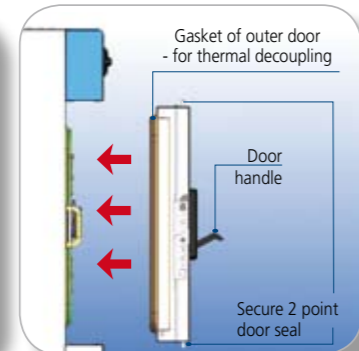
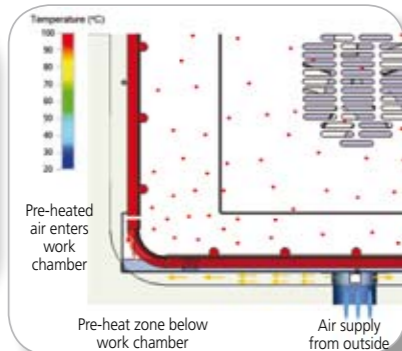


Solaris™ Pre-Heat Chamber Technology

- Innovative design guarantees maximum thermal performance.
- No heating elements directly present in the chamber ensure maximum user safety.
- 4 zone heated air jacket ensures stable heating and maximum temperature uniformity in the chamber.
- Standard temp range up to 100 °C for maximum application flexibility.
- Secure 2 point door seal and eccentric hinge ensure maximum gasket compression for stable chamber temperature.

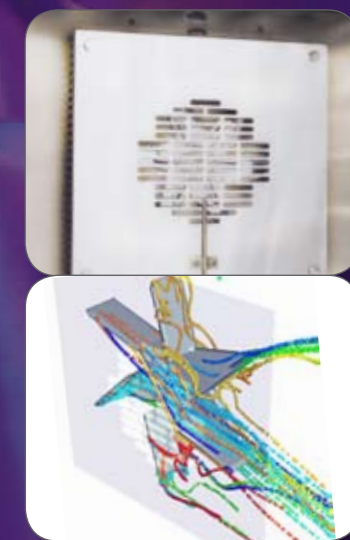


Extremely Uniform Thermal Distribution



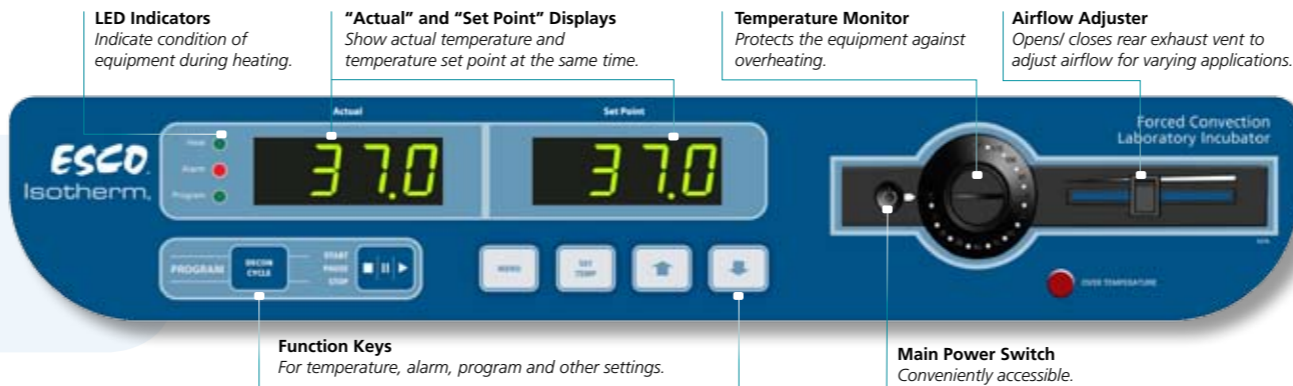
VentiFlow™ Ventilation System

- Forced convection design produces faster temperature response rates, improved uniformity, and reduced fluctuation.
- German made ebm-papst fan, permanently lubricated, maintenance free for uniform air circulation.
- Low energy consumption for reduced operating costs.
- Fan speed and air exchange rates are adjustable.
- Consistent air circulation and heat uniformity.
- Low noise during operation.
- Wire mesh shelves ensure uniform chamber air exchange.
- Fresh air entry from the base of the chamber, combined with the rounded corners of the chamber interior, and air exhaust at the rear of the chamber, creates uniform air circulation ensuring maximum temperature uniformity.
- Chamber fan inlet pulls air away from the user, preventing the user from being exposed to blasts of hot air when the door is opened.



Superior Insulation

- Multi layer chamber, pre-heat chamber, insulation and external carcass.
- Improves chamber temperature stability, while reducing external surface temperatures.
- Unique door ventilation design reduces door temperature even when the chamber temperature is at the maximum operating point.
- Superior insulation performance reduces heat load output to the laboratory, reduces operating power consumption, and lowers operating costs.



LED Indicators
Indicate condition of equipment during heating.

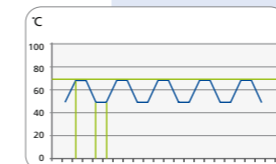
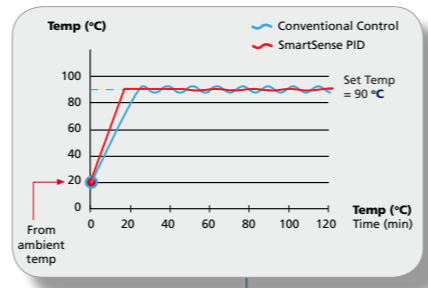
"Actual" and "Set Point" Displays
Show actual temperature and temperature set point at the same time.

Temperature Monitor
Protects the equipment against overheating.

Airflow Adjuster
Opens/closes rear exhaust vent to adjust airflow for varying applications.

Function Keys
For temperature, alarm, program and other settings.

Main Power Switch
Conveniently accessible.



Wide Range of Program Options

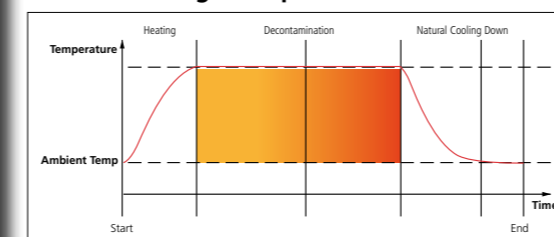
Sample Program 1
Repeats of identical processes based on user's setting of 'start temp', 'arrival temp', and running time after arrival. All settings can be done in a single program. For example, repeat a process from 50°C to 70°C and back.

Sample Program 2
Running different processes sequentially based on user's setting of 'start temp', 'arrival temp', and running time after arrival. Different programs may be linked to extend the total number of sequences, thus creating virtually unlimited programming options.

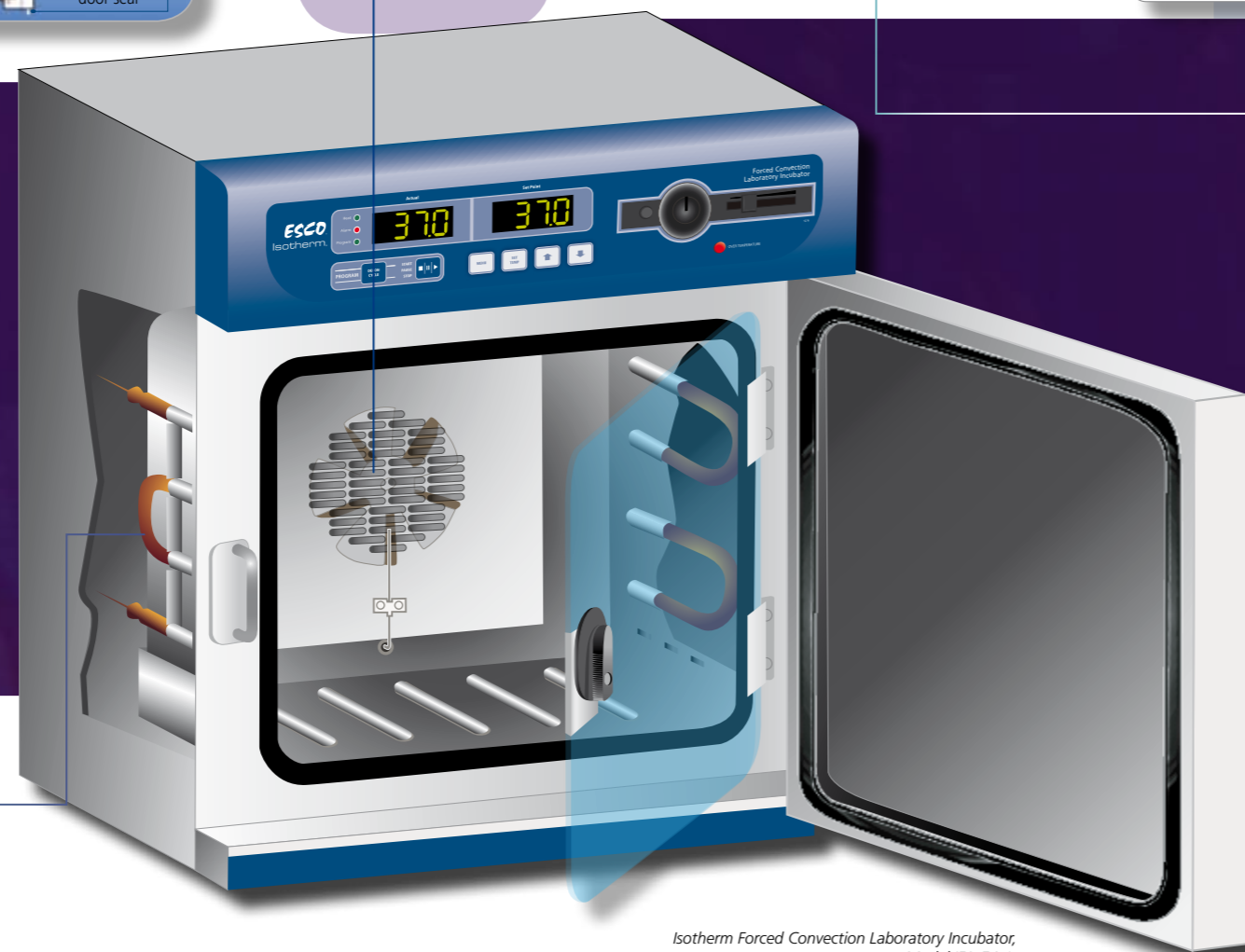
SmartSense™ Microprocessor PID Control Technology

- Instrument-grade precision platinum temperature probe.
- Tuned PID control ensures fast ramp time, prevents overshoot, and ensures stable temperature once setpoint is achieved.
- Twin temperature displays for easy monitoring.
- Built-in menu is intuitive, easy to operate; left display shows parameter being set, and right display shows present value.
- User programmable alarm setpoints.
- Display units selectable between °C / °F.
- User programmable PIN to prevent unauthorised use.
- Anywhere from 10 programs with 5 segments to 1 program with 50 segments may be configured. Programs may be set up to repeat automatically.
- Audible confirmation of all settings.
- Diagnostic functions provide access to chamber historical temperatures, sensor read-outs, to simplify service.
- Diagnostic LEDs on electronics PCB simplify service.
- RS485 data output is standard.

Convenient High Temp Decon



- Microbiologically proven high temperature decontamination cycle at 90°C for 9 hours inactivates all common bacteria and fungi.
- Reduces sample contamination, saves time and money.
- Fully automated, requires no user intervention.



Isotherm Forced Convection Laboratory Incubator, Model IFA-54-1.

Safe, Superior Protection for Sample, User and the Environment

- Multiple redundant over-temperature protection systems to guarantee maximum sample and user protection.
- Electronic over-temperature protection built into the microprocessor.
- Redundant mechanical over-temperature protection, adjustable from the front, independent from the microprocessor.
- Overall temperature protection meets DIN 12880 Class 3.1.
- Red LED illuminates if external mechanical temperature protection is engaged.
- Controller will control temperature at the over temperature setpoint.
- All electrical components UL recognized.
- Electrical circuit protection in accordance with UL requirements.

Ergonomic Design Improves Convenience

- Ergonomic door handle, operation is gravity assisted.
- Bright LED displays mounted at top (not base) of the device are easily read from across the laboratory.
- 2 shelves are included for 32L and 54L models, 3 shelves for 110L models.
- Directly mounted shelves increase usable chamber space.



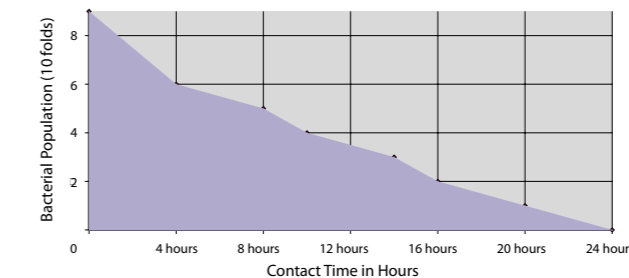
Easy-to-Clean

- "Cleanroom" design with minimal joints and crevices is easy to clean.
- Single piece stainless steel chamber with rounded corners.
- Formed direct shelf mounts reduce chamber hardware and reduce difficult to clean spaces.
- Glass door is dismountable without tools for easy cleaning.



Easy-to-Service

- Diagnostic functions in the microprocessor include historical read-out of temperatures.
- Diagnostic menu provides read-out of all sensor inputs and controller settings.
- Service can be carried out from the front.
- All electronics components are isolated from the work chamber, and easily accessible for replacement.
- Low service costs.



Quality Esco Construction

- Electrogalvanised steel with white oven-baked epoxy antimicrobial powder-coated finish.
- External surfaces are powder coated with Esco **ISOCIDE™** to eliminate 99.9% of surface bacteria within 24 hours of exposure.

