



Isotherm[®]

Forced Convection Laboratory Ovens
Reliable Performance For Universal Applications





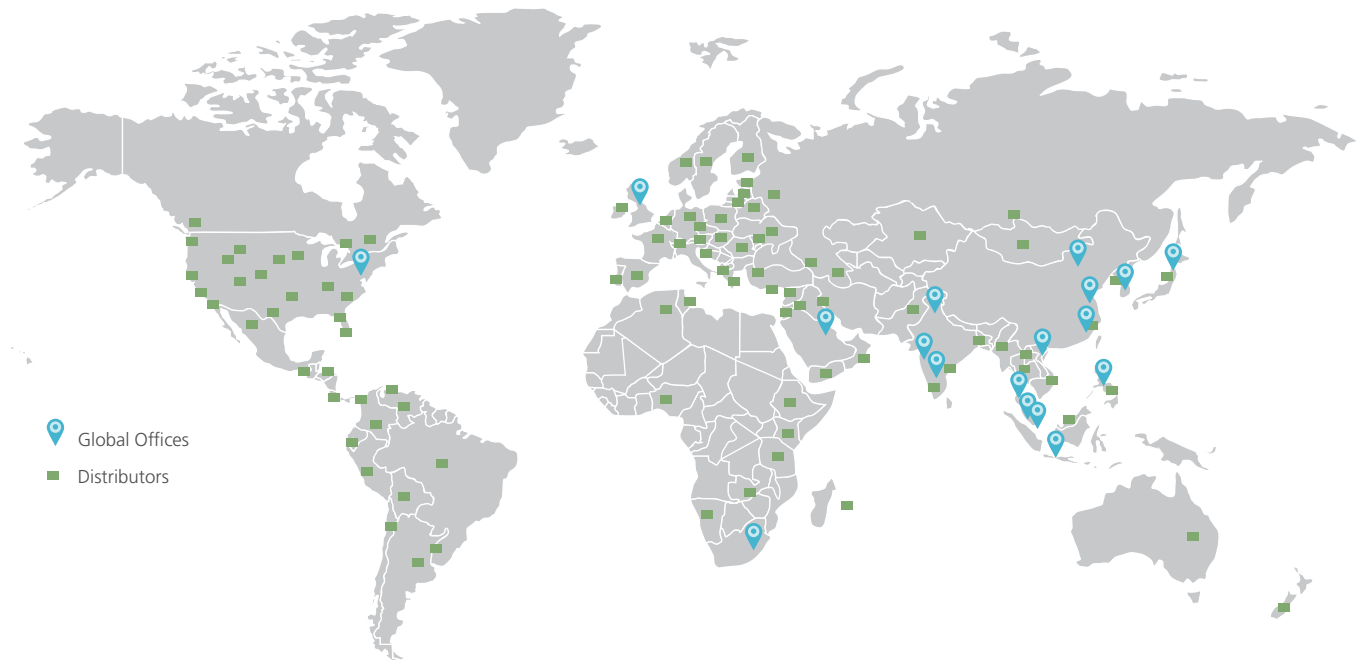
WELCOME TO ESCO

Esco's Vision is to provide enabling technologies for scientific discoveries to make human lives healthier and safer.

- A leader in the development of controlled environment, laboratory and pharmaceutical equipment solutions.
- A world leader in biological safety cabinets.
- Esco has established offices in 13 countries such as Bahrain, China, India, Japan, Korea, Malaysia, Philippines, Singapore, UK, US, Vietnam, South Africa and Indonesia and is continually expanding.
- North American facilities in Pennsylvania; sales, service, logistics for US & Canada.
- Group total of more than 600 employees.
- Distributors in more than 100 countries.
- Products independently tested to international standards.
- Large R&D investments, world leading technologies.
- State-of-the-art production; vertically integrated manufacturing floor space.
- Worldwide service played out over a geographic expanse so broad that the sun never sets on what we do.

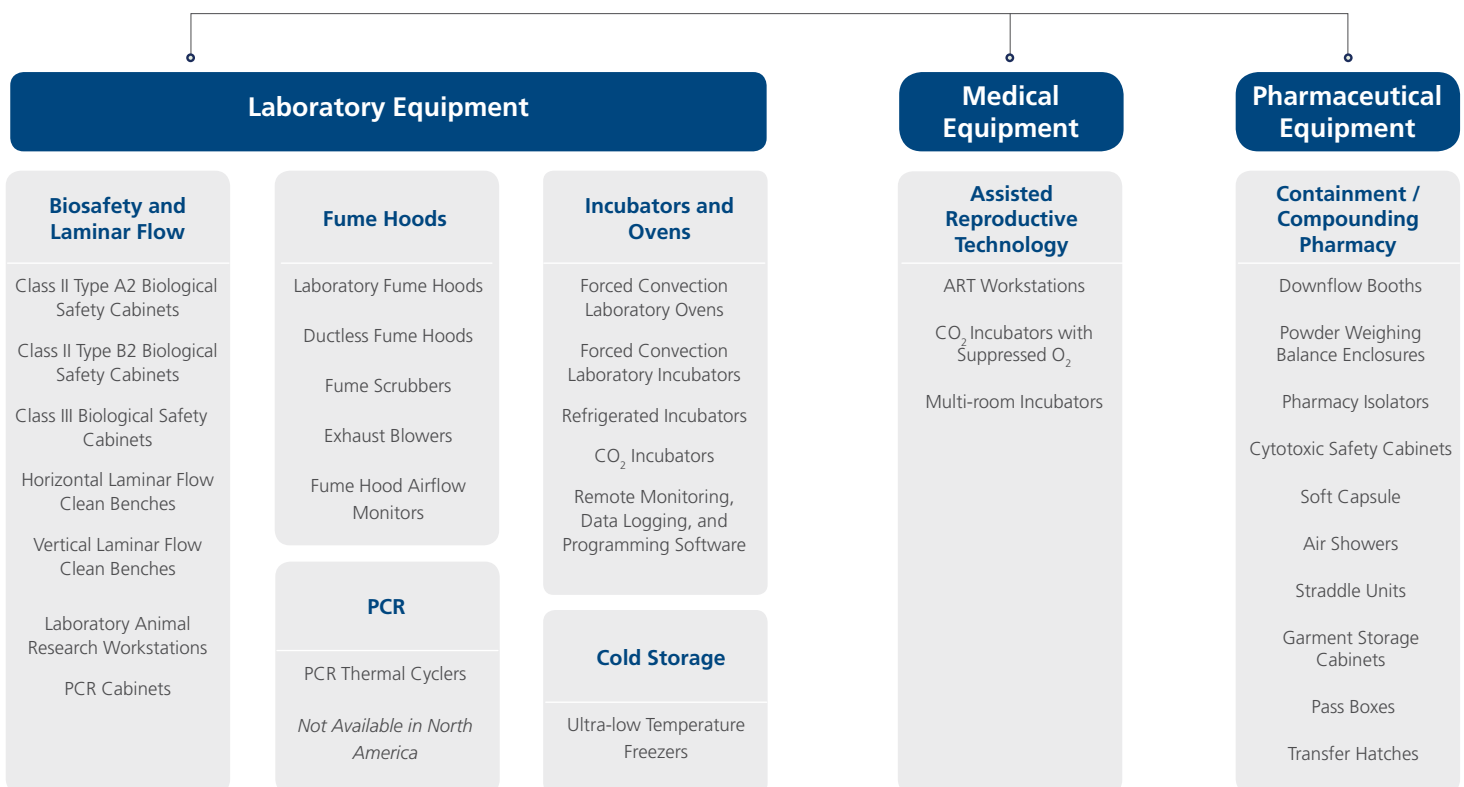


GLOBAL NETWORK



PRODUCTS AND APPLICATION

Esco Life Science Tools



Isotherm®

Forced Convection Laboratory Ovens

INTRODUCTION

Introducing Esco Isotherm® - world class laboratory ovens 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.

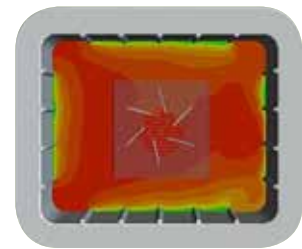
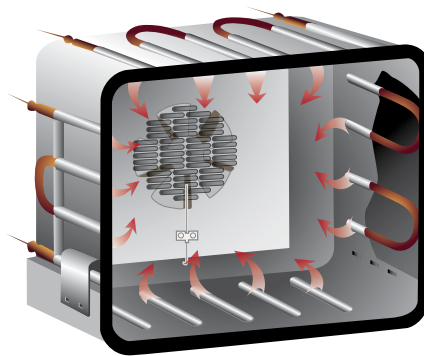


KEY FEATURES

ISOTHERM® FORCED CONVECTION LABORATORY OVENS

Reliable Performance For Universal Applications

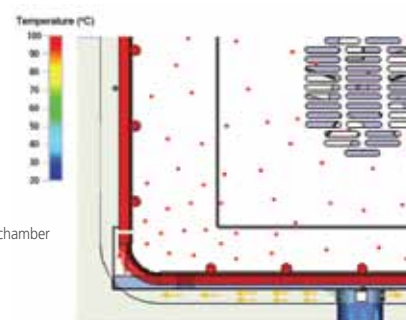
SOLARIS™ PRE-HEAT CHAMBER TECHNOLOGY



Extremely Uniform Thermal Distribution

- Innovative design guarantees maximum thermal performance.
- No exposed heating elements located inside the chamber to ensure maximum user safety.
- 4-zone heated air jacket ensures stable heating and maximum temperature uniformity in the chamber.
- Standard temperature range of up to 300 °C for maximum application flexibility.
- Secure 2-point door seal and eccentric hinge ensure maximum gasket compression for stable chamber temperature.

Isotherm® Forced Convection Laboratory Ovens available in 5 sizes, 32L, 54L, 110L, 170L, 240L.



Pre-heated air enters work chamber

Pre-heat zone below work chamber

Air supply from outside



VENTIFLOW™ VENTILATION SYSTEM

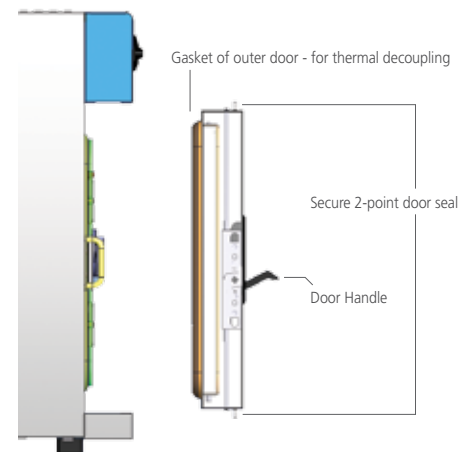
- Forced convection design produces faster temperature response rates, improved uniformity, and reduced fluctuation.
- German made ebm-papst fan, permanently lubricated, maintenance free for uniform air circulation.
- Low energy consumption for reduced operating costs.
- Fan speed and air exchange rates are adjustable.
- Consistent air circulation and heat uniformity.
- Low noise during operation.
- 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 exposure of the user to blasts of hot air when the door is opened.

QUALITY ESCO CONSTRUCTION

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



Isotherm® Forced Convection Laboratory Oven

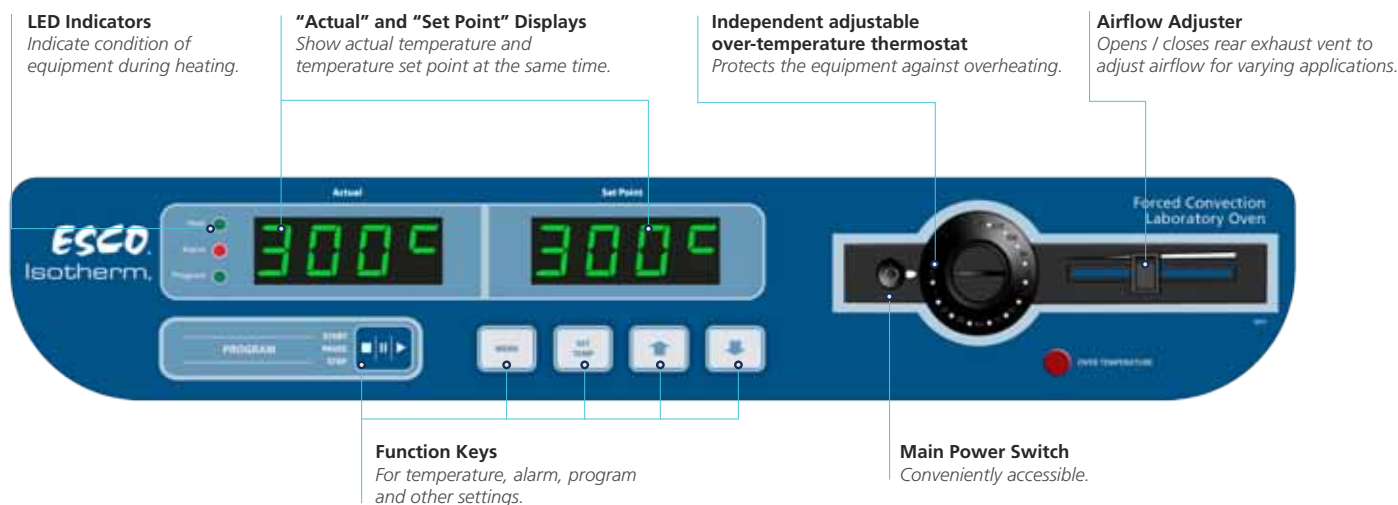


SUPERIOR INSULATION

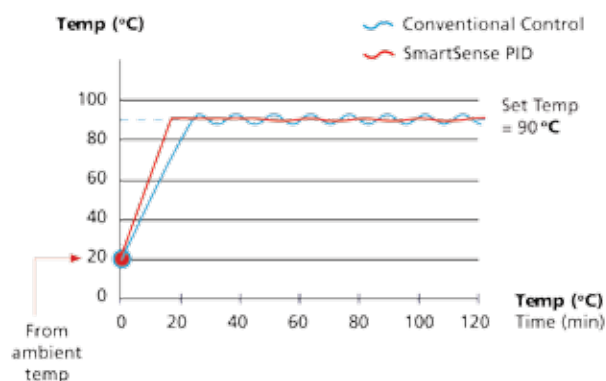
- Multi-layer chamber, pre-heat chamber, insulation and external carcass.
- Improves chamber temperature stability, while reducing external surface temperatures.
- Unique door ventilation design reduces door temperature even when the chamber temperature is at the maximum operating point.
- Superior insulation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

CONTROLLER TYPE

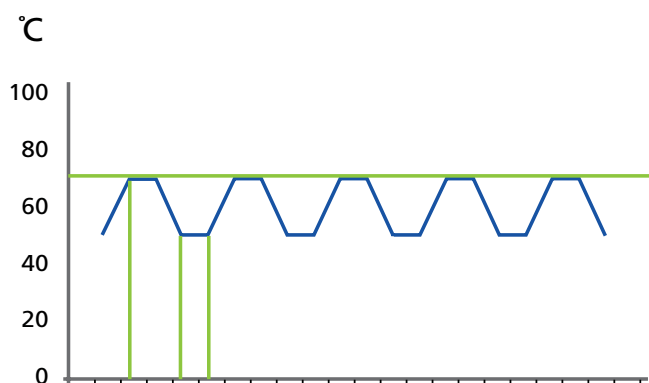
SMARTSENSE™ MICROPROCESSOR PID CONTROL TECHNOLOGY



- 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 preset value.
- User programmable alarm setpoints.
- Display temperature units selectable between °C / °F.
- User programmable PIN to prevent unauthorized 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 and sensor read-outs to simplify service.
- Diagnostic LEDs on electronics PCB simplify service.

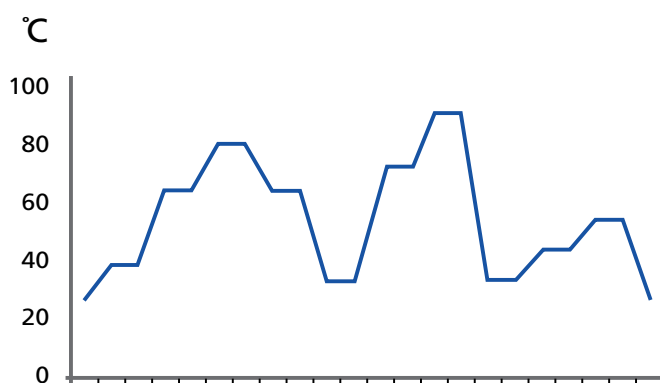


WIDE RANGE OF PROGRAM OPTIONS



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.

Voyager®

Remote Monitoring, Datalogging, Programming Software

Esco Voyager® is a PC-based software package developed for the remote monitoring, datalogging, and programming / device configuration of Esco thermostatic products.

Voyager® interfaces with individual Esco equipment over RS485 using the EscoBUS communications protocol. Up to 16 devices of equipment may be interfaced to a single PC.

Compatible Equipment

- Lexicon® – Ultra-low Temperature Freezer (with U-Series Controller)
- CelCulture® – CO₂ Incubator (CCL)
- CelMate® - CO₂ Incubator (CLM)
- Isotherm® – Forced Convection Oven (OFA)
- Isotherm® – Forced Convection Incubator (IFA)
- Isotherm® – Low Temperature Incubator (IFC)



OTHER SUPERB FEATURES

FORCED CONVECTION LABORATORY OVEN APPLICATIONS

APPLICATION	MATERIAL/ SAMPLE
Drying	Glassware
	Powders
	Paper, textile
	Soil, sand
	Electronics
	Pharmaceutical preparations
Material testing	Cables
	Plastics

APPLICATION	MATERIAL/ SAMPLE
Curing	Paint
	Adhesives
	Plastics
	Metals
Heated storage	Pills, drugs
Vulcanization	Rubber

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 are UL recognized.
- Electrical circuit protection in accordance with UL requirements.

ERGONOMIC DESIGN

ACCESS FOR TEMPERATURE VALIDATION AND MAPPING



Back View

Access port

RS485 COMMUNICATION PORT



The RS485 provides serial communication port for PC. It can be daisy chained from product to product and connected to a PC.

OPTIONAL STAINLESS STEEL EXTERIOR



- Corrosion resistant surface.
- Robust construction.
- Meets pharmaceutical & clinical laboratory requirements.

ERGONOMIC DOOR HANDLE WITH KEYLOCK



Ergonomic door handle, operation is gravity assisted.



Door keylock prevents unauthorized access to sensitive samples.



EASY-TO-CLEAN

- "Cleanroom" design with minimal joints and crevices is easy to clean.
- Single-piece stainless steel chamber with rounded corners.

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 electronic components are isolated from the work chamber and easily accessible for replacement.
- Low service costs.



OPTIONS AND ACCESSORIES



Wall bracket (only for 32L and 54L chambers)
Accommodates desired operating heights.



Reversed door swing (factory installed)



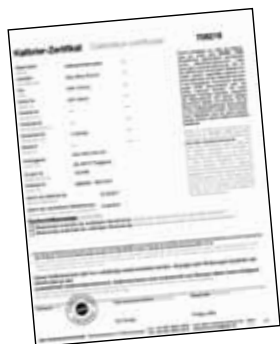
Support stands fixed height at 703 mm (27.7")



Voyager Software Kit

Esco Voyager is a PC-based software package developed for the remote monitoring, datalogging and programming / device configuration of Esco controlled environment laboratory equipment.

TESTING AND CERTIFICATION



Esco Isotherm Laboratory Ovens were tested, validated and have passed the calibration conducted by Testo Industrial Services GmbH, an ISO/IEC 17025 accredited testing laboratory. The measuring installation used for calibration are regularly calibrated and traceable to the national standards of the German Federal Physical Technical Institute (PTB).

The statement of conformity was made according to DIN EN ISO 14253-1, according to calibration instruction QSA 7.5-02.

ORDERING INFORMATION

UNIT ORDERING

MODELS	DESCRIPTION
OFA-32-8	Isotherm® General Purpose Oven, 32L, 220-240VAC 50/60Hz
OFA-32-8-SS	Isotherm General Purpose Oven, Stainless Steel Exterior Cabinet, 32L, 220-240VAC 50/60Hz
OFA-54-8	Isotherm® General Purpose Oven, 54L, 220-240VAC 50/60Hz
OFA-54-8-SS	Isotherm General Purpose Oven, Stainless Steel Exterior Cabinet, 54L, 220-240VAC 50/60Hz
OFA-110-8	Isotherm® General Purpose Oven, 110L, 220-240VAC 50/60Hz
OFA-110-8-SS	Isotherm General Purpose Oven, Stainless Steel Exterior Cabinet, 110L, 220-240VAC 50/60Hz
OFA-170-8	Isotherm® General Purpose Oven, 170L, 220-240VAC 50/60Hz
OFA-170-8-SS	Isotherm General Purpose Oven, Stainless Steel Exterior Cabinet, 170L, 220-240VAC 50/60Hz
OFA-240-8	Isotherm® General Purpose Oven, 240L, 220-240VAC 50/60Hz
OFA-240-8-SS	Isotherm General Purpose Oven, Stainless Steel Exterior Cabinet, 240L, 220-240VAC 50/60Hz

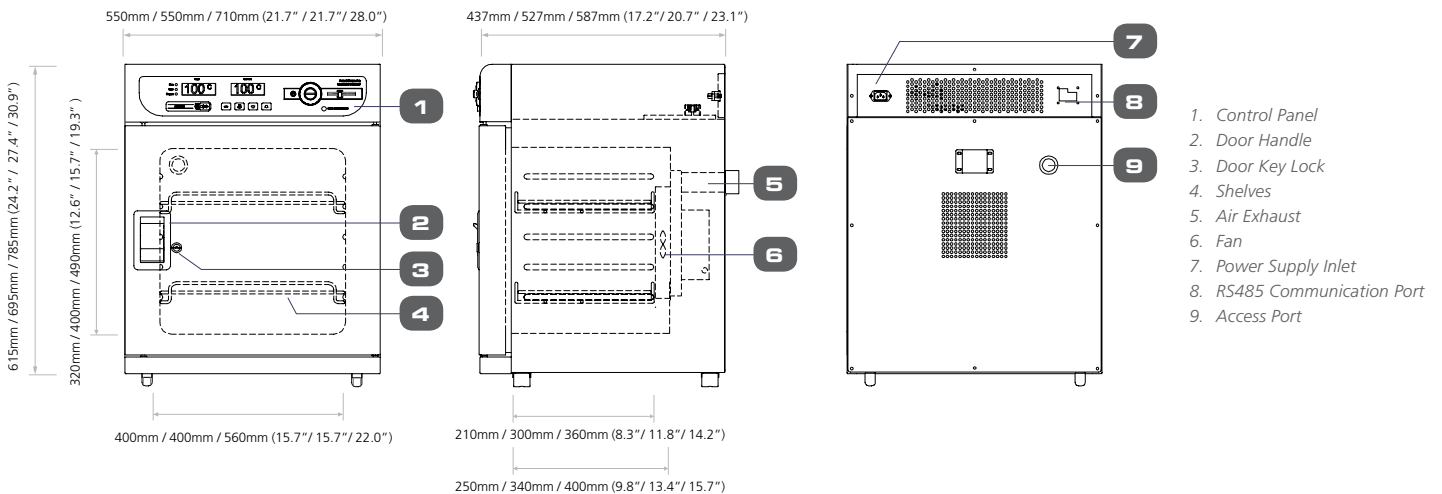
ORDERING INFORMATION

ACCESSORIES ORDERING

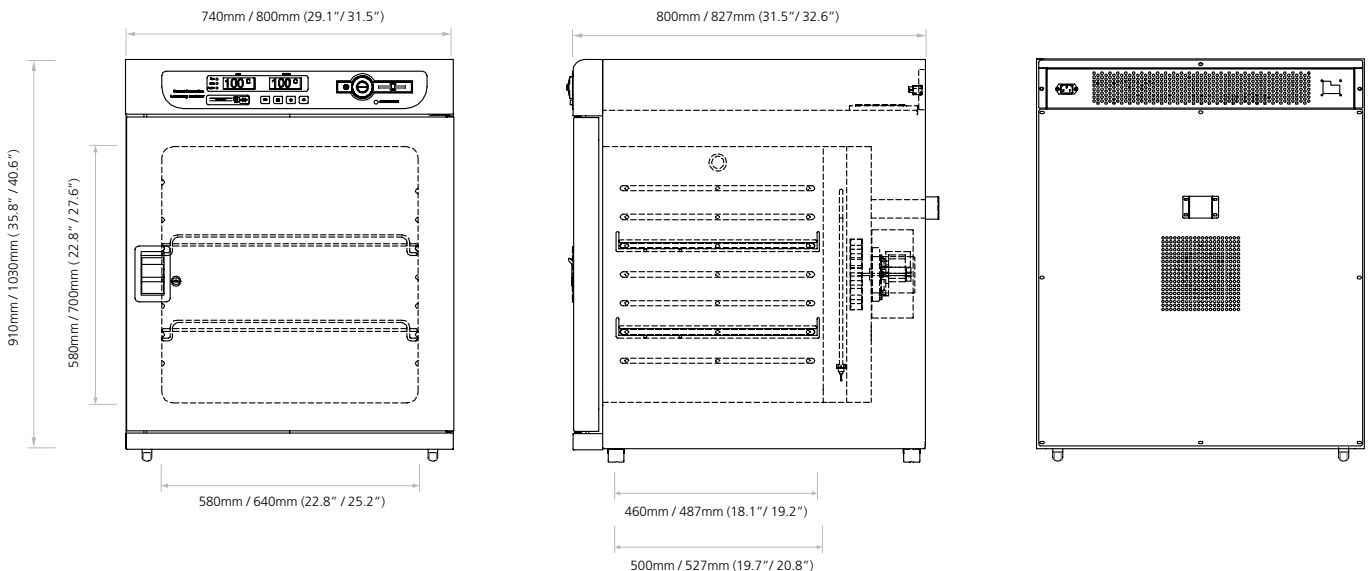
ACCESSORIES	DESCRIPTION
TOA-1005	Wall bracket for OFA-32-8
TOA-1006	Wall bracket for OFA-54-8
TOA-1007	Support stand, 703mm (27.7") for OFA-32-8
TOA-1008	Support stand, 703mm (27.7") for OFA-54-8
TOA-1009	Support stand, 703mm (27.7") for OFA-110-8
TOA-1010	Support stand, 703mm (27.7") for OFA-170-8
TOA-1011	Support stand, 703mm (27.7") for OFA-240-8
TOA-1012	Additional shelf, for OFA-32-8
TOA-1013	Additional shelf, for OFA-54-8
TOA-1014	Additional shelf, for OFA-110-8
TOA-1018	Additional shelf, for OFA-170-8
TOA-1019	Additional shelf, for OFA-240-8
5250001	Voyager software kit

TECHNICAL SPECIFICATIONS

OFA 32L, 54L, 110L








OFA 170L & 240L



GENERAL SPECIFICATIONS

FORCED CONVECTION
LABORATORY OVENS

		OFA-32-8 OFA-32-8-SS*	OFA-54-8 OFA-54-8-SS*	OFA-110-8 OFA-110-8-SS*	OFA-170-8 OFA-170-8-SS*	OFA-240-8 OFA-240-8-SS*
						
Volume		32 liter (1.13 cu.ft)	54 liter (1.91 cu.ft)	110 liter (3.88 cu.ft)	170 liter (6.00 cu.ft)	240 liter (8.48 cu.ft)
Temperature Range		Ambient +7.5°C to 300°C				
Temperature Variation Per DIN 12880 Spatial Uniformity	at 70 °C	<=+/-0.7°C	<=+/-0.8°C	<=+/-1.0°C	<=+/-1.5°C	<=+/-1.3°C
	at 150 °C	<=+/-1.5°C	<=+/-1.6°C	<=+/-2.0°C	<=+/-4.1°C	<=+/-4.6°C
	at 250 °C	<=+/-3.3°C	<=+/-2.1°C	<=+/-3.1°C	<=+/-6.2°C	<=+/-8.7°C
Temperature Fluctuation Per DIN 12880 Control Fluctuation	at 70 °C	<=+/-0.3°C	<=+/-0.3°C	<=+/-0.3°C	<=+/-0.3°C	<=+/-0.8°C
	at 150 °C	<=+/-0.3°C	<=+/-0.3°C	<=+/-0.3°C	<=+/-0.6°C	<=+/-0.9°C
	at 250 °C	<=+/-0.3°C	<=+/-0.3°C	<=+/-0.3°C	<=+/-1.6°C	<=+/-2.2°C
Heating up time	at 70 °C	36 minutes	41 minutes	45 minutes	44 minutes	60 minutes
	at 150 °C	25 minutes	32 minutes	59 minutes	52 minutes	52 minutes
	at 250 °C	37 minutes	40 minutes	61 minutes	57 minutes	91 minutes
Recovery time after 30 sec door opening	at 70 °C	6 minutes	6 minutes	12 minutes	3 minutes	20 minutes
	at 150 °C	7 minutes	6 minutes	11 minutes	9 minutes	10 minutes
	at 250 °C	6 minutes	7 minutes	7 minutes	8 minutes	12 minutes
Electrical (220-240V, AC, 50/60Hz, 1Φ)	Power consumption at 70 °C	97 W	38 W	121 W	162 W	194 W
	Power consumption at 150 °C	270 W	356 W	440 W	492 W	519 W
	Power consumption at 250 °C	519 W	701 W	1020 W	932 W	1088 W
	Maximum Power Consumption**	1533 W	1707 W	2252 W	2176 W	2382 W
Noise Level		51 dB	49 dB	49 dB	51 dB	52 dB
Oven Construction	Main Body	Electrogalvanized steel with white oven-baked epoxy-polyester powder-coated finish				
	Chamber	Stainless steel, grade 304				
Number of Shelves	Standard	2	2	2	2	2
	Maximum	4	5	6	7	9
Maximum Load Per Shelf		15 kg (33 lbs)	15 kg (33 lbs)	30 kg (66 lbs)	30 kg (66 lbs)	30 kg (66 lbs)
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"	740 x 800 x 910 mm 29.1" x 31.5" x 35.8"	800 x 827 x 1030 mm 31.5" x 32.6" x 40.6"
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"	580 x 500 x 580 mm 22.8" x 19.7" x 22.8"	640 x 527 x 700 mm 25.2" x 20.8" x 27.6"
Net Weight		43 kg (95 lbs)	52 kg (115 lbs)	75 kg (165 lbs)	114 kg (251 lbs)	138 kg (304 lbs)
Shipping Weight		55 kg (121 lbs)	66 kg (146 lbs)	94 kg (207 lbs)	136 kg (300 lbs)	160 kg (353 lbs)
Shipping Dimensions, Maximum (W x D x H)		620 x 530 x 840 mm 24.4" x 20.9" x 33.1"	630 x 620 x 920 mm 24.8" x 24.4" x 36.2"	780 x 680 x 1020 mm 30.7" x 26.8" x 40.2"	900 x 900 x 1100 mm 35.4" x 35.4" x 43.3"	900 x 900 x 1200 mm 35.4" x 35.4" x 47.2"
Shipping Volume, Maximum		0.37 m³ (13.1 cu.ft)	0.49 m³ (17.3 cu.ft)	0.61 m³ (21.5 cu.ft)	0.89 m³ (31.4 cu.ft)	0.97 m³ (34.3 cu.ft)

NOTE:

- All technical specifications are specified for units with standard equipment at an ambient temperature of 25°C and a voltage fluctuation of ±10%.
- The temperature data are determined in accordance with DIN 12880 standards as per factory type test condition.
- Esco reserves the right to alter technical specifications at all times.

* Stainless steel exterior option is available for all sizes.

** In order to calculate the current at maximum power consumption, divide maximum power consumption by the voltage.

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



Biological Safety Cabinets
 Compounding Pharmacy Equipment
 Containment / Pharma Products
 CO₂ Incubators
 Ductless Fume Hoods
 In-Vitro Fertilization Workstations
 Lab Animal Research Products
 Laboratory Fume Hoods
 Laboratory Ovens and Incubators
 Laminar Flow Clean Benches
 PCR Products
 Ultra-low Freezers

Since 1978, Esco has emerged as a leader in the development of controlled environment, laboratory and pharmaceutical equipment solutions. Products sold in more than 100 countries include biological safety cabinets, compounding pharmacy equipment, containment / pharma products, ductless fume hoods, in vitro fertilization workstations, lab animal research products, laboratory fume hoods, laboratory ovens and incubators, laminar flow clean benches and PCR products 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 • Ultra-low Freezers

ESCO

WORLD CLASS. WORLDWIDE.


HeraScientific
 LIFE SCIENCE

HeraScientific Life Science S.L.

C/ Mistral 2 - 28223 Pozuelo de Alarcón (Madrid)

Tel: + 34 91 679 99 59

Email: info@herascientific.com

www.herascientific.com


escoglobal.com
 LIVE SUPPORT

ISOCIDE™

9010035 Lab Incubators, Ovens, A.C., C.O. 08/12
 Esco reserves the right to alter its products and specifications without
 notice. All trademarks and logos in this material are the property of Esco and the
 respective companies.

