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Measuring Success

300°C Laboratory Ovens

The SNOL /300 series from AML Instruments are a range of precision electric laboratory ovens. They are designed for low temperature thermal treatment such as drying, heating and thermal testing in an air-flow assisted environment.

Forced air convection is used to provide more effective drying and quicker heating, as well as improved temperature uniformity throughout the stainless steel lined chamber. With a temperature range of 50 to 300ºC, the precision temperature control system provides good stability and uniformity for high quality results.

A digital PID temperature controller, displaying the current temperature and set-point is fitted as standard, with the option of more advanced controllers with additional functionality also available.

An independent over-temperature protection device is fitted as standard that prevents the oven exceeding its maximum safe temperature. As well as offering peace of mind, this can help meet Health & Safety and insurers' requirements, where the oven is left running unattended (e.g. overnight).

All models have a fan speed controller, as standard from AML, allowing some adjustment of volume of air being circulated. Speed is adjustable in 10 nominal steps or the fan(s) can be turned off (only for use below 150°C). All models have a control knob to select internal or external air circulation (or a mixture as desired).

- *Stainless steel chamber.*
- *Air circulation fan(s) with adjustable speed.*
- *Digital PID control :- good stability, accuracy and thermal uniformity.*
- *Independent Over-Temperature Protection.*
- *Sustainable serviceable design and long-term support & repairs.*
- *Many customisations and options available on short lead-times.*
- *Many available from AML's UK stock for fast delivery.*

AML Instruments has these ovens manufactured with mineral insulated (MI) heating elements. These are hermetically sealed, giving longer life and more resilience to certain thermal processes, such as those involving oils, abundant moisture, carbon, etc. Subsequently the range has an increased warranty period of 2 years. Based on our many years of experience calibrating, repairing and upgrading ovens and furnaces, we offer our SNOL ovens uniquely customised with accessibility for maintenance and calibration in mind. Our sustainable design means all parts are accessible, serviceable and replaceable should the need arise. AML have offered long-term product support on SNOL ovens for over 15 years, stocking a wide range of spares and accessories at our factory in the UK.

UKAS CALIBRATION
10354

Our ovens are available with optional UKAS (ISO 17025) calibration of the temperature controller and sensor as a system, and we also offer multi-point thermal surveys of the chamber volume. AML Instruments Ltd is a UKAS accredited calibration laboratory No. 10354. We are ISO 17025 accredited for calibration on site and in our laboratory, as defined in our Schedule Of Accreditation (see https://shorturl.at/QLNqx).

AML Instruments also offers models customised to meet AMS 2750H (aerospace heat treatment specification), complete with UKAS calibration and thermal survey meeting NADCAP requirements before dispatch. For customisation to this specification or others please contact us.

AML's Standard Stocked Models

Normally available from stock or on a short lead time. Options on the following pages normally take a few days longer. Please contact us for a quote with current lead-times.

Model *AML Stock Code*	Capacity (Litres)	Chamber Size* External Size (WxDxH)	Shelves / Positions	Power	Weight	Price
SNOL 20/300 LFN *FCESNOL20/300LFN*	**20 L**	240 x 280 x 340mm 490 x 700 x 680mm	2 / 5	1 kW	36 Kg	**£ 1,580**
SNOL 60/300 LFN *FCESNOL60/300LFN*	**60 L**	380 x 380 x 420mm 630 x 740 x 760mm	3 / 6	2 kW	50 Kg	**£ 1,980**
SNOL 120/300 LFN *FCESNOL120/300LFN*	**120 L**	550 x 400 x 580mm 810 x 780 x 920mm	3 / 6	2 kW	70 Kg	**£ 2,380**

Supply Voltage: 230Vac 50Hz (single-phase). **Power Connector:** UK 13A (BS1363).

* As a general rule, a gap of a minimum of 10% of each chamber dimension should be left unused on each side of the load to ensure good air flow. WxDxH = Width (Left-right) x Depth (Front-back) x Height (Top-bottom).

SNOL 20/300 LFN

SNOL 60/300 LFN

SNOL 120/300 LFN

Additional Specifications		SNOL 20/300 LFN	SNOL 60/300 LFN	SNOL 120/300 LFN	SNOL 220/300 LFN	SNOL 420/300 LFN
Heating Time (Minutes. Approx.)	50°C	4	5	7	3	-
	100°C	8	11	14	7	-
	200°C	19	20	27	15	-
	300°C	34	34	45	30	36
Cooling Rate (°C per Minutes. Approx.)	>250°C		3.4			
	>200°C	Contact us	2.7	Contact us	Contact us	Contact us
	>150°C		1.7			
	>100°C		1.0			
Air Changes Per Hour (With fan at full speed and vent fully open. Approx.)	50°C	4	3	2	2	-
	100°C	9	8	3,5	4	-
	200°C	14	12	6	5	-
	300°C	21	16	9	6	-
Energy Required to Maintain Temperature (KW. Approx.)	50°C	0.10	0.12	0.17	0.30	-
	100°C	0.21	0.24	0.30	0.73	-
	200°C	0.32	0.47	0.64	1.20	-
	300°C	0.49	0.78	1.01	1.60	-
Shelf Loading Weight Limit; Single Standard Shelf / Oven Total (Kg. Non-concentrated.)		10 / 20	10 / 30	15 / 40	15 / 50	15 / 50
Optional extra : Reinforced Shelf		15	15	25	25	25
Packed Weight (Kg., Approx.)		56	70	100	138	228

UK Prices Exclude VAT and Delivery and are correct at the time of writing. Specification and price subject to change without notice.
All trademarks acknowledged. Appearance may vary from images shown.

Non-stocked Models

Normally available on a 5-8 week lead-time. The 420/300 and NNL models have double doors, hinged at each side. The NNL models have their controls at the top and so are more suited to floor standing or a low bench/table.

Model *AML Stock Code*	Capacity (Litres)	Chamber Size* External Size (WxDxH)	Supply Voltage	Power / Plug	Weight	Price
SNOL 220/300 LFN *FCESNOL220/300LFN*	**220 L**	730 x 500 x 620mm 975 x 920 x 955mm	230Vac	4 kW Blue 32A	102 Kg	**£ 3,980**
SNOL 220/300 NNL	**220 L**	730 x 470 x 620mm 965 x 845 x 955mm	230Vac	3.6 kW Blue 32A	100 Kg	**£ 3,640**
SNOL 420/300 LFN	**420 L**	1000 x 500 x 860mm 1260 x 920 x 1230mm	400Vac (3P+N+E)	6.2 kW Red 16A	178 Kg	**£ 4,880**
SNOL 420/300 NNL	**420 L**	995 x 470 x 860mm 1260 x 920 x 1230mm	400Vac (3P+N+E)	6.2 kW Red 16A	190 Kg	**£ 4,880**
SNOL 700/300 NNL	**700 L**	915 x 590 x 1300mm 1155 x 960 x 1655mm	400Vac (3P+N+E)	8 kW Red 16A	240 Kg	**£ 6,640**

Shelves/ Positions: 3 / 6

Power Connector: Blue 32A = IEC60309 (Single-phase. 50Hz).
Red 16A = IEC60309 5-pin 3P+N+E (3-phase, Star with Neutral. 50Hz.)

* As a general rule, a gap of a minimum of 10% of each chamber dimension should be left unused on each side of the load to ensure good air flow. WxDxH = Width (Left-right) x Depth (Front-back) x Height (Top-bottom).

SNOL 220/300 LFN

SNOL 220/300 NNL

SNOL 420/300 LFN

(Relative model sizes between images are not exact.)

SNOL 700/300 NNL

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Temperature Controller Options

1/16 DIN size (~48x48mm) digital PID temperature controllers, with Run/Stop (Auto/Off) modes and settable heating ramp rate. With 0.1°C display resolution and featuring Autotune which can be used to optimise the control terms for the load, but which is not necessary for most applications. Optional Programmer models allow advanced timed programs (profiles) to be configured. Other instruments can also be fitted to order, providing additional options, such as audible alarms, remote communications (RS-485 etc) and data logging / recording. Please contact us for further details. The Omron E5CC and Eurotherm EPC3016 operate a buzzer that sounds briefly (user-defined) when the program finishes.

Omron E5CC

(Fitted as standard)

Basic Timed Program:
Ramp, Dwell, Stop.

Eurotherm 3216

Optional at extra cost. **+£320**

Basic Timed Program:
Ramp, Dwell, Stop.

Eurotherm 3216 Programmer, 1 Program, 8 Segments

Optional at extra cost. **+£430**

(Segments as Ramp+Dwell pairs)

Eurotherm 3216 Programmer, 5 Program, 8 Segments each

Optional at extra cost. **+£540**

(Segments as Ramp+Dwell pairs)

Eurotherm EPC3016 Programmer, 1 Program, 8 Segments

Optional at extra cost. **+£430**

Eurotherm EPC3016 Programmer, 10 Program, 24 Segments each

Optional at extra cost. **+£540**

Eurotherm EPC3016 Programmer, with RJ45 Ethernet PC Network Port,

Optional (when OTP is also fitted) at extra cost:
1 Program, 8 Segments +£590
10 Program, 24 Segments each +£690

Connection to a laptop or PC network via Ethernet RJ45 port on front panel. Includes PC software for easier creation, editing and backup of timed programs.

Eurotherm nanodac Recorder, 1/4 DIN, with RJ45 Ethernet PC Network Port, USB data transfer, Programmer option

Contact us for full details and pricing.

Watlow PM Plus Programmer, 4 Programs, 10 Segments each, with Bluetooth for wireless phone app connection

Optional (when OTP is also fitted) at extra cost.
+£590 Contact us for full details.

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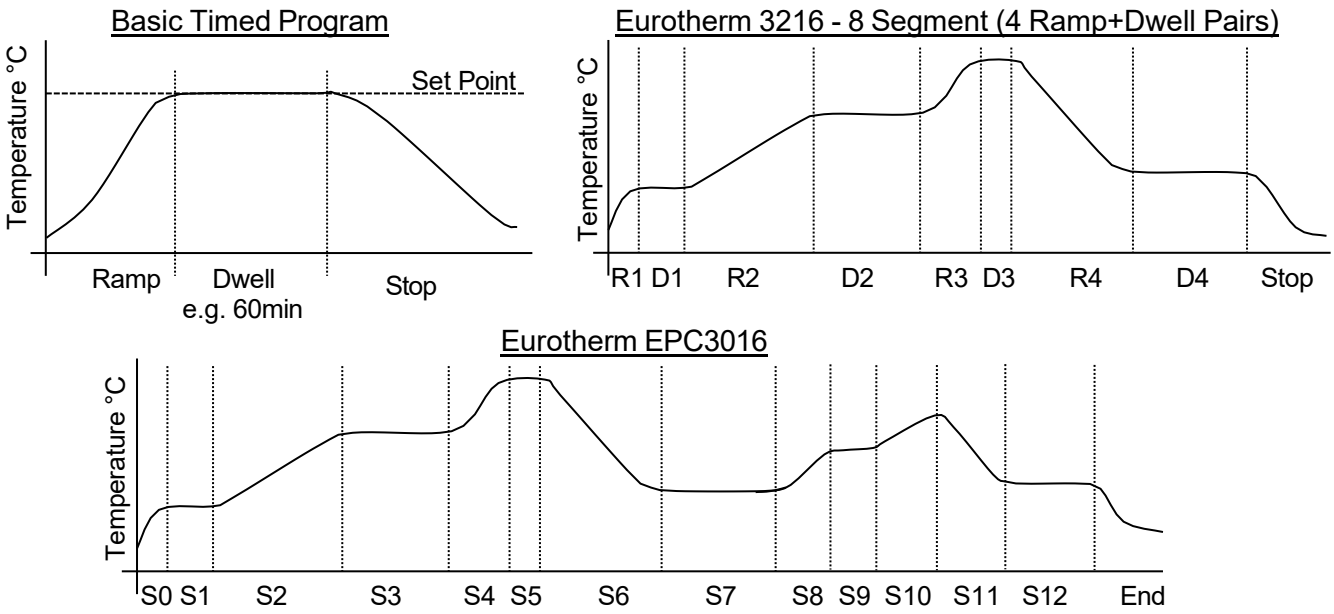

Over-temperature Protection Options

The ovens are fitted with basic over-temperature protection as standard. A user adjustable option is also offered by AML:

Basic OTP Included	An independent over-temperature protection thermostat device is fitted as standard that prevents the oven exceeding its maximum temperature. If tripped it, must be reset by pressing its button at the rear of the oven. As this limit is above 300°C, it won't necessary protect the user's load. *(Defined as DIN 12880 Class 1 category.)*
OTP 2 **+£270**	Additional digital temperature limit controller mounted in the front panel. Displays its temperature reading and can be set by the user to protect their load from exceeding their desired temperature. If the oven temperature exceeds the temperature set on the over-temperature protection controller, the oven will be prevented from heating until the user resets the over-temperature protection controller, by pressing its button. *(Defined as DIN 12880 Class 2 category.)*

7 Day Timer **+£290**

A timer can be fitted to the turn on the controller at a specific time. The controller will then run at its last setting. Featuring: Daily and weekly program, Manual override, Fully automatic daylight saving time.

Accessible Thermocouple Connections

We can fit accessible thermocouple connections (miniature plug and socket) to save time with regular calibrations. If one of the following is ordered as well as OTP2 option, then connections for the OTP2 will be also be provided.

Connections at the rear: **+£60**
Connection in the front panel: **+£90**

Consisting of miniature size thermocouple connectors. For use by a suitably qualified person, allowing direct electrical injection onto the instrument(s) sensor input. Units with OTP 2 will have connections for both systems when this option is ordered.

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Cable Entry Ports

Option	Details	Price
22mm Survey Port (Rear)	Flange outside. In bottom right corner by default.	**+£230**
30mm Cable Entry Port (Rear)	Flange outside. In top left corner by default.	**+£270**
'50mm' Cable Entry Port (Rear)	Flange outside. In top left corner by default.	**+£290**
30mm Cable Entry Port (Side/Top)	Flanges outside & inside.	**+£370**
'50mm' Cable Entry Port (Side/Top)	Flanges outside & inside.	**+£390**

Prices are for LFN models. For NNL models, contact us for price and availability. '50mm' sizes are nominal and in the range 47-51mm ID. Positions are as viewed from the front. Flanges protrude up to 30mm. Rear positions are limited, due to fan, vents, etc. Side positions are in the upper half of the chamber and may limit the shelf positions. Side positions can be on the left or right side, note that the door hinge is on the right. Further details are available on enquiry.

Suitable temperature rated material/bung is provided to block the Entry Port. Flanges and objects passing through the Entry Port may get hot and conduct heat outside the chamber. Excessive thermal loading or insufficient insulation in the entry port can have a negative on thermal uniformity in the chamber.

Additional Shelves

Extra Standard Shelf for SNOL 20/300	£80	Normally available from our stock.
Extra Standard Shelf for SNOL 60/300	£100	Normally available from our stock.
Extra Standard Shelf for SNOL 120/300	£120	Normally available from our stock.
Extra Standard Shelf for SNOL 220/300	£160	From our stock or 4-7 week lead-time.
Extra Standard Shelf for SNOL 420/300	£180	Not stocked, 4-7 week lead-time.

Reinforced Shelves for additional weight capacity are also available, with 4-7 week lead-time, please contact us for a price.

Calibration of SNOL Oven Systems

UKAS calibration of instrument(s) and thermocouple(s), as a system, at your choice of temperature(s) between 50 and 300°C. A calibration certificate is issued reporting the tested system's measurement at each temperature. Normally this calibration will be carried out in our laboratory prior to fitting into the oven. The typical lead-time is 4 - 10 working days. Fast turn-around may be available at additional cost.

No. of Specified Temperature Points	Control System Only	Control & OTP 2 Systems
1	£165	£212
2	£224	£271
3	£264	£312
4	£289	£335
5	£329	£376

A 5-point or 9-point thermal survey of the chamber volume can also be performed before despatch, please contact with your requirements for a quotation. We also provide on-site calibration services and thermal surveys.

UKAS CALIBRATION 10354

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Other Options

- The range is also available with stainless steel exterior (appearance may vary from unit pictured).
- Glass window (260x200mm WxH) in the door.
- Control panel at the top (for floor standing or low benches).

The lead times are typically 5 – 9 week and the price of the unit and some options are higher. Please contact us for a quote.

We may be able to assist with other bespoke requirements, please contact us with your requirements for further details.

We manufacture enhanced versions of these ovens meeting AMS 2750H and Nadcap compliant. Complete with calibration, under our ISO 17025 (UKAS) accreditation, and thermally surveyed before leaving our factory. With thermal uniformity Furnace Class 2, or better, and Instrumentation Types up to 'A'.

AML typically holds many standard builds of SNOL ovens and furnaces, ready to ship or finalised within a week, in stock at our factory and warehouse (near Sheffield, UK). With additional customisations and options within 2 weeks.

Viewing and demonstration is available by arrangement.

Delivery & Shipping

These units are shipped as a palletised wooden crate, on a courier service which is normally next-day for much of the UK.

Destination	Price	Typical Transit Time
UK Mainland (England, Wales, Scottish Lowlands)	**£95**	1-2 days
UK Scottish Highlands, Ilse of Wight	£130	1-3 days
UK Northern Ireland & Republic of Ireland	£175	1-3 days
Other destinations (including other UK coastal islands)	Please contact us for a quote.	
Collection from our factory (Derbyshire, UK)	£30 (Weekdays, by arrangement.)	

These units are manufactured in the EU by SnolTherm (Umega Group, AB) to AML Instrument Ltd's specification. Final manufacturing, testing, localisation, customisations, addition of options and after-sale service are performed in the UK by AML Instruments Ltd.

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After Sales Service & Warranty

AML Instruments has been stocking and selling the SNOL range since 2008. We hold UK stock of a wide range of spares and accessories and can offer service and repairs at our factory if required at a later date. On-site service and basic repairs may be available subject to location and the nature of the repair. We also offer a range of on-site calibration services, see our website or contact us for more details.

Each unit has a 2 year return to base warranty against manufacturing defects from the date of purchase from AML Instruments. This covers normal use of the unit in accordance with its instruction manual. It does not cover excessive 'wear and tear' or rough handling. Failures or damage resulting from the process or its by-products (e.g. leaks, spills, blockages, contamination, corrosion, etc.) cannot be considered manufacturing defects and as such are not covered by the warranty.

On receipt of the unit it is important to check for any transport damage and report it to AML Instruments and note it on the carrier's paperwork. It is recommended to keep the original wooden packaging in case the unit ever needs returning.

Under the warranty any manufacturing defects will be rectified by AML Instruments as the agent of the manufacturer at no charge. 'Return to base' means the customer is responsible for return of the unit to AML Instruments' site (Derbyshire, UK) for assessment with a view to repairing under warranty. Or, if necessary, we can provide collection at a cost, provided the unit is suitably packaged. For any work performed that is solely covered by the warranty AML Instruments will provide return shipment of the unit within the UK and Republic of Ireland at no charge. Whilst AML Instruments stocks a range of spares and aims to resolve any warranty repairs quickly, typically within 3 – 8 working days, the warranty does not guarantee this nor any provision of a loan unit while the customer's unit is with us.

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Part of a range of thermal solutions from AML Instruments




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