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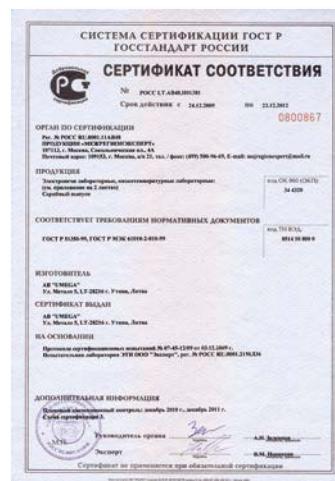
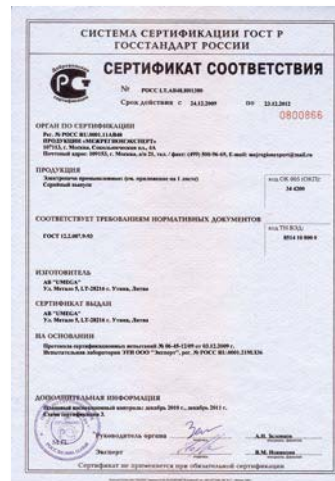
Thermal processing equipment for laboratories

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The JSC "Umega" SNOL department has been producing thermal processing equipment since 1960. The company designs and manufactures laboratory and industrial electric furnaces and ovens, as well as high temperature thermal insulation materials. The company pays particular attention to the product development by using advanced technologies and scientific progresses in order to meet individual user needs. Highly qualified personnel and premium materials result in high quality, reliability, and durability of our manufactured products.

SNOL products comply with European Union Directives LVD 2006/95/EC, MD 2006/42/EC, ECD 2004/108/EC, and RoHS 2002/95/EC; and therefore bear the CE Mark, and are also certified in Russia and Belarus, thermal insulation materials are certified by Det Norske Veritas. The company's Quality Management System is certified by Bureau Veritas Quality International in compliance with ISO 9001:2008 / LST EN ISO 9001:2008 standards.

JSC "Umega" runs subsidiaries: "SNOL – TERM" Ltd. in Russia, "SNOL Ukraine" Ltd. in Ukraine, and "SNOLBel" Ltd. in Belarus. The company exports a major part of its products (~90%), to markets in the European Union and the Commonwealth of Independent States, where the sales and service network has been developed.



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1. Low temperature electric ovens

1.1 Chamber ovens

1.1.1. Chamber ovens up to 200 °C

Economical low temperature electric ovens that are intended for the thermal processing of various materials and parts up to a temperature of 200 °C. The products can be used in scientific laboratories, educational institutions, medicine, and industry. Optional forced air circulation (only in model SNOL 200/200) assures an even temperature distribution throughout the chamber, and high quality thermal processing occurs quickly.

Basic model

- Chamber made of mild steel or stainless steel
- Natural or forced air circulation
- Hermetically sealed doors
- Microprocessor temperature controller (see page 14)
- Includes standard shelves
- High-quality, ecological thermal insulation material
- Low electric power usage for increased energy efficiency
- Short heating up/cooling down period
- High degree of accuracy
- Exterior painted with powder coating (RAL 7035)
- 1 year guarantee



SNOL 24/200 LSP01

Options

- Additional standard shelves
- Reinforced shelves
- Metal tray
- Reinforced bottom
- Digital timer
- Fan speed controller (for ovens with forced air circulation)
- Buzzer
- Over-temperature protection
- Data recorder
- Computer connection via RS232/RS-485/USB
- Calibration of temperature measurement system
- Oven exterior made of stainless steel
- Stand for supporting the oven
- Additional 1 year guarantee



SNOL 200/200 LSN11

| Model | Vol., l | T _{max} , °C | Chamber dimensions, mm | | | Overall dimensions*, mm | | | Power, kW | Voltage, V | Weigth, kg | Air flow | Number of shelves | | Chamber material | |
|---------------------|---------|-----------------------|------------------------|--------|--------|-------------------------|--------|--------|-----------|------------|------------|----------|-------------------|-----|------------------|------------|
| | | | Width | Length | Height | Width | Length | Height | | | | | sets | max | Stainless steel | Mild steel |
| Up to 200 °C | | | | | | | | | | | | | | | | |
| SNOL 24/200 LSP01 | 24 | 200 | 300 | 380 | 200 | 400 | 515 | 410 | 1 | 230 | 17 | ○ | 2 | 2 | ○ | ● |
| SNOL 200/200 LSP11 | 200 | 200 | 710 | 610 | 460 | 1040 | 780 | 775 | 2 | 230 | 77 | ● | 2 | 5 | ○ | ● |
| SNOL 200/200 LSN11 | 200 | 200 | 710 | 610 | 460 | 1040 | 780 | 775 | 2 | 230 | 77 | ● | 2 | 5 | ● | ○ |

1. Low temperature electric ovens

1.1.2. Chamber ovens up to 300 °C

A new range of laboratory ovens that are intended for the thermal processing of materials up to a temperature of 300 °C. Used for such processes as drying, heating, thermal testing, and aging in an air environment. Forced air circulation allows a homogenous temperature distribution to be achieved during all processes, which ensures optimal results.

Basic model

- Forced horizontal air circulation
- Valve control of air extraction (operated via front panel)
- Chamber made of stainless steel
- Hermetically closed doors
- Microprocessor-controlled thermoregulator (see page 14)
- Buzzer
- Protection against overheating
- Fan revolution controller
- Includes standard shelves
- High-quality, ecological thermal insulation material
- Low electric power usage
- Short heating up/cooling down period
- High degree of accuracy
- Exterior painted with powder coating (RAL 7035)
- 2 years guarantee

Options

- Economical version (Ec) without a fan speed controller and buzzer
- Supplemental shelves
- Reinforced shelves
- Metal tray
- Reinforced bottom
- Digital timer
- Data recorder
- Computer connection via RS232/RS-485/USB
- Calibration of temperature measurement system
- Furnace exterior made of stainless steel
- Table for supporting the furnace
- Process observation window



SNOL 60/300 LSN11



SNOL 420/300 LSN11

| Model | Vol., l | T _{max} , °C | Chamber dimensions, mm | | | Overall dimensions*, mm | | | Power, kW | Voltage, V | Weight, kg | Air flow | Number of shelves | | Chamber material | |
|---------------------|---------|-----------------------|------------------------|--------|--------|-------------------------|--------|--------|-----------|------------|------------|----------|-------------------|-----|------------------|------------|
| | | | Width | Length | Height | Width | Length | Height | | | | | sets | max | Stainless steel | Mild steel |
| Up to 300 °C | | | | | | | | | | | | | | | | |
| SNOL 20/300 LSN11 | 20 | 300 | 240 | 280 | 340 | 460 | 680 | 640 | 1 | 230 | 34 | • | 2 | 5 | • | o |
| SNOL 60/300 LSN11 | 60 | 300 | 380 | 380 | 420 | 600 | 760 | 720 | 2 | 230 | 50 | • | 3 | 7 | • | o |
| SNOL 120/300 LSN11 | 120 | 300 | 550 | 400 | 580 | 750 | 780 | 880 | 2,2 | 230 | 70 | • | 3 | 7 | • | o |
| SNOL 220/300 LSN11 | 220 | 300 | 730 | 500 | 620 | 930 | 880 | 915 | 4 | 230 | 102 | • | 3 | 7 | • | o |
| SNOL 420/300 LSN11 | 420 | 300 | 1000 | 500 | 860 | 1200 | 930 | 1200 | 6,2 | 400 | 155 | • | 3 | 7 | • | o |

1. Low temperature electric ovens

1.1.3. Chamber ovens up to 350 °C

Economical low temperature electric ovens that are intended for the thermal processing of various materials and parts up to a temperature of 350 °C. The products can be used in scientific laboratories, educational institutions, medicine, and industry.

Basic model

- Natural or forced air circulation
- Regulated air intake and extraction
- Chamber made of mild or stainless steel
- Hermetically closed doors
- Microprocessor-controlled thermoregulator (see page 14)
- Includes standard shelves
- High-quality, ecological thermal insulation material
- Low electric power usage
- Short heating up/cooling down period
- High degree of accuracy
- Exterior painted with powder coating (RAL 7035)
- 1 year guarantee



SNOL 67/350 LSN01

Options

- Supplemental shelves
- Reinforced shelves
- Metal tray
- Reinforced bottom
- Digital timer
- Buzzer
- Protection against overheating
- Data recorder
- Computer connection via RS232/RS-485/USB
- Calibration of temperature measurement system
- Furnace exterior made of stainless steel
- Table for supporting the furnace
- Additional 1 year guarantee



SNOL 58/350 LSP11

| Model | Vol., l | T _{max} , °C | Chamber dimensions, mm | | | Overall dimensions*, mm | | | Power, kW | Voltage, V | Weight, kg | Air flow | Number of shelves | | Chamber material | |
|---------------------|---------|-----------------------|------------------------|--------|--------|-------------------------|--------|--------|-----------|------------|------------|----------|-------------------|-----|------------------|------------|
| | | | Width | Length | Height | Width | Length | Height | | | | | sets | max | Stainless steel | Mild steel |
| Up to 350 °C | | | | | | | | | | | | | | | | |
| SNOL 58/350 LSN11 | 58 | 350 | 390 | 380 | 360 | 685 | 675 | 615 | 2 | 230 | 40 | ● | 3 | 7 | ● | ○ |
| SNOL 58/350 LSP11 | 58 | 350 | 390 | 380 | 360 | 685 | 675 | 615 | 2 | 230 | 40 | ● | 3 | 7 | ○ | ● |
| SNOL 67/350 LSN01 | 67 | 350 | 390 | 445 | 390 | 685 | 625 | 615 | 2 | 230 | 40 | ○ | 3 | 7 | ● | ○ |
| SNOL 67/350 LSP01 | 67 | 350 | 390 | 445 | 390 | 685 | 625 | 615 | 2 | 230 | 40 | ○ | 3 | 7 | ○ | ● |

1. Low temperature electric ovens

1.2 Multi-chamber ovens

Multi-chamber low temperature electric ovens that are intended for the thermal processing, drying, preliminary heating, and other thermal processes of various materials and parts up to a temperature of 200 °C. The products can be used in scientific laboratories, educational institutions, medicine, and industry. Forced air circulation allows a homogeneous temperature distribution to be delivered during all processes, which ensures optimal results.

Basic model

- Within the carcass, two or four chambers made of mild or stainless steel are installed
- Within each chamber, a fan and ventilation hatches are installed
- Forced horizontal air circulation
- Hermetically closed doors
- Microprocessor-controlled thermoregulators for every chamber (see page 14)
- Includes standard shelves
- High-quality, ecological thermal insulation material
- Low electric power usage
- Short heating up/cooling down period
- High degree of accuracy
- Exterior painted with powder coating (RAL 7035)
- 1 year guarantee

Options

- Supplemental shelves
- Reinforced shelves
- Metal tray
- Reinforced bottom
- Digital timer
- Fan revolution controller
- Buzzer
- Protection against overheating
- Data recorder
- Computer connection via RS232/RS-485/USB
- Calibration of temperature measurement system
- Furnace exterior made of stainless steel
- Table for supporting the furnace
- Additional 1 year guarantee



SNOL 4x80/200 LSN18



SNOL 2x240/200 LSN11

| Model | Vol., l | T _{max} , °C | Chamber dimensions, mm | | | Overall dimensions*, mm | | | Power, kW | Voltage, V | Weight, kg | Air flow | Number of shelves | | Chamber material | |
|----------------------|---------|-----------------------|------------------------|--------|--------|-------------------------|--------|--------|-----------|------------|------------|----------|-------------------|-----|------------------|------------|
| | | | Width | Length | Height | Width | Length | Height | | | | | sets | max | Stainless steel | Mild steel |
| SNOL 4x80/200 LSP18 | 4x80 | 200 | 500 | 400 | 400 | 1910 | 925 | 1950 | 24 | 400 | 440 | ● | 1x4 | 7x4 | ○ | ● |
| SNOL 4x80/200 LSN18 | 4x80 | 200 | 500 | 400 | 400 | 1910 | 925 | 1950 | 24 | 400 | 440 | ● | 1x4 | 7x4 | ● | ○ |
| SNOL 2x240/200 LSP11 | 2x240 | 200 | 500 | 400 | 1200 | 1500 | 960 | 1715 | 24 | 400 | 450 | ● | 2x2 | 7x2 | ○ | ● |
| SNOL 2x240/200 LSN11 | 2x240 | 200 | 500 | 400 | 1200 | 1500 | 960 | 1715 | 24 | 400 | 450 | ● | 2x2 | 7x2 | ● | ○ |

2. High temperature electric furnaces

2.1 Muffle furnaces with fiber-insulated chambers

High accuracy laboratory electric furnaces with fiber-insulated chambers that are intended for hardening, loosening, normalising, and other thermal processing up to a temperature of 1100 °C or 1300 °C. The furnaces include ceramic hearth plates. To eliminate gasses or smoke that are released during thermal processing, ventilation hatches and an exhaust system may be additionally installed in the products. The furnaces are an excellent fit for scientific laboratories, educational institutions, medicine, and industry.

Basic model

- One-piece chamber made of fiber thermal insulation
- Heating elements embedded in vacuum formed fiber (on models up to 1100 °C)
- Heating elements exposed on ceramic tubes (on models up to 1300 °C)
- Microprocessor-controlled thermoregulator (see page 14)
- Ceramic hearth plates
- High-quality, ecological thermal insulation material
- Low electric power usage
- Short heating up/cooling down period
- High degree of accuracy
- Exterior painted with powder coating (RAL 7035)
- 1 year guarantee

Options

- Process observation window (Ø 35mm) up to 1100 °C
- Fan-assisted chimney for air extraction
- Supplemental ceramic hearth plates
- Buzzer
- Protection against overheating
- Data recorder
- Computer connection via RS232/RS-485/USB
- Calibration of temperature measurement system
- Table for supporting the furnace
- Additional 1 year guarantee



SNOL 8,2/1100 LZM01



SNOL 6,7/1300 LSM01



SNOL 8,2/1100 LHM01

| Model | Vol., l | T _{max} °C | Chamber dimensions, mm | | | Overall dimensions, mm | | | Power, kW | Voltage, V | Weight, kg | Door opening | | |
|----------------------|---------|---------------------|------------------------|--------|--------|------------------------|--------|--------|-----------|------------|------------|--------------|----------|-----------|
| | | | Width | Length | Height | Width | Length | Height | | | | upwards | sideways | downwards |
| Up to 1100 °C | | | | | | | | | | | | | | |
| SNOL 3/1100 LHM01 | 3 | 1100 | 125 | 200 | 115 | 340 | 470 | 430 | 1,7 | 230 | 18 | ● | ○ | ○ |
| SNOL 8,2/1100 LHM01 | 8,2 | 1100 | 200 | 300 | 133 | 440 | 620 | 510 | 1,8 | 230 | 28 | ● | ○ | ○ |
| SNOL 8,2/1100 LSM01 | 8,2 | 1100 | 200 | 300 | 133 | 440 | 560 | 510 | 1,8 | 230 | 28 | ○ | ● | ○ |
| SNOL 8,2/1100 LZM01 | 8,2 | 1100 | 200 | 300 | 133 | 440 | 560 | 510 | 1,8 | 230 | 28 | ○ | ○ | ● |
| SNOL 13/1100 LHM01 | 13 | 1100 | 225 | 360 | 180 | 500 | 700 | 550 | 1,8 | 230 | 38 | ● | ○ | ○ |
| SNOL 22/1100 LHM01 | 22 | 1100 | 275 | 500 | 155 | 600 | 890 | 610 | 3 | 230 | 58 | ● | ○ | ○ |
| SNOL 39/1100 LHM01 | 39 | 1100 | 315 | 515 | 225 | 649 | 899 | 739 | 6 | 300 | 74 | ● | ○ | ○ |
| Up to 1300 °C | | | | | | | | | | | | | | |
| SNOL 6,7/1300 LSM01 | 6,7 | 1300 | 160 | 295 | 133 | 440 | 550 | 540 | 2,4 | 230 | 35 | ○ | ● | ○ |

2. High temperature electric furnaces

2.2 Chamber furnaces with fiber-insulated chambers

Highly accurate laboratory electric furnaces with chambers made of thermal insulation fiber plates. The products are intended for hardening, loosening, normalising, and other thermal processing up to a temperature of 1600 °C. To eliminate gasses or smoke that are released during thermal processing, ventilation hatches and an exhaust system may be supplementally installed in the products. The furnaces are an excellent fit for scientific laboratories, educational institutions, medicine, and industry.

Basic model

- Chamber made of fiber thermal insulation plates
- Vacuumized heating elements (up to 1100 °C)
- Heating elements in grooves (up to 1200 °C)
- Heating elements on tubes (up to 1300 °C)
- Exposed heat strips (up to 1600 °C)
- Microprocessor-controlled thermoregulator (see page 14)
- Ceramic hearth plates
- High-quality, ecological thermal insulation material
- Low electric power usage
- Short heating up period
- High degree of accuracy
- Exterior painted with powder coating (RAL 7035)
- 1 year guarantee

Options

- Process observation window (Ø 35mm) up to 1100 °C
- Fan-assisted chimney for forced air extraction
- Supplemental ceramic bottom plates
- Buzzer
- Digital timer
- Protection against overheating
- Data recorder
- Computer connection via RS232/RS-485/USB
- Calibration of temperature measurement system
- Table for supporting the furnace
- Additional 1 year guarantee



SNOL 30/1300 LSF01



SNOL 80/1100 LSF01



SNOL 40/1200 LSF01



SNOL 30/1100 LSF01



SNOL 8/1600 LSF01

| Model | Vol., l | T _{max} °C | Chamber dimensions, mm | | | Overall dimensions*, mm | | | Power, kW | Voltage, V | Weigh, kg | Door opening | | |
|----------------------|---------|---------------------|------------------------|--------|--------|-------------------------|--------|--------|-----------|------------|-----------|--------------|----------|-----------|
| | | | Width | Length | Height | Width | Length | Height | | | | upwards | sideways | downwards |
| Up to 1100 °C | | | | | | | | | | | | | | |
| SNOL 30/1100 LSF01 | 30 | 1100 | 300 | 450 | 300 | 640 | 800 | 830 | 3,4 | 230 | 100 | ○ | ● | ○ |
| SNOL 80/1100 LSF01 | 80 | 1100 | 300 | 450 | 600 | 740 | 880 | 1250 | 5,4 | 400 | 135 | ○ | ● | ○ |
| Up to 1200 °C | | | | | | | | | | | | | | |
| SNOL 40/1200 LSF01 | 40 | 1200 | 290 | 420 | 290 | 640 | 800 | 830 | 3,4 | 230 | 100 | ○ | ● | ○ |
| Up to 1300 °C | | | | | | | | | | | | | | |
| SNOL 30/1300 LSF01 | 30 | 1300 | 200 | 450 | 290 | 640 | 870 | 830 | 4,6 | 230 | 120 | ○ | ● | ○ |
| Up to 1600 °C | | | | | | | | | | | | | | |
| SNOL 8/1600 LSF01 | 8 | 1600 | 150 | 300 | 150 | 620 | 620 | 1420 | 8 | 400 | 170 | ○ | ● | ○ |

2. High temperature electric furnaces

2.3 Furnaces with ceramic chambers

Highly accurate laboratory electric furnaces with solid ceramic chambers. The products are intended for hardening, loosening, normalising and other thermal processing to a temperature of 1300 °C. The furnaces include ceramic bottom plates. To eliminate gasses or smoke that are released during thermal processing, ventilation hatches and an exhaust system may be supplementally installed in the products. The furnaces are an excellent fit for scientific laboratories, educational institutions, medicine and industry.

Basic model

- Solid ceramic chamber
- Partially exposed heating elements (in 1100 °C max. and 1300 °C max. models)
- Enclosed heating elements (in 900°C max. and 1200 °C max. models)
- Microprocessor-controlled thermoregulator (see page 14)
- Ceramic hearth plates
- High-quality, ecological thermal insulation material
- Low electric power usage
- High temperature inertness
- High degree of accuracy
- Exterior painted with powder coating (RAL 7035)
- 1 year guarantee



SNOL 7,2/1100 LSC01

Options

- Process observation window (Ø 35mm) up to 1100 °C
- Fan-assisted chimney for forced air extraction
- Supplemental ceramic hearth plates
- Buzzer
- Digital timer
- Protection against overheating
- Data recorder
- Computer connection via RS232/RS-485/USB
- Calibration of temperature measurement system
- Table for supporting the furnace
- Additional 1 year guarantee



SNOL 7,2/1300 LSC01

| Model | Vol., l | T _{max} °C | Chamber dimensions, mm | | | Overall dimensions, mm | | | Power, kW | Voltage, V | Weight, kg | Door opening | | |
|----------------------|---------|---------------------|------------------------|--------|--------|------------------------|--------|--------|-----------|------------|------------|--------------|----------|-----------|
| | | | Width | Length | Height | Width | Length | Height | | | | upwards | sideways | downwards |
| Up to 900 °C | | | | | | | | | | | | | | |
| SNOL 4/900 LSC01 | 4 | 900 | 120 | 295 | 100 | 440 | 560 | 500 | 3,7 | 230 | 55 | ○ | ● | ○ |
| SNOL 7,2/900 LSC01 | 7,2 | 900 | 200 | 300 | 130 | 440 | 575 | 540 | 3,3 | 230 | 50 | ○ | ● | ○ |
| SNOL 12/900 LSC01 | 12 | 900 | 210 | 300 | 180 | 560 | 700 | 740 | 4,5 | 230 | 120 | ● | ○ | ○ |
| SNOL 15/900 LSC01 | 15 | 900 | 210 | 410 | 160 | 560 | 800 | 740 | 6 | 400 | 130 | ● | ○ | ○ |
| Up to 1100 °C | | | | | | | | | | | | | | |
| SNOL 4/1100LSC01 | 4 | 1100 | 120 | 295 | 100 | 440 | 560 | 500 | 3,7 | 230 | 55 | ○ | ● | ○ |
| SNOL 7,2/1100 LSC01 | 7,2 | 1100 | 200 | 300 | 130 | 440 | 575 | 540 | 3,3 | 230 | 50 | ○ | ● | ○ |
| SNOL 12/1100 LSC01 | 12 | 1100 | 210 | 300 | 180 | 560 | 700 | 740 | 4,5 | 230 | 120 | ● | ○ | ○ |
| SNOL 15/1100 LSC01 | 15 | 1100 | 210 | 410 | 160 | 560 | 800 | 740 | 6 | 400 | 130 | ● | ○ | ○ |
| Up to 1200 °C | | | | | | | | | | | | | | |
| SNOL 4/1200LSC01 | 4 | 1200 | 120 | 295 | 100 | 440 | 560 | 500 | 3,7 | 230 | 55 | ○ | ● | ○ |
| SNOL 7,2/1200LSC01 | 7,2 | 1200 | 200 | 300 | 130 | 580 | 750 | 690 | 4 | 230 | 104 | ○ | ● | ○ |
| SNOL 12/1200LSC01 | 12 | 1200 | 210 | 300 | 180 | 560 | 700 | 740 | 4,5 | 230 | 120 | ● | ○ | ○ |
| SNOL 15/1200LSC01 | 15 | 1200 | 210 | 410 | 160 | 560 | 800 | 740 | 6 | 400 | 130 | ● | ○ | ○ |
| Up to 1300 °C | | | | | | | | | | | | | | |
| SNOL 4/1300LSC01 | 4 | 1300 | 120 | 295 | 100 | 440 | 560 | 500 | 3,7 | 230 | 55 | ○ | ● | ○ |
| SNOL 7,2/1300 LSC01 | 7,2 | 1300 | 200 | 300 | 130 | 580 | 750 | 690 | 4 | 230 | 104 | ○ | ● | ○ |
| SNOL 12/1300 LSC01 | 12 | 1300 | 210 | 300 | 180 | 560 | 700 | 740 | 4,5 | 230 | 120 | ● | ○ | ○ |
| SNOL 15/1300 LSC01 | 15 | 1300 | 210 | 410 | 160 | 560 | 800 | 740 | 6 | 400 | 130 | ● | ○ | ○ |

3. Other thermal processing equipment

3.1 Ashing furnaces

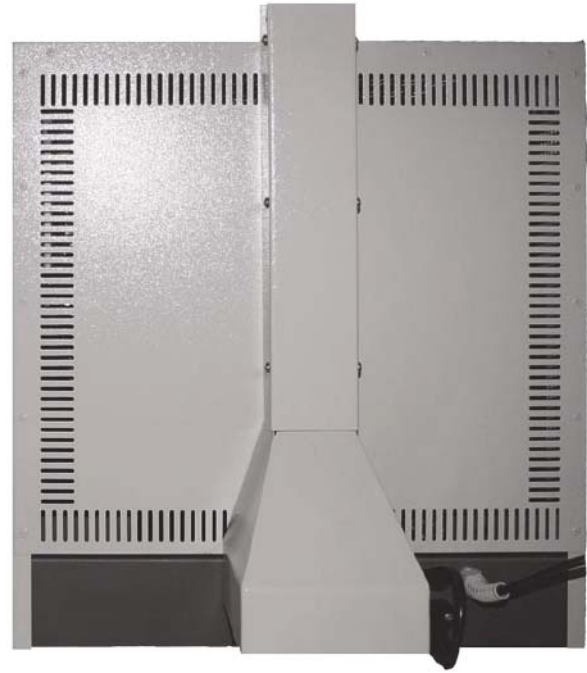
SNOL ashing furnaces are designed for ashing and burn off processes. Fan-assisted chimney permits to eliminate smokes from chamber during process time. Ashing process is possible with several types of furnaces: muffle furnace, fiber-insulated chamber furnaces and ceramic chamber furnaces. Ashing process is available in temperature scale of 900-1300°C. Chamber capacities various from 3 to 40 liters.

Basic model

- Fan-assisted chimney for smoke and humidity extraction
- Continuous air change in the chamber
- Microprocessor – controlled thermoregulator (see page 14)
- High quality, ecological thermal insulation material
- Low electric power usage
- Short heating up/cooling down period
- High degree of accuracy
- Exterior painted with powder coating (RAL 7035)
- 1 year guarantee.

Options

- Process observation window (Ø35mm) up to 1100 °C
- Supplemental ceramic hearth plates
- Buzzer
- Digital timer
- Protection against overheating
- Data recorder
- Computer connection via RS232/RS-485/USB
- Calibration of temperature measurement system
- Additional 1 year guarantee



| Model | T _{max} °C | Chamber | Chamber dimensions, mm | | | Overall dimensions, mm | | | Power, kW | Voltage, V | Weight, kg |
|----------------------|------------------------|---------|------------------------|--------|--------|------------------------|--------|--------|--------------|---------------|---------------|
| | | | Width | Length | Height | Width | Length | Height | | | |
| Up to 900 °C | | | | | | | | | | | |
| SNOL 4/900 LSC 21 | 900 | ceramic | 120 | 295 | 100 | 440 | 560 | 500 | 3,7 | 230 | 55 |
| SNOL 7.2/900 LSC 21 | 900 | ceramic | 200 | 300 | 130 | 440 | 575 | 540 | 3,3 | 230 | 50 |
| SNOL 12/900 LSC 21 | 900 | ceramic | 210 | 300 | 180 | 560 | 700 | 740 | 4,5 | 230 | 120 |
| SNOL 15/900 LSC 21 | 900 | ceramic | 210 | 410 | 160 | 560 | 800 | 740 | 6 | 400 | 130 |
| Up to 1100 °C | | | | | | | | | | | |
| SNOL 3/1100 LHM 21 | 1100 | muffle | 125 | 200 | 115 | 340 | 470 | 430 | 1,7 | 230 | 18 |
| SNOL 4/1100 LSC 21 | 1100 | ceramic | 120 | 295 | 100 | 440 | 560 | 500 | 3,7 | 230 | 55 |
| SNOL 7.2/1100 LSC 21 | 1100 | ceramic | 200 | 300 | 130 | 440 | 575 | 540 | 3,3 | 230 | 50 |
| SNOL 8.2/1100 LHM 21 | 1100 | muffle | 200 | 300 | 133 | 440 | 560 | 510 | 1,8 | 230 | 28 |
| SNOL 12/1100 LSC 21 | 1100 | ceramic | 210 | 300 | 180 | 560 | 700 | 740 | 4,5 | 230 | 120 |
| SNOL 13/1100 LHM 21 | 1100 | muffle | 225 | 360 | 180 | 500 | 700 | 550 | 1,8 | 230 | 38 |
| SNOL 15/1100 LSC 21 | 1100 | ceramic | 210 | 410 | 160 | 560 | 800 | 740 | 6 | 400 | 130 |
| SNOL 22/1100 LHM 21 | 1100 | muffle | 275 | 500 | 155 | 600 | 890 | 610 | 3 | 230 | 58 |
| SNOL 30/1100 LSF 21 | 1100 | muffle | 300 | 450 | 300 | 640 | 800 | 830 | 3,4 | 230 | 100 |
| SNOL 39/1100 LHM 21 | 1100 | muffle | 315 | 515 | 225 | 649 | 899 | 739 | 6 | 300 | 74 |
| Up to 1200 °C | | | | | | | | | | | |
| SNOL 4/1200 LSC 21 | 1200 | ceramic | 120 | 295 | 100 | 440 | 560 | 500 | 3,7 | 230 | 55 |
| SNOL 7.2/1200 LSC 21 | 1200 | ceramic | 200 | 300 | 130 | 580 | 750 | 690 | 4 | 230 | 104 |
| SNOL 12/1200 LSC 21 | 1200 | ceramic | 210 | 300 | 180 | 560 | 700 | 740 | 4,5 | 230 | 120 |
| SNOL 15/1200 LSC 21 | 1200 | ceramic | 210 | 410 | 160 | 560 | 800 | 740 | 6 | 400 | 130 |
| SNOL 40/1200 LSF 21 | 1200 | muffle | 290 | 420 | 290 | 640 | 800 | 830 | 3,4 | 230 | 100 |
| Up to 1300 °C | | | | | | | | | | | |
| SNOL 6.7/1300 LSM 21 | 1300 | muffle | 160 | 295 | 133 | 440 | 550 | 540 | 2,4 | 230 | 35 |
| SNOL 4/1300 LSC 21 | 1300 | ceramic | 120 | 295 | 100 | 440 | 560 | 500 | 3,7 | 230 | 55 |
| SNOL 7.2/1300 LSC 21 | 1300 | ceramic | 200 | 300 | 130 | 580 | 750 | 690 | 4 | 230 | 104 |
| SNOL 12/1300 LSC 21 | 1300 | ceramic | 210 | 300 | 180 | 560 | 700 | 740 | 4,5 | 230 | 120 |
| SNOL 15/1300 LSC 21 | 1300 | ceramic | 210 | 410 | 160 | 560 | 800 | 740 | 6 | 400 | 130 |
| SNOL 30/1300 LSF 21 | 1300 | muffle | 200 | 450 | 290 | 640 | 870 | 830 | 4,6 | 230 | 120 |

3. Other thermal processing equipment

3.2 Shaft furnaces

Top-loading (shaft) low and high temperature electric laboratory furnaces are intended for drying, preliminary heating, hardening, loosening, normalising and other thermal processing up to a temperature of 900 °C. The furnaces can be used in scientific laboratories, educational institutions, medicine and industry.

Basic model

- Chamber made of stainless steel (SNOL 75/550 LHN02)
- Solid ceramic chamber (SNOL 10/900 LXC02)
- Enclosed heating elements
- Doors open from the top
- Microprocessor-controlled thermoregulator (see page 14)
- Ceramic hearth plates (SNOL 10/900 LXC02)
- High-quality, ecological thermal insulation material
- Low electric power usage
- High temperature inertness
- High degree of accuracy
- Exterior painted with powder coating (RAL 7035)
- 1 year guarantee

Options

- Reinforced bottom (SNOL 75/550 LHN02)
- Supplemental ceramic hearth plates (SNOL 10/900 LXC02)
- Buzzer
- Digital timer
- Protection against overheating
- Data recorder
- Computer connection via RS232/RS-485/USB
- Calibration of temperature measurement system
- Table for supporting the furnace
- Additional 1 year guarantee



SNOL 75/550 LHN02



SNOL 10/900 LXC02

| Model | Vol., l | T _{max} , °C | Chamber dimensions, mm | | | Overall dimensions*, mm | | | Power, kW | Voltage, V | Weight, kg |
|-------------------|---------|-----------------------|------------------------|--------|--------|-------------------------|--------|--------|-----------|------------|------------|
| | | | Width | Length | Height | Width | Length | Height | | | |
| SNOL 10/900 LXC02 | 10 | 900 | 150 | 150 | 450 | 860 | 750 | 800 | 4,5 | 230 | 120 |
| SNOL 75/550 LHN02 | 75 | 550 | 340 | 390 | 550 | 870 | 660 | 850 | 6 | 400 | 100 |

3. Other thermal processing equipment

3.3 Tube ovens

High temperature horizontal tube furnaces intended for thermal processing up to a temperature of 1250 °C. The products can be used in scientific laboratories, educational institutions, medicine and industry.

Basic model

- Ceramic tube chamber
- Microprocessor-controlled thermoregulator (see page 14)
- High-quality, ecological thermal insulation material
- Low electric power usage
- Short heating up/cooling down period
- High degree of accuracy
- Exterior painted with powder coating (RAL 7035)
- 1 year guarantee

Options

- Buzzer
- Digital timer
- Protection against overheating
- Data recorder
- Computer connection via RS232/RS-485/USB
- Calibration of temperature measurement system
- Table for supporting the furnace
- Additional 1 year guarantee



SNOL 0,2/1250 LXC04

| Model | Vol., l | T _{max} °C | Chamber dimensions, mm | | Overall dimensions, mm | | | Power, kW | Voltage, V | Weight, kg |
|---------------------|---------|---------------------|------------------------|--------|------------------------|--------|--------|-----------|------------|------------|
| | | | Diameter | Length | Width | Length | Height | | | |
| SNOL 0,2/1250 LXC04 | 0,20 | 1250 | 35 | 190 | 500 | 550 | 525 | 3,7 | 230 | 38 |
| SNOL 0,3/1250 LXC04 | 0,25 | 1250 | 40 | 190 | 500 | 550 | 525 | 3,7 | 230 | 38 |
| SNOL 0,4/1250 LXC04 | 0,35 | 1250 | 48 | 190 | 500 | 550 | 525 | 3,7 | 230 | 38 |
| SNOL 0,5/1250 LXC04 | 0,50 | 1250 | 58 | 190 | 500 | 550 | 525 | 3,7 | 230 | 38 |

3.4 Protective atmosphere ovens

SNOL 78/300 is protective atmosphere oven, designed for protection of oxidation process of various metals in up to 300 °C temperature. The product can be used in scientific laboratories, educational institutions, medicine and industry.

Basic model

- Hermetic chamber
- Chamber made of stainless steel
- Available gas: nitrogen, argon.
- Flow-meter installed
- Reducer
- Microprocessor-controlled thermoregulator (see page 14)
- High-quality, ecological thermal insulation material
- Low electric power usage
- High degree of accuracy
- Exterior painted with powder coating (RAL 7035)
- 1 year guarantee



SNOL 78/300-1 LSN01



| Model | Vol., l | T _{max} °C | Chamber dimensions, mm | | | Overall dimensions*, mm | | | Power, kW | Voltage, V | Weight, kg |
|---------------------|---------|---------------------|------------------------|--------|--------|-------------------------|--------|--------|-----------|------------|------------|
| | | | Width | Length | Height | Width | Length | Height | | | |
| SNOL 78/300-1 LSN01 | 78 | 300 | 410 | 390 | 420 | 720 | 765 | 720 | 2,0 | 230 | 52 |

4. Control devices

4.1 Temperature controllers

SNOL products are equipped with high-precision digital microprocessor Omron or Eurotherm temperature controllers fitted with self-tuning and manual PID settings. Temperature measurement is supported by thermocouple. The customer can select a basic or programmable temperature controller which up to 32 programming segments (rate of temperature rise or decrease control, maintenance of preset temperature, automatic shutdown). A wide range of devices allows to select the most appropriate controller for your process.



Omron E5CC



Omron E5CN-HT



Eurotherm 3208



Eurotherm 3216

| Model | Programmable | Number of programs | Number of steps in program | Computer port | Control method | | Control signal | | |
|----------------|--------------|--------------------|----------------------------|---------------|----------------|--------|----------------|----------------|-------------------|
| | | | | | PID | On/Off | Type | | Number of outputs |
| | | | | | | | Relay | Voltage 12 VDC | |
| Omron E5CC | ○ | 1* | 2 | ● | ● | ● | ● | ● | 4 |
| Omron E5CN-HT | ● | 8 | 32 | ● | ● | ● | ● | ● | 4 |
| Eurotherm 3216 | ○ | 1* | 2 | ○ | ● | ● | ● | ● | 2 |
| Eurotherm 3208 | ● | 5 | 8 | ● | ● | ● | ● | ● | 2 |

* Basic 2-stage software

4.2 Touch screen Omron E5CN-HT V1.1_EN

Omron E5CN-HT V1.1_EN is touch screen panel for programming and controlling processes of furnaces. The main purpose of the device is to relieve, simplify and broaden control of the furnaces. This device also has representation of process data in graphics – text format on the display. The main window shows necessary data of working parameters, auxiliary windows are for observing processes in graphic format in live or remote data.

Main features

- Full and clear controlling of temperature controller
- Controlling mode choice: programmable task graph or main work with constant temperature
- Multiple language entry (ability to install necessary language)
- Data collection and export to computer via USB (e. g. Microsoft Excel format)



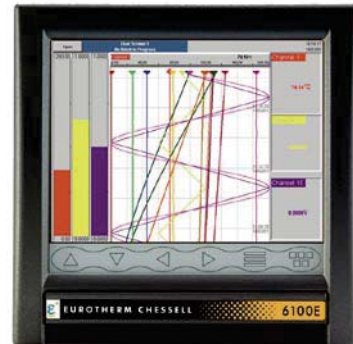
4. Control devices

4.3 Data recorder Eurotherm 6100E

Data recorder Eurotherm 6100 E is ideal for basic visualisation and recording requirements. The 6100E has a full color display and utilises touch screen technology for clear and intuitive configuration and operation. It further supports a USB port as standard to enable the use of a mouse, keyboard or bar code scanner. Data can be moved manually or automatically archived to multiple locations: removable media, network servers or the Eurotherm Review database on a PC. The recorder can easily be integrated into a larger system and data files can be transferred across the network.

Main features

- Advanced data security and archiving
- 5.5", 1/4 VGA, Color touch screen display
- Designed for network and stand alone use
- FTP client and server
- Live, remote data viewing and configuration
- 125 ms parallel sampling



4.4 Computer software SNOL V1.12

SNOL 12V.1 is computer software for data recording, viewing and configuring the temperature controller running your thermal treatment process. The software is designed for Windows operating system. Computer software allows simply run, review and display charts on thermal process temperatures and other settings.

Main features

- Up to 128 controllers connection
- Supports up to 4 computer ports
- Control of device parameters and programs via computer
- Live, remote data viewing and configuration
- Graphical representation of the data
- Data export to Microsoft Excel format
- Ability to observe the process in a distance by internet
- Connections RS-232 and RS-485.
- Multiple language entry (ability to install necessary language)



4.5 Timer Galaxy

The main function of the timer is remote start of the furnace. The timer works in real-time. During the operation, the output contact of the timer is operated according to the settings of the dial-switches. However, at all time it is possible to manually override this operation for each channel individually.

Main features

- Start and stop 24 hour / 7 day oven operation
- Stores up to 20 programs with up to 10 ON and 10 OFF events/day
- Manual 3-way override
- 16 Amp, 277 VAC resistive SPDT output contacts
- Reserve carryover: 3 years (Non-replaceable battery)
- Manual Daylight Time Changeover
- 3 languages option
- Available only with Omron devices

