

# Horizontal Furnace for High Process Performance

## centrotherm

equipment  
process  
solutions

### Processes

### Features and Benefits

## E 1550 Pilot Line Production Furnace

Designed for low cost productivity  
and furnace platform flexibility

The centrotherm E 1550 system is optimized to support the multiple process capability needs of a medium volume and high process performance user in a size safe, reliable and easy-to-maintain horizontal furnace platform.

The centrotherm design is outstanding for high performance, small footprint and low cost of ownership while offering high process flexibility required for multiple applications.

#### ► Atmospheric Processes

|   |                      |
|---|----------------------|
| Diffusion   | Curing               |
| BBr <sub>3</sub> -, B <sub>2</sub> H <sub>6</sub> -Doping | Activation Annealing |
| POCl <sub>3</sub> -Doping                                 | Silicidation         |
| H <sub>2</sub> -, N <sub>2</sub> -Annealing               | Nitridation          |
| Wet-, Dry-Oxidation [Option: DCE, HCl]                    | Contact Sintering    |

#### ► LPCVD Processes

|                    |   |
|--------------------|---|
| Polysilicon        | TOMCAT                                    |
| Polysilicon-Doping | LTO                                       |
| Silicon Nitride    | HTO                                       |
| Oxinitride         | SIPOS                                     |
| TEOS               | Low pressure deposition<br>of passivation |

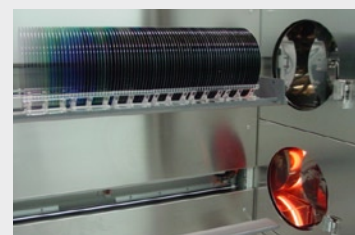
#### ► PECVD Processes

|             |               |                  |
|-------------|---------------|------------------|
| PECVD-Oxide | PECVD-Nitride | PECVD-Oxinitride |
|-------------|---------------|------------------|

- up to 4 quartz or SiC tube stacked reactor chambers
- process selectable chamber options available in 3 or 4 stack configurations
- clean automated boat loading for premium processing of small volume batch Si or alternate substrates
- advanced water cooling system: no thermal interference between different tubes, no consumption of clean room air



centrotherm E 1550



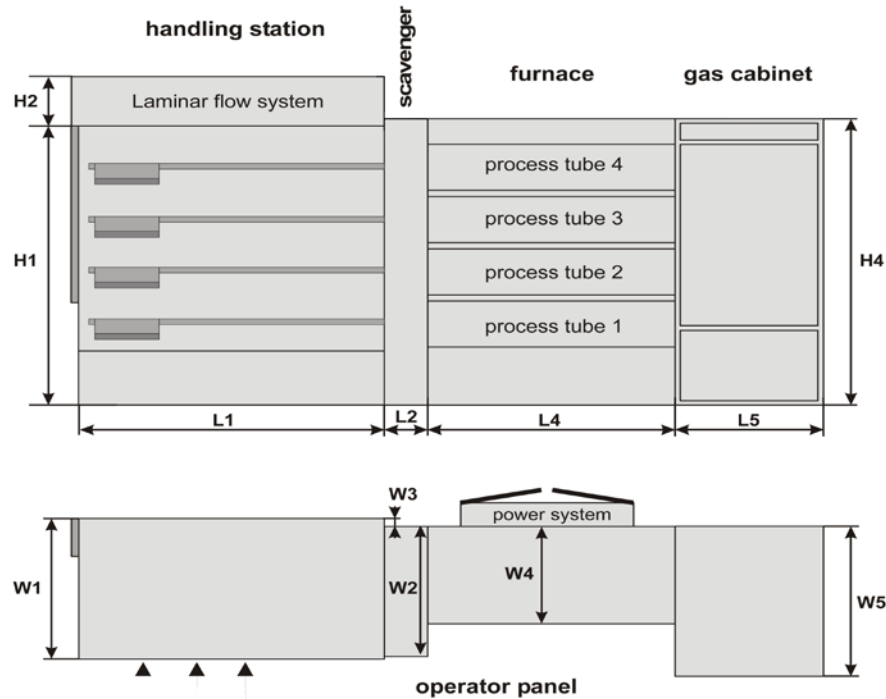
Clean automated boat loading for premium processing guaranteed

# Horizontal Furnace for High Process Performance

**centrotherm**

## E 1550 Pilot Line Production Furnace

### Dimensions



#### Vertical laminar flow

|     |                 |     |                 |     |                  |
|-----|-----------------|-----|-----------------|-----|------------------|
| L1: | 2200 mm [86.6"] | W1: | 1010 mm [39.8"] | H1: | 2680 mm [105.5"] |
| L2: | 350 mm [13.8"]  | W2: | 1225 mm [48.2"] | H2: | 520 mm [20.5"]   |
|     |                 | W3: | 145 mm [5.7"]   |     |                  |

#### Horizontal laminar flow

|     |                 |     |                 |     |                  |
|-----|-----------------|-----|-----------------|-----|------------------|
| L1: | 2220 mm [87.4"] | W1: | 1205 mm [47.5"] | H1: | 2680 mm [105.5"] |
| L2: | 350 mm [13.8"]  | W2: | 1225 mm [48.2"] | H2: | 470 mm [18.5"]   |
|     |                 | W3: | 340 mm [13.4"]  |     |                  |
| L4: | 1550 mm [61.0"] | W4: | 800 mm [31.5"]  | H4: | 2650 mm [104.3"] |
| L5: | 1200 mm [47.2"] | W5: | 1400 mm [55.1"] |     |                  |

Preliminary size | real dimensions in customized layout | customized dimensions upon request

### Technical Data

|                        |  |
|------------------------|--|
| Wafer sizes            | 150 mm [max. 100 wafers]   200 mm [max. 75 wafers]   |
| Heating system         | 3 or 5 zone 550 to 600 mm flat zone $\pm 0.5$ °C across flat zone  |
| Process temperature    | 200 °C to 1300 °C  |
| Possible process gases | H <sub>2</sub> , Ar, O <sub>2</sub> , N <sub>2</sub> O, N <sub>2</sub> , SiH <sub>4</sub> , NH <sub>3</sub> , B <sub>2</sub> H <sub>6</sub> , PH <sub>3</sub> , SiH <sub>2</sub> Cl <sub>2</sub> |
| Power consumption      | 80 kW [heating cassette with $\varnothing$ 290 mm at 1000 °C]  |
| Power supply           | 400 V, 115 A [system will be modified to country-specific power supply]  |
| Dry air                | 600 – 1000 kPa   |
| Cooling water          | 50 – 70 LPM  |
| Exhaust                | 400 m <sup>3</sup> /h  |

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thermal solutions

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### Options

| boat elevator and wafer handling automation

centrotherm reserves the right to make changes in the product specification at any time and without notice

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