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EBLab

Create radical innovations  
with ebeam

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ebeam

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# EBLab

## Compact, flexible, and easy to use

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Develop and optimize new products and processes with ebeam. The EBLab is as reliable as it is versatile. This fully shielded system enables experiments and quality control tests to be performed in the smallest of spaces without the need for additional infrastructure. The EBLab provides innovation teams with the tool they need to explore frontiers opened by easy access to electron beam processing.

The compact, sealed ebeam lamps used in the EBLab allow for a maximum beam energy of 300 keV and transport speeds of 3–30 m/min, allowing doses of up to 950 kGy in a single pass. Samples may be

as large as an A4 letter (216 mm × 279 mm) and up to 50 mm thick. With nitrogen inerting, the oxygen concentration can be as low as 50 ppm allowing researchers the freedom to work with oxygen-sensitive chemistries.



### User friendly

- Large screen (up to 19")

### Safe

- Fully shielded. No personal dosimeters needed

### Versatile

- Large, adjustable sample holder



### Powerful and flexible

- From 80 to 300 keV

### Real Science

- Detailed records of test parameters as printout or download

### Reliable

- Auto-K function and PLC control with memory function



### Convenient

- Compact, freestanding

### Maintenance-free

- No vacuum pump. No need to change foils, cathodes, or cables

### Worldwide

- First-class customer support

### ebeam Technologies

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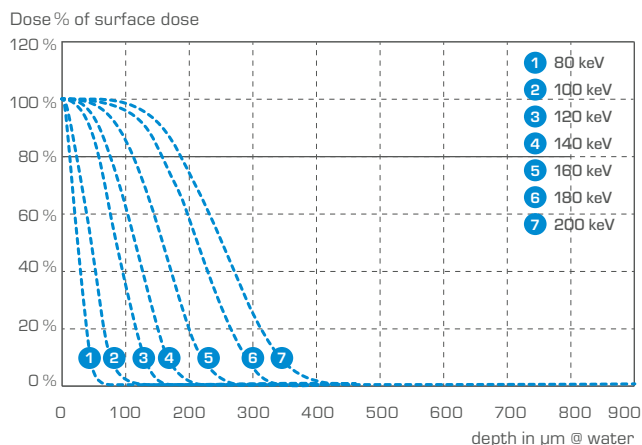
### ebeam Technologies

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# EBLab 200

## Electron penetration



## Features

|  |   |
|--|---|
| Voltage range                            | 80–200 keV<br>precision > 99 %  |
| Max. power<br>ebeam Lamp                 | 2.25 kW   |
| Max. beam current<br>(voltage dependent) | 20 mA,<br>precision > 99 %  |
| Sample transport speed                   | 3–30 m/min<br>(multiples of 3 m/min,<br>i.e., 3, 6, 9, ... 30 m/min)        |
| Sample size                              | DIN A4 (216×297 mm),<br>height-adjustable up to<br>50 mm (in steps of 5 mm) |
| Air gap                                  | 5–55mm (considering a<br>sample of height zero)                             |
| Oxygen measurement<br>device             | included  |
| Operating modes                          | with and without inerting gas   |
| Nitrogen inerting                        | residual oxygen<br>concentration adjustable<br>down to 50 ppm <sup>1</sup>  |
| ebeam Lamp                               | COMET Modell EBA-200/270  |
| Options                                  | ozone extraction kit<br>ozone filter<br>water cooler                        |

<sup>1</sup>50 ppm concentration only possible for N<sub>2</sub> with gas purity O<sub>2</sub> < 2 ppm

ebeam, a division of the Swiss technology company COMET, is a world leader in the industrial use of electron beam technology. ebeam explores, develops, and produces innovative engines for cost-effective and



## User interface

|                        |   |
|------------------------|---|
| Push buttons           | start cycle,<br>emergency stop                                |
| Warning lamps          | 2 lamps: red & green (other<br>colors available upon request) |
| Monitor screen         | 17"   |
| Data input             | keyboard  |
| Graphic User Interface | Windows-based   |

## Physical data

|                             |                        |
|-----------------------------|------------------------|
| Weight                      | ca. 1200 kg            |
| Min. floor loading          | 1000 kg/m <sup>2</sup> |
| Size (width, depth, height) | 1322, 1027, 1828 mm    |

## Radiation safety

|                        |                                     |
|------------------------|-------------------------------------|
| Fully shielded system  | Lead-lined painted steel<br>cabinet |
| Max. leakage radiation | < 1 µSv/h at 10 cm from<br>surface  |

## Electrical data

|  |                                 |
|--|---------------------------------|
| Input supply voltage                       | 3 PNE 400 V AC<br>(three phase) |
| Power consumption                          | max. 3.8 kVA                    |
| Recommendation external<br>circuit breaker | 3 × 16 A                        |

## Supply lines

|                                 |  |
|---------------------------------|--|
| Cooling water<br>min. flow rate | > 3 l/min  |
| Temperature                     | 25 °C to 35 °C<br>always > 3 °C above ambient<br>temperature |
| N <sub>2</sub> flow rate        | 100 l/min  |
| N <sub>2</sub> pressure         | min. 4 bar (at 100 l/min),<br>max. 6 bar                     |

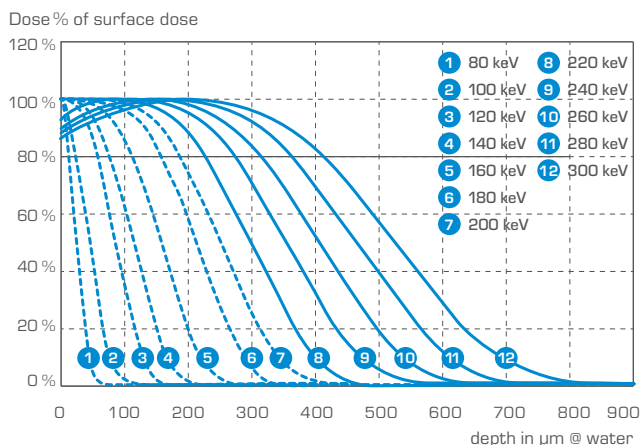
## Environmental conditions

|                     |             |
|---------------------|-------------|
| Ambient temp. range | 10 to 30 °C |
| Relative humidity   | 10 to 70 %  |

environmentally-friendly processes. ebeam technology has many uses, including the sterilization of packaging, curing of inks, synthesis of innovative new plastics, as well as the upcycling of biomass. Blue is the new green!

# EBLab 300

## Electron penetration



## Features

|  |   |
|--|---|
| Voltage range                            | 80–300 keV<br>precision > 99%   |
| Max. power<br>ebeam Lamp                 | 4.5 kW  |
| Max. beam current<br>(voltage dependent) | 20 mA,<br>precision > 99%   |
| Sample transport speed                   | 3–30 m/min  |
| Sample size                              | DIN A4 (216×297 mm),<br>height-adjustable up to<br>50 mm (in steps of 5 mm)         |
| Air gap                                  | 5–55mm (considering a<br>sample of height zero)                                     |
| Oxygen measurement<br>device             | included  |
| Operating modes                          | with and without inerting gas   |
| Nitrogen inerting                        | residual oxygen<br>concentration adjustable<br>down to 50 ppm <sup>1</sup>          |
| ebeam Lamp                               | COMET Modell EBA-300/270  |
| Options                                  | ozone extraction kit<br>ozone filter<br>water cooler<br>lamp window protection grid |

<sup>1</sup>50 ppm concentration only possible for N<sub>2</sub> with gas purity  
O<sub>2</sub> < 2 ppm



## User interface

|                        |                      |
|------------------------|----------------------|
| Push buttons           | emergency stop       |
| Warning lamps          | red lamp             |
| Monitor screen         | 19"                  |
| Data input             | touchscreen/keyboard |
| Graphic User Interface | Windows-based        |

## Physical data

|                             |                        |
|-----------------------------|------------------------|
| Weight                      | ca. 2500 kg            |
| Min. floor loading          | 2000 kg/m <sup>2</sup> |
| Size (width, depth, height) | 1760, 980, 1750 mm     |

## Radiation safety

|                        |                                     |
|------------------------|-------------------------------------|
| Fully shielded system  | Lead-lined painted steel<br>cabinet |
| Max. leakage radiation | < 1 µSv/h at 10 cm from<br>surface  |

## Electrical data

|  |                                 |
|--|---------------------------------|
| Input supply voltage                       | 3 PNE 400 V AC<br>(three phase) |
| Power consumption                          | max. 6 kVA                      |
| Recommendation external<br>circuit breaker | 3 × 16 A                        |

## Supply lines

|                                 |  |
|---------------------------------|--|
| Cooling water<br>min. flow rate | > 3 l/min  |
| Temperature                     | 25 °C to 35 °C<br>always > 3 °C above ambient<br>temperature |
| N <sub>2</sub> flow rate        | 100 l/min  |
| N <sub>2</sub> pressure         | min. 4 bar (at 100 l/min),<br>max. 6 bar                     |

## Environmental conditions

|                     |             |
|---------------------|-------------|
| Ambient temp. range | 10 to 30 °C |
| Relative humidity   | 10 to 70 %  |



ebeam received the Swiss Technology Award  
– the country's most important innovation and  
technology prize.