with integrated PowerLine NX

The CombiLine Advanced XL with integrated PowerLine NX is a complete marking workstation, which includes part handling and positioning equipment for total process automation. The optimized picosecond laser system provides a ready-to-use solution for permanent and corrosion free marking of stainless steel. The ultrashort pulse laser process doesn't introduce any significant heat and produces a high quality, high contrast mark, regardless of the viewing angle. The process is also highly suited for blackening anodized aluminum surfaces and is very interesting for manufacturers of high-end consumer goods. Implemented in a CombiLine Advanced XL COHERENT | ROFIN provides an innovative laser workstation for small- and medium-sized batches. With its robust, granite based construction, the worktable carries workpieces up to 100 kg. The optional rotary axis enables circumferential marking of cylindrical parts. Process visualization via an ergonomic TFT touch screen monitor contributes to maximum operating comfort. Furthermore, an observation window grants direct insight into the spacious operating area.

High-end marking system CombiLine Advanced XL
- Granite based, robust design
- Laser integration into machine frame
- Up to 3 linear axis with individual travel length, servo controlled
- Rotary axis with individual diameter for custom part clamping
- Robot interface and exhaust system optional

Ultrashort pulse marking rail PowerLine NX
- PowerLine Marking rail with Rapid NX source integrated
- Features full VLM performance, 3D free form capability
- Optional vision system available
- Fast focusing module, pilot laser and power measurement optional
- World's first picosecond laser with proven HALT/HASS design, engineering and QC practices

Applications
- Corrosion free Black Marking
- Nondestructive anodized layer marking
- Thermal minimized processing of surfaces
Technical data CombiLine Advanced XL and PowerLine NX

### CombiLine Advanced XL

- **Dimensions without support arm (W x D x H, mm):** approx. 1400 x 1800 x 2200
- **Machine weight (kg):** approx. 1500
- **Height of standing workplace (mm):** approx. 1200
- **Working height (mm):** 960 (standing workstation)
- **Max. workpiece weight (kg):** approx. 100
- **Required area & volume (W x D x H):** approx. 3000 x 2500 x 2200 mm & 7.5 m³
- **Linear axis travel distance (X/Y/Z, mm):** 820 / 300 / 350; Z lift dependent on X-position; dependent on lens, laser system and options
- **Door:** pneumatically and fully automatic
- **Door clear height (W x H, mm):** 1200 x 700
- **Display:** 19” TFT with keyboard mounted on swiveling support arm
- **Power supply:** 400 V (+/- 10%); 3P; N; PE 50/60 Hz
- **Max. power consumption:** 4 kW / 4.3 kW (@ 50 / 60 Hz)
- **Compressed air (bar):** 6
- **Ambient conditions:** non-condensing, non-corrosive, frost-proof
- **Air in E-area (m³/h):** 160

### PowerLine NX

- **Dimensions (L x W x H, mm):** approx. 460 x 330 x 180
- **Weight (kg):** approx. 28 (laser source)

#### Laser head
- **Wavelength (nm):** 1064
- **Laser power:** approx. 7 W @ 1 MHz
- **Pulse frequency:** 50 kHz – 1 MHz
- **Beam quality M²:** < 1.3
- **Ellipticity:** 0.85 < 1.15
- **Pulse Energy:**
- 7 µJ @ 1 MHz
- 50 µJ @ 50 kHz
- **Pulse width:** 10 to 15 ps
- **Peak power:** 7 W @ 1 MHz
- **Dimensions:** approx. 460 x 330 x 180
- **Weight (kg):** approx. 20

#### Supply unit (19”)
- **Dimensions:** 3U x 19”
- **Weight (kg):** approx. 20
- **Cooling:** water cooling chiller optional
- **Power supply:** 115 – 240 V +/- 10%; 50/60 Hz
- **Power consumption (W):** 100 – 240, < 500
- **Operating temperature (°C):** 15° – 30
- **Air flow 19” (m³/h):** 80