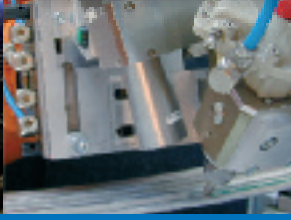


# WELCOME TO CLEAN-LASERSYSTEME GMBH

LASER SYSTEMS FOR INDUSTRIAL CLEANING,  
COATING REMOVAL & SURFACE PREPARATION



HIT THE SPOT WITH LIGHT.

 cleanLASER

***cleanLASER ... Laser cleaning technology industry leader***

*cleanLASER has focused exclusively on developing innovative devices specifically for precise cleaning and surface prep by harnessing the remarkable properties of laser power.*

*The company's highly qualified and skilled personnel start by understanding the customer's needs and priorities. Then, they tailor laser systems with state of the art and innovative technology - optimized for performance.*

*cleanLASER is the only global manufacturer of fiber-coupled, compact, mobile or stationary laser cleaning equipment, both automated and handheld, with up to 1000 Watt of laser power. Each laser system is built with special know-how gained from a successful history delivering the latest technology to leading companies around the world.*

*From ultra-mobile backpack mounted units to fully-automated robotic laser work cells, a wide selection of systems makes laser cleaning well-suited for use in many industries.*

**Cleaning with light – a green way to clean**

Laser cleaning safely removes coatings, contaminants, oxides production residues and more without chemicals, solvents, abrasives, water, or dust – no secondary waste.

The process immediately captures residues vaporized by the laser for virtually zero emissions. Energy consumption can be reduced by up to 87 %. For this gentle laser procedure cleanLASER was awarded the German Environmental Award, Europe's highest doped environmental award.



**Certifications & Quality Management**

High performance laser cleaning systems engineered with advanced technology for ease of use, safety, continuous duty, reliability & minimal maintenance. World-class products made in Germany.



### Products & Services

cleanLASER offers a wide-range of laser systems for industrial cleaning and surface treatments. A staff of highly trained personnel provide the customer dedicated technical support from initial testing to system selection, optimization, delivery, installation and beyond.

Using the highest quality materials and workmanship, each laser system is specially adapted for the intended application to ensure optimal performance and long-term customer satisfaction.

### Development & Application

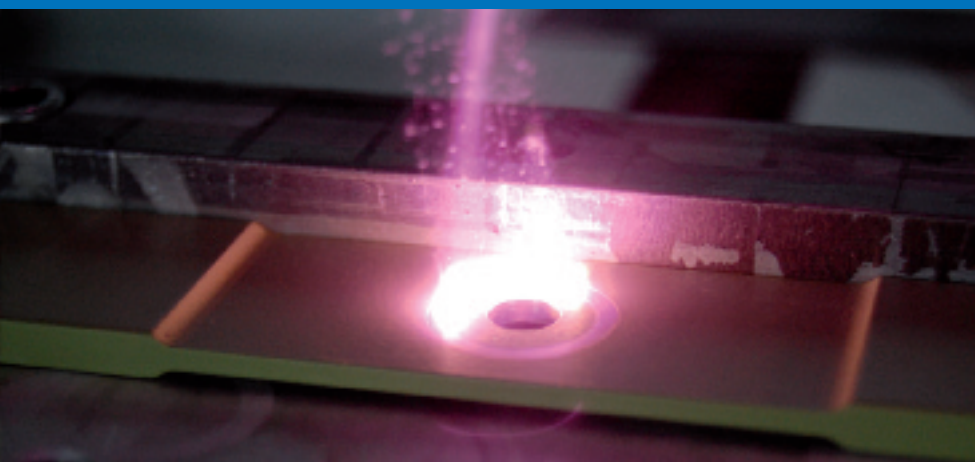
- Feasibility studies
- Process optimization
- Technical design
- Development of laser systems

### Production

- Modular laser cleaning & surface treatment systems - both mobile & stationary
- Wide-range of end-effectors, optics, work heads
- Process monitoring systems
- Manual, semi or fully automated laser systems

### Service & Support

- Highly qualified & experience technical support staff & laser scientists
- Prototype & pilot project development
- Job-shop capabilities
- Maintenance & service
- Technical & safety training



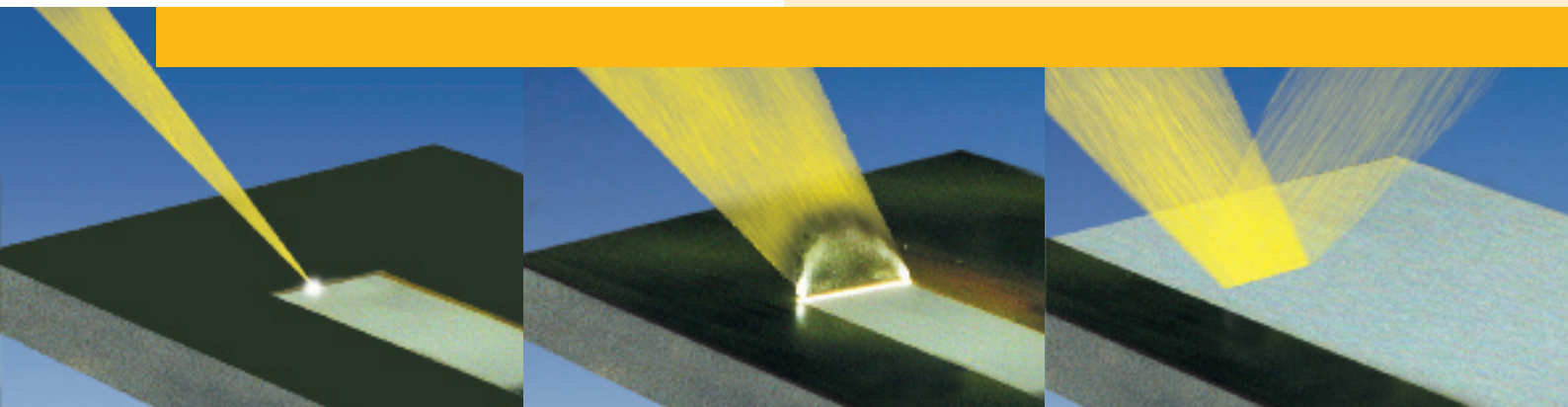
**How it works**

- A focused laser beam precisely vaporizes the target coating or contaminant.
- Powerful, very short, rapid and moving laser pulses produce micro-plasma bursts, shockwaves and thermal pressure resulting in sublimation and ejection of the target material.
- Process optimization of the laser beam produces maximum reaction with the target material for speed while, at the same time, does so safely and without harm to the base material.
- Metal surfaces are well-suited for many laser cleaning applications. Optimized beam settings will not metalurgically change or damage the laser treated surface. Only the coating, residue or oxide selected for removal is affected while the laser beam is adjusted not to react with the clean metal surface.

- Laser beam power density is accurately and easily adjusted to achieve cleaning results impossible with all other options.
- Laser vaporized material is captured at the source by a laser fume extractor filter unit – this means no emissions to contaminate the work area and beyond and no clean-up.

**Technology benefits**

- Fast set-up
- Easy to operate
- Quite
- No clean-up
- Leaves no residue
- High reliability
- Easy to automate
- Low operating costs
- Virtually maintenance-free
- No consumable media - no abrasives, chemicals, solvents
- Green process - no pollution
- Laser beam settings are precisely adjustable to optimum process speed & gentleness



*Rapid pulsed laser beam scans across treated surface*

*Target coating/contaminant is vaporized & residue is captured*

*Cleaning process stops when target material is removed*

### Industries served

Laser cleaning, de-coating and surface treatments systems deliver unique process improvements to a wide-range of industries. cleanLASER devices are used by innovative companies, large and small, for precise applications in:

- Aerospace
- Automotive
- Electronics
- Engineering
- Food processing
- Pharmaceutical
- Printing
- Rubber/plastic product molding
- Solar power
- Nuclear industry
- Shipyards - new construction & maintenance
- Historic restoration & conservation
- Research center

and many more ...



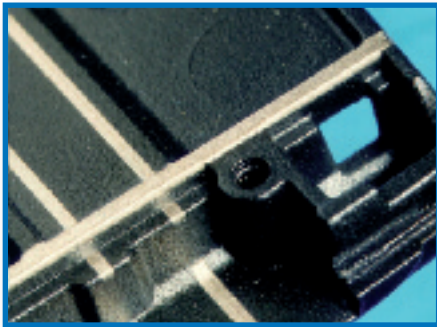
cleanLASER technology is adaptable to an ever-growing list of uses and users. Laser cleaning enables forward looking businesses the chance to improve their competitive position without compromising the environment.

### MARKETS/DISTRIBUTORS



**Application areas**

cleanLASER devices are suitable for use on many substrates. Laser cleaning can be used to treat metals, plastics, composites, ceramics, concrete, natural stone, glass and more.



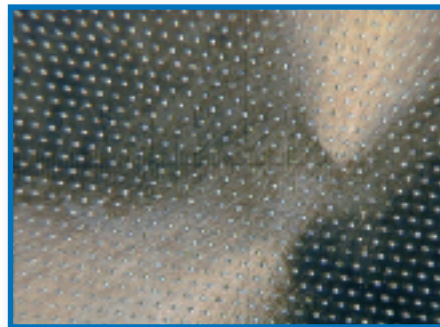
De-coating & selective stripping



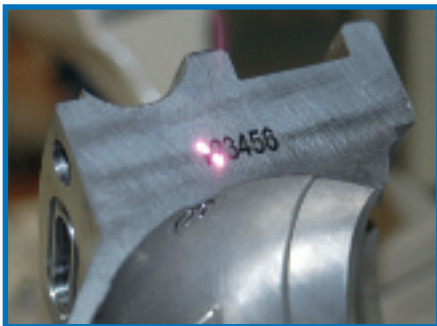
Pre-treatment to enhance adhesive bonding, coating activation



Mold cleaning  
Degreasing & oil removal



Oxide removal  
- ferrous/non-ferrous



Surface structuring



Contaminant & soot removal to restore original finishes

Please contact us to discuss your application. Discover what's possible when you clean with light and cleanLASER systems.

### cleanLASER systems

We make compact yet powerful laser systems. They range from ultra-portable, battery powered, backpack mounted units at 20 Watt to roll-around, high-performance, portable lasers at 1000 Watt of power for heavy-duty, production intensive applications.

Each system is engineered and made for industrial use. They are built for durability and minimal maintenance. Our units are built with a modular design, enabling them to be optimally configured to the customer's specific use and operated 24/7.

Available features include:

- Special design optics
- Laser systems including entire workstations
- Fully mobile or stationary variants
- Beam transmission via extremely flexible optical fiber cables available up to 50 meters long

#### LOW POWER: 12 - 100 Watt

CL 20 Backpack / CL 12 / CL 20 / CL 40  
CL 50 / CL 100



#### MID POWER: 150 - 600 Watt

CL 150 / CL 300 / CL 500 / CL 600



#### HIGH POWER: 1000 Watt

CL 1000



#### WORKSTATIONS & SPECIAL SYSTEMS

Manual, semi or fully automated



Advanced, innovative laser cleaning technology

Save time and money with laser precision – the most advanced and environmentally sound way to clean and de-coat.

awarded with  
**2010**  
Deutscher  
Umweltpreis



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