Adapt Laser Systems

Product Information

Technical Data

Innovative

Laser Surface Preparation Technology

Cleaning & De-Coating with Light!

Distributed By:
Dawson-Macdonald Co., Inc.
845 Woburn Street - Wilmington, MA 01887
Phone: (800) 556-4456 (toll free) Fax: (978) 657-8740
E-mail: info@dawson-macdonald.com
Website: www.dawson-macdonald.com
Laser Surface Preparation … Unmatched precision for a wide-range of tasks including….

Dust & Media-Free Coating Removal

De-Coating for Weld Inspections

Ferrous & Non-Ferrous Oxide Removal

Precision Mold Cleaning

Composite Roughening

Great for Weld Joint Prep
Especially Aluminum!
Adapt Laser Systems

Applications

Laser Removes Flash Rust

Laser Removes Oil & Grease

Selective Coating Removal

...many other applications!

Kansas City MO
Philadelphia PA
www.adapt-laser.com
Adapt Laser Systems

Company Overview

Leading Supplier of Advanced Laser Cleaning & Fume Extraction Equipment
Provider of innovative technology & business solutions designed to minimize the client's operating costs while maximizing productivity & profits. The company serves all of North America through offices in Kansas City, MO & Philadelphia PA.

Technology

Manual & Fully-Automated Laser Cleaning - Improve Productivity, Quality & Safety
Innovative, patented laser cleaning technology can significantly reduce costs, enhance process quality, improve safety & prolong the service life of high-value surfaces. Our lasers are designed & manufactured by Clean-Lasersysteme, GmbH in Aachen Germany; among the world's most experienced laser cleaning equipment scientist and engineers, leading the industry with unsurpassed innovation, performance and features not found elsewhere.

Reliability

Maximum Uptime
Excellent reliability in a variety of demanding applications with systems designed to operate 24/7 - We distribute & service only the best technology available. Outstanding quality is our standard product.

Service

Service-Oriented Technicians
We’re commitment to service excellence. Customers benefit from our resident technical expertise in surface preparation, industrial coating application & cleaning technology, with valuable know-how to identify the most cost-effective option. Laser cleaning specialists; we provide complete systems with integrated turnkey solutions.

Products

Laser Cleaning Systems
Cutting-edge laser technology for industrial surface treatments, cleaning & paint removal applications. Portable, stationary, manual, fully-automated and robotic interface laser systems remove contaminants, production residue & coatings without damaging critical substrates. Laser cleaning combines ease of operation, versatility, precision, & power with the lowest operating cost of all industrial cleaning methods.

For details see our Laser Cleaning Systems Brochure

Laser Fume Extraction Systems
Unique high-performance units, designed to effectively capture particles & filter fumes from applications such as laser cutting, marking, engraving, welding & cleaning as well as to remove fumes from soldering & solvent ink printers. Powerful yet portable fume extraction units feature ultra-high vacuum & airflow for outstanding performance with industrial maintenance-free turbines, full digital controls, cost-saving filter systems & more.

For details see our Fume & Particle Extractors Brochure

ADAPT LASER SYSTEMS LLC
www.adapt-laser.com
www.laserfilter.com
PO Box 232, East Texas, PA 18046, Phone: 610-395-8110
2615 Holmes Street, Kansas City MO 64108, Phone: 816-531-7402
Our laser systems’ patented technology distributes thousands of focused laser pulses per second onto the contamination layer. Powerful single laser beam pulses are linearly deflected and placed adjacent to each other. Most of the laser energy is absorbed by the surface layer, transformed into plasma causing shock waves that crack and decompose the contaminant layer which thereby disperses thermal energy. Contaminants are vaporized thus removing them effectively from the substrate. The higher the laser energy absorption factors of the target coating/contaminant, the faster the process.

The substrate material, unlike the contaminations, normally does not absorb, but rather reflects laser beam energy. Once a reflective substrate material has been reached, the laser cleaning process automatically stops. Due to typically high reflection factor, metallic surfaces are especially suitable for laser cleaning. The substrate is not mechanically or thermally damaged by the cleaning process.

An integrated filter unit, with a HEPA and a gas filter, effectively extracts ablated contaminants at the source, such as vaporized coating fumes and particles, consisting mainly of ash.
Model: CL 20™ - Laser Cleaning & Marking System

Description: Compact laser for the precise cleaning of sensitive parts with optional laser marking capability. This unit features a quiet, air-cooled, solid-state diode pumped, q-switched pulsed fiber laser with an average laser power up to 20 watts, excellent beam quality and focal distance up to 500mm. Laser cleaning is accomplished with a versatile 1D or 2D handheld optic connected to the power unit by a flexible fiber-optic cable. The optional laser marking system includes a 2D optic and a PC for the precise application of barcodes, dot matrix and bitmap images. The CL 20QF runs conveniently on 110 volt power supply.

Uses: Laser marking and precise cleaning, restoration, removal of: paint, coatings, contaminants, production residue, oil, grease, oxides and more without damaging sensitive substrates. Laser can be used on metal - steel, aluminum, copper, bronze in addition to natural stone, concrete, wood, glass and plastic (always test first). Laser cleaning offers a safe and environmentally responsible technique to clean challenging high-value surfaces in-situ without abrasion, water or chemicals. Laser cleaning is ideal for applications in conservation, historic restoration, manufacturing, automotive, aerospace, defense, pharmaceutical, bakery, food processing, electronics and many other fields. When used with an appropriate fume extractor & filter setup, laser coating removal and surface cleaning can provide an effective means to control CrVI exposure.
Options

**Air Filtration-Fume Extractor**
Captures and eliminates potentially hazardous process vapors/dust, protects the lasers’ optics and helps keep the workstation clean. We offer compact, mobile and stationary fume extractors with HEPA filtration, activated carbon and special pre-filters in a range of sizes to meet almost any requirement.

**Integrated laser pointing system**
Provides targeting laser emitter for cleaning and marking with extreme precision

For production intensive industrial applications, a wide-range of sizes and special designs for stationary, remote-controlled, robotic interface. High-power laser cleaning systems are also available.

Safety
Carefully review and follow all operating instructions and applicable safety rules/regulations when using the device.

Technical Data

<table>
<thead>
<tr>
<th>Model: CL 20</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Laser type</td>
<td>Q-switched pulsed diode pumped fiber laser</td>
</tr>
<tr>
<td>Laser class</td>
<td>IV</td>
</tr>
<tr>
<td>Beam source power</td>
<td>20 watts</td>
</tr>
<tr>
<td>Wavelength 106</td>
<td>2 ±2nm</td>
</tr>
<tr>
<td>Focal distance</td>
<td>Up to 20 inches (f=500mm)</td>
</tr>
<tr>
<td>Beam width</td>
<td>Adjustable, 89mm w/f=250mm aperture lens</td>
</tr>
<tr>
<td>Cooling system</td>
<td>Internal air-cooled</td>
</tr>
<tr>
<td>Fiber optic cable length</td>
<td>Up to 4m</td>
</tr>
<tr>
<td>Power supply</td>
<td>110 volt</td>
</tr>
<tr>
<td>Maximum power consumption</td>
<td>400 W/hr</td>
</tr>
<tr>
<td>Min./Max ambient operating temperature</td>
<td>45° / 95°F</td>
</tr>
<tr>
<td>Humidity 1</td>
<td>0-95%</td>
</tr>
<tr>
<td>Size - CL 20</td>
<td>Approx. 19in (w) x 25.5in (d) x 7in (h)</td>
</tr>
<tr>
<td>Weight -CL 20QF</td>
<td>28 lbs (laser source only)</td>
</tr>
</tbody>
</table>

*Due to on-going improvements, technical specifications & equipment appearance subject to change without notice*

Technical Support
Customer support is available from knowledgeable specialists to match the best laser system for your needs. Contact us to talk about testing options or to arrange an on-site laser demonstration and technical presentation.

Availability
Approximately 10 weeks

Price
Detailed quotations provided upon request. Our team works closely to help customers select the most cost-effective model and accessories; optimized specifically for each application.

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Website: www.dawson-macdonald.com

Kansas City MO  
Philadelphia PA  
www.adapt-laser.com

Form:CL20MKG708
Model: CL 20QF™ - Portable Laser Cleaning Device  
CL 20QF-BP™ - Backpack Laser Cleaning Device

Description: The most compact, lightweight, and portable laser cleaning unit available, designed to deliver both mobility and performance for a wide range of applications. It features a quiet operating, state-of-the-art, air-cooled, q-switched pulsed, diode pumped fiber laser with an average laser power of 20 watts, excellent beam quality and focal distance up to 500mm. Laser cleaning is accomplished with a versatile handheld optic connected to the power unit by a flexible 4 meter fiber-optic cable. Fast setup and easy to operate, laser cleaning quickly treats and restores surfaces at the lowest operating cost of all industrial cleaning methods. The CL 20QF runs conveniently on 110 volt power supply and is available with an optional battery pack for cordless operation.

Model CL 20QF-BP couples all the features above with maximum mobility through its innovative backpack design. When used with the battery pack option, this laser moves freely with the operator, around the work area and to remote locations, unencumbered by power cords.

Uses: Precise cleaning, restoration, removal of: paint, coatings, contaminants, production residue, oil, grease, oxides and more without damaging sensitive substrates. Laser can be used on metal - steel, aluminum, copper, bronze in addition to natural stone, concrete, wood, glass and plastic (always test first). Laser cleaning offers a safe and environmentally responsible technique to clean challenging hi gh-value surfaces in situ without abrasion, water or chemicals. Laser cleaning is ideal for applications in conservation, historic restoration, manufacturing, automotive, aerospace, defense, pharmaceutical, bakery, food processing, electronics and many other fields. When used with appropriate fume extractor & filter setup, laser coating removal and surface cleaning can provide an effective means to control CrVI exposure.

Kansas City MO  
Philadelphia PA  
www.adapt-laser.com
Options

Air Filtration-Fume Extractor
Captures and eliminates potentially hazardous process vapors/dust, protects the lasers’ optics and helps keep the workstation clean. We offer compact, mobile and stationary fume extractors with HEPA filtration, activated carbon and special pre-filters in a range of sizes to meet almost any requirement.

Integrated laser pointing system
Provides targeting laser emitter for cleaning with extreme precision

Battery pack module
Provides on-the-go power supply for the convenience and mobility of cordless laser cleaning

For production intensive industrial applications, a wide-range of sizes and special designs for stationary, remote-controlled, robotic interface. High-power laser cleaning systems are also available.

Safety
Carefully review and follow all operating instructions and applicable safety rules/regulations when using the device.

Technical Data

<table>
<thead>
<tr>
<th>Model: CL 20QF &amp; CL 20QF-BP*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laser type</td>
</tr>
<tr>
<td>Laser class</td>
</tr>
<tr>
<td>Beam source power</td>
</tr>
<tr>
<td>Wavelength 106</td>
</tr>
<tr>
<td>Focal distance</td>
</tr>
<tr>
<td>Beam width</td>
</tr>
<tr>
<td>Cooling system</td>
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<tr>
<td>Fiber optic cable length</td>
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<tr>
<td>Power supply</td>
</tr>
<tr>
<td>Maximum power consumption</td>
</tr>
<tr>
<td>Min./Max ambient operating temperature</td>
</tr>
<tr>
<td>Humidity 1</td>
</tr>
<tr>
<td>Size - CL 20QF</td>
</tr>
<tr>
<td>Weight -CL 20QF</td>
</tr>
<tr>
<td>Weight -CL 20QF-BP</td>
</tr>
</tbody>
</table>

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Technical Support
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Availability
Approximately 10 weeks

Price
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Website: www.dawson-macdonald.com

Kansas City MO
Philadelphia PA
www.adapt-laser.com
Model: CL 150™ - Mobile Laser Cleaning Unit

Description: A state-of-the-art 150watt Nd:YAG, q-switch, diode-pumped laser cleaning unit with an ultra-compact full metal resonator designed for mobility and a wide-range of applications. It produces a high quality laser beam with a maximum power output of 160 kW per pulse, a beam width up to 3 inches and a 6 to 10 inch focal distance. Laser cleaning is accomplished by handheld or fixed optics, connected to the power unit by a heavy-duty yet flexible 30 foot fiber-optic cable (available up to 150 feet long). It provides reliable performance with a diode module rated for over 10,000 hours while requiring minimum maintenance. Digital controls with self-diagnostic features make this laser very easy to operate and adjust for optimal results in many applications. The CL 150 is available with a beam switch for applications that involve both large flat surfaces and those with complex geometry. The unit is available in either a mobile or workstation version.

Optical End-Effectors:
The CL 150 can be equipped with an OSH 50L, Stylus or both to provide maximum laser de-coating and cleaning flexibility. The OSH 50L features a closed loop scanner with an integral suction channel to cool the optics’ critical components and remove fumes and particles to a modular air filter unit. The compact Stylus optic is designed for high precision cleaning in confined and hard access areas with its small size and integrated swivel joint. Both optics feature easily adjustable controls for all laser parameters such as beam width, pulse frequency and scan frequency. With the beam switch option, the operator can immediately change from one optic to the other by simply turning a switch.

Options for the OSH 50 L include:
- Motorized nozzle attachment
- Roller nozzle
- Safety distance sensor
- Assorted lens packages for special applications

Options for the Stylus include:
- Water-cooling for continuous hot surface applications
- Safety distance sensor
- Assorted lens packages for special applications

Uses: Ideal for precise cleaning, restoration, removal of - paint, coatings, contaminants, production residue, oil, grease, oxides and more without damaging sensitive substrates. Laser can be used on metal - steel, aluminum, copper, bronze in addition to natural stone, concrete, wood and plastic (always test first). Laser cleaning offers a safe and environmentally responsible technique to clean challenging, high-value surfaces in-situ without abrasion, water or chemicals. Laser cleaning is ideal for applications in manufacturing, construction, conservation, historic restoration, automotive, aerospace, defense, pharmaceutical, bakery, food processing, electronics and many other fields. When used with appropriate fume extractor & filter setup, laser coating removal and surface cleaning can provide an effective means to control CrVI exposure.
Accessories

Air Filtration & Fume Extractor
This accessory is required for optic cooling (except on water-cooled systems) as well as to capture and eliminates potentially hazardous process vapors/dust, protect the lasers’ optics and help keep the workstation clean.
Adapt Laser Systems has fume extractors in a range of sizes matched to the application requirements.

Options
Available options for the CL 150 include, choice of optic, dual optic beam switch, water-cooling, robotic interface optic, additional fiber-optic cable up to 150 feet and more.

Please consult with Adapt Laser Systems regarding accessories, options and special designs for stationary, fully automated and remote-controlled laser cleaning systems.

Safety
Carefully review and follow all operating instructions and applicable rules/regulations when using the device.

Technical Data

<table>
<thead>
<tr>
<th>Model: CL 150</th>
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<tbody>
<tr>
<td>Laser type</td>
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<tr>
<td>Laser class</td>
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<tr>
<td>Average laser power</td>
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<tr>
<td>Peak pulse power</td>
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<tr>
<td>Wavelength 106</td>
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<tr>
<td>Pulse frequency</td>
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<td>Focal distance</td>
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<tr>
<td>Beam width</td>
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<tr>
<td>Beam diameter</td>
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<tr>
<td>Cooling system</td>
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<tr>
<td>Fiber optic connection cable length</td>
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<tr>
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<tr>
<td>Power consumption</td>
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<tr>
<td>Size (L x W x H)</td>
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<td>Weight</td>
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Technical Support
Adapt Laser Systems has knowledgeable specialists dedicated to understanding your objectives and optimizing your laser systems’ performance. Contact us to talk about testing options or to arrange an on-site laser demonstration.

Availability
Typically 15 weeks

Price
Detailed quotations provided upon request. Adapt Laser Systems services all of North America and works closely to help customers select the most cost-effective model and accessories; optimized specifically for each application.

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Website: www.dawson-macdonald.com

Kansas City MO
Philadelphia PA
www.adapt-laser.com
Model: CL 300™ - Mobile Laser Cleaning Unit

Description: A state-of-the-art, powerful 300 watt Nd:YAG, q-switch, diode-pumped laser cleaning unit with an ultra-compact full metal resonator designed for mobility and a wide-range of applications. It produces a high-quality laser beam with a maximum power output of 230kW per pulse, a beam width up to 3 inches and a 6 to 10 inch focal distance. Laser cleaning is accomplished by handheld or fixed or optics, connected to the power unit by a heavy-duty yet flexible 30 foot fiber-optic cable (available up to 150 feet long). It provides reliable performance with a diode module rated for over 10,000 hours while requiring minimum maintenance. Digital controls with self-diagnostic features make this laser very easy to operate and adjust for optimal results in many applications. The CL 300 is available with a beam switch for applications that involve both large flat surfaces and those with complex geometry. This mobile or workstation version.

Optical End-Effectors:
The CL 300 can be equipped with either an OSH 50L, Stylus or both to provide maximum laser de-coating and cleaning flexibility. The OSH 50L features a closed loop scanner with an integral suction channel to cool the optics’ critical components and remove fumes and particles to a modular air filter unit. The compact Stylus optic is designed for high precision cleaning in confined and hard access areas with its small size and integrated swivel joint. Both optics feature easily adjustable controls for all laser parameters such as beam width, pulse frequency and scan frequency. With the beam switch option, the operator can immediately change from one optic to the other by simply turning a switch.

Options for the OSH 50 L include:
- Motorized nozzle attachment
- Roller nozzle
- Safety distance sensor
- Assorted lens packages for special applications

Options for the Stylus include:
- Water-cooling for continuous hot surface applications
- Safety distance sensor
- Assorted lens packages for special applications

Uses: Ideal for precise cleaning, restoration, removal of - paint, coatings, contaminants, production residue, oil, grease, oxides and more without damaging sensitive substrates. Laser can be used on metal - steel, aluminum, copper, bronze in addition to natural stone, concrete, wood and plastic (always test fire first). Laser cleaning offers a safe and environmentally responsible technique to clean challenging, high-value surfaces in-situ without abrasion, water or chemicals. Laser cleaning is ideal for applications in manufacturing, construction, historic restoration, automotive, aerospace, defense, pharmaceutical, bakery, food processing, electronics and many other fields. When used with appropriate fume extractor & filter setup, laser coating removal and surface cleaning can provide an effective means to control CrVI exposure.
Accessories

Air Filtration & Fume Extractor
This accessory is required for optic cooling (except on water-cooled systems) as well as to capture and eliminates potentially hazardous process vapors/dust, protect the lasers’ optics and help keep the workstation clean.
Adapt Laser Systems has fume extractors in a range of sizes matched to the application requirements.

Options
Available options for the CL 300 include choice of optic, dual optic beam switch, water-cooling, robotic interface optic, additional fiber-optic cable up to 150 feet and more.

Please consult with Adapt Laser Systems regarding accessories, options and special designs for stationary, fully automated and remote-controlled laser cleaning systems.

Safety
Carefully review and follow all operating instructions and applicable rules/regulations when using the device.

Technical Data

<table>
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<th>Model: CL 300</th>
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<tbody>
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<td><strong>Laser type</strong></td>
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<td><strong>Power supply</strong></td>
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<tr>
<td><strong>Power consumption</strong></td>
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<tr>
<td><strong>Size (L x W x H)</strong></td>
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<td><strong>Weight</strong></td>
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Availability
Typically 15 weeks

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Website: www.dawson-macdonald.com

Kansas City MO
Philadelphia PA
www.adapt-laser.com
Model: **CL 300™ - Mobile Laser Cleaning Unit with Dual Optics**

Description: A dual optic, state-of-the-art, powerful 300watt Nd:YAG, q-switch, diode-pumped laser cleaning unit with an ultra-compact full metal resonator designed for versa tility, mobility and efficiency in a wide range of applications. It features two styles of cleaning tools to optimize the laser’s effectiveness and ease of use in either easy or hard-access locations. At the press of a button, the laser switches from a too I optimized for large flat surface to a second laser tool made for applications that involve fine detail or high-precision geometry. Both tools connected to the power unit by a heavy-duty yet flexible 30 foot fiber-optic cable (up to 150 feet). The power source produces a high-quality laser beam with a maximum power output of 230kW per pulse, a beam width up to 3 inches and a 6 to 10 inch focal distance. It provides reliable performance with a diode module rated for over 10,000 hours while requiring minimum maintenance.

Digital controls with self-diagnostic features make this laser very easy to operate and adjust for optimal results in many applications.

**Optical End-Effectors:**
The CL 300 B/S is equipped with two (2) laser tools: the OSH 50L end effector and a Stylus type. One laser with beam delivery to two independent, special purpose end effectors maximizes application flexibility and efficiency. The OSH 50L is well-suited for laser treating flat areas and including a roller nozzle attachment ease of use. It features a closed loop scanner with an integral suction channel to immediately capture fumes and particles via a modular air filter unit. The compact Stylus optic is made for precision surface treatments in confined and hard access areas. It’s small size and includes an integrated swivel joint. Both optics feature easily adjustable controls for all laser parameters such as beam width, pulse frequency and scan frequency. The beam switch allows the operator to immediately change from one optic to the other by simply pushing a button.

**OSH 50 L options include:**
- Motorized nozzle attachment
- Roller nozzle
- Safety distance sensor
- Assorted lens packages for special applications

**Stylus options include:**
- Water-cooling for continuous hot surface applications
- Safety distance sensor
- Assorted lens packages for special applications

**Uses:** Ideal for precise cleaning, restoration, removal of - paint, coatings, contaminants, production residue, oil, grease, oxides and more without damaging sensitive substrates. Laser can be used on metal - steel, aluminum, copper, bronze in addition to natural stone, concrete, wood and plastic (always test first). Laser cleaning offers a safe and environmentally responsible technique to clean challenging, high-value surfaces in-situ without abrasion, water or chemicals. Laser cleaning is ideal for applications in manufacturing, construction, conservation, historic restoration, automotive, aerospace, defense, pharmaceutical, bakery, food processing, electronics and many other fields. When used with appropriate fume extractor & filter setup, laser coating removal and surface cleaning can provide an effective means to control CrVI exposure.
Accessories

Air Filtration & Fume Extractor
This accessory is required to capture and eliminates potentially hazardous process vapors/dust, protect the lasers’ optics and help keep the workstation clean.
Adapt Laser Systems has fume extractors in a range of sizes matched to the application requirements.

Options
Available options for the CL 300 include choice of optic, dual optic beam switch, water-cooling, robotic interface optic, additional fiber-optic cable up to 150 feet and more.

Please consult with Adapt Laser Systems regarding accessories, options and special designs for stationary, fully automated and remote-controlled, cleaning, de-coating and surface prep using laser precision.

Safety
Carefully review and follow all operating instructions and applicable rules/regulations when using the device.

Technical Data

<table>
<thead>
<tr>
<th>Model: CL 300 B/S</th>
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</thead>
<tbody>
<tr>
<td>Laser type</td>
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<tr>
<td>Laser class</td>
</tr>
<tr>
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Technical Support
Adapt Laser Systems has knowledgeable specialists dedicated to understanding your objectives and optimizing your laser systems’ performance. Call to discuss applications and options for in-house and on-site testing/evaluations.

Availability
Typically 15 weeks

Price
Detailed quotations provided upon request. Adapt Laser Systems services all of North America and works closely to help customers select the most cost-effective model and accessories; optimized specifically for each application.
Model: CL 500Q™ - High-Power Mobile Laser Cleaning Unit

Description: Compact, powerful 500 watt Nd:YAG, diode-pumped, q-switched pulsed laser cleaning unit designed to deliver both mobility and performance for a wide range of production-intensive applications. Its state-of-the-art design features a user interface with easy-to-operate controls and a digital display, internal cooling, quite operation and a laser diode module warranted for 10,000 hours. The unit produces a robust laser beam with a power output up to 450 kW per pulse and a beam width of 70 mm. Laser cleaning is accomplished with versatile handheld or automated end effectors connected to the power unit by a heavy-duty, yet flexible 10 m fiber-optic cable. For enhanced mobility, the fiber optic cable can be extended up to 45 m. Optional beam switch system includes dual end effectors for remarkable versatility operated by the touch of a button. Fast and easy to operate, this laser cleaning unit quickly restores surfaces at the lowest operating cost of all industrial cleaning methods.

End Effector
The CL 500Q is equipped with the handheld OSH 70L optic (laser cleaning tool). It features a closed loop scanner with an integral suction channel to remove fumes and particles to a fume extractor filter unit. All laser parameters; beam width, pulse frequency and scan frequency are conveniently controlled by the operator through the OSH 70L. Other end effectors are available.

Options for the OSH 70L include:
- Motorized nozzle attachment
- Roller nozzle
- Safety distance sensor
- Assorted lens packages and focal distances for optimal cleaning

Uses: Precise cleaning, restoration, removal of - paint, coatings, contaminants, production residue, oil, grease, oxides and more without damaging sensitive substrates. Laser can be used on metal - steel, aluminum, copper, bronze in addition to natural stone, concrete, wood and plastic (always test first). Laser cleaning offers a safe and environmentally responsible technique to clean challenging, high-value surfaces in situ without abrasion, water or chemicals. Laser cleaning is ideal for applications in manufacturing, construction, conservation, historic restoration, automotive, aerospace, defense, pharmaceutical, bakery, food processing, electronics and many other fields. When used with appropriate fume extractor & filter setup, laser coating removal and surface cleaning can provide an effective means to control CrVI exposure.
Accessories
CM 500 - Air Filtration & Fume Extractor
This accessory provides cooling to the end effector and captures process vapors/dust, protect the lasers’ optics and help keep the workstation clean.
See CM 500 Filtration & Fume Extractor product & technical information sheet for details.

Options
Available options for the CL 500 Q include; second optic, water-cooled robotic interface optic and additional fiber-optic cable up to 150 feet, tire mold cleaning system
Please consult with Adapt Laser Systems regarding accessories, options and special designs for stationary, fully automated and remote-controlled laser cleaning systems.

Safety
Carefully review and follow all operating instructions and applicable rules/regulations when using the device.

Technical Data

<table>
<thead>
<tr>
<th>Model: CL 500Q*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laser type</td>
</tr>
<tr>
<td>Laser class</td>
</tr>
<tr>
<td>Average laser power</td>
</tr>
<tr>
<td>Peak pulse power</td>
</tr>
<tr>
<td>Wavelength 106</td>
</tr>
<tr>
<td>Pulse frequency</td>
</tr>
<tr>
<td>Focal distance</td>
</tr>
<tr>
<td>Beam width</td>
</tr>
<tr>
<td>Beam diameter</td>
</tr>
<tr>
<td>Cooling system</td>
</tr>
<tr>
<td>Fiber optic connection cable length</td>
</tr>
<tr>
<td>Power supply</td>
</tr>
<tr>
<td>Maximum power consumption</td>
</tr>
<tr>
<td>Size (L x W x H)</td>
</tr>
<tr>
<td>Weight</td>
</tr>
</tbody>
</table>

*Due to on-going improvements, technical specifications & equipment appearance subject to change

Technical Support
Adapt Laser Systems has knowledgeable specialists dedicated to understanding your objectives and optimizing your laser systems’ performance. Contact us to talk about testing options or to arrange an on-site laser demonstration.

Availability
Typically 20 weeks

Price
Detailed quotations provided upon request. Adapt Laser Systems services all of North America and works closely to help customers select the most cost-effective model and accessories; optimized specifically for each application.

Distributed By:
Dawson-Macdonald Co., Inc.
845 Woburn Street - Wilmington, MA 01887
Phone: (800) 556-4456 (toll free) Fax: (978) 657-8740
E-mail: info@dawson-macdonald.com
Website: www.dawson-macdonald.com

Kansas City MO
Philadelphia PA
www.adapt-laser.com

Form: CL 500Q/808
Model: CL 1000 - Powerful Mobile Laser De-Coating & Cleaning

Description: Super powerful 1000 watt Nd:YAG, diode-pumped, q-switch laser cleaning unit designed to deliver both mobility and performance in a wide-range of production intensive applications. It features a digital display, onboard PC with touch screen, internal cooling, quite operation and a diode module warranted for 10,000 hours. The unit produces a beam scan width of 80mm; adjustable down to 2mm. Laser treatment is accomplished with a versatile handheld optic connected to the power unit by a flexible yet heavy-duty 30 foot fiber-optic cable. For enhanced mobility, the fiber-optic cable can be extended up to 150 feet with an optional package. Fast start-up, easy to operate, uses no media, no chemicals, no water, captures vaporized residue, no dust, no clean-up and no secondary waste. A green process that de-coats, cleans and prepares challenging surfaces in-place and at the lowest operating cost of all industrial cleaning methods.

End-Effector
The CL 1000 is equipped for handheld use with the model OSH 80 end effector. This tool is well-suited for laser de-coating irregular surface with the standard nozzle or switched to a roller nozzle for ease of use when working on flat areas. It features a closed loop scanner with an integral suction channel to immediately capture fumes and particles via a modular air filter unit.

Laser settings can be easily adjusted by the operator using controls and status display at the back of the tool. These include pulse frequency, scan frequency, scan width and scan off-set.

OSH 80 options include:
- Motorized nozzle attachment
- Remote control
- Safety distance sensor
- Assorted lens packages for special applications
(Other end effectors available)

Uses: Precise cleaning, restoration, removal of - paint, coatings, contaminants, production residue, oil, grease, oxides and more without damaging sensitive substrates. Laser can be used on metal - steel, aluminum, copper, bronze in addition to natural stone, concrete, wood and plastic (always test first). Laser cleaning offers an environmentally responsible technique to clean challenging, high-value surfaces in-situ without abrasion, water or chemicals. Laser cleaning is ideal for applications in manufacturing, shipyards, aerospace, defense, pharmaceutical, bakery, food processing, electronics construction, conservation, historic restoration, automotive, and many other fields. When used with appropriate fume extractor & filter setup, laser coating removal and surface cleaning can provide an effective means for controlling de-paint related CrVI lead and other HAZMAT emission.

Kansas City MO
Philadelphia PA
www.adapt-laser.com
Accessories

**Air Filtration & Fume Extractor**
A modular laser fume extractor filter unit is used to capture potentially hazardous process vapors/dust, protect the lasers’ optics and helps keep the work area clean. A range of sizes and filter setups are available depending on the application. See Fume Extraction Filter Unit product and technical data sheet for more information.

Options

Please consult with Adapt Laser Systems regarding accessories and special designs for stationary, fully automated and remote-controlled laser cleaning systems.

Safety

Carefully review and follow all operating instructions and applicable rules/regulations when using the device.

**Technical Data**

<table>
<thead>
<tr>
<th>Model: CL 1000 Q</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Laser type</strong></td>
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<tr>
<td><strong>Laser class</strong></td>
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<tr>
<td><strong>Maximum laser power</strong></td>
</tr>
<tr>
<td><strong>Wavelength</strong></td>
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<tr>
<td><strong>Pulse frequency</strong></td>
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<tr>
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<tr>
<td><strong>Focal distance</strong></td>
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<tr>
<td><strong>Beam scan width</strong></td>
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<td><strong>Weight</strong></td>
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Due to on-going improvements, technical specifications & equipment appearance subject to change without notice.

**Technical Support**

Adapt Laser Systems has knowledgeable specialists dedicated to understanding your objectives and optimizing your laser systems’ performance. Contact us to talk about testing options or to arrange an on-site laser demonstration.

**Availability/Price**

Detailed quotations provided upon request. Adapt Laser Systems serves all of North America and works closely to help customers select the most cost-effective unit, optimized for the application. Systems are available for on-site testing and rentals.

**Distributed By:**

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E-mail: info@dawson-macdonald.com
Website: www.dawson-macdonald.com

Korea City MO
Philadelphia PA
www.adapt-laser.com
Model: CL Workstation™ - High Precision Laser Cleaning System

Description: Solid-state, diode-pumped Nd:YAG, q-switch laser cleaning unit with average power up to 500 watts. Designed for precise automated and semi-automated parts cleaning and surface treatment in a wide-range of applications. It features user-friendly PC based graphic interface with flexible 2D scan programming, 2D laser optics, high speed beam deflection for minimal thermal impact as well as controls for up to 4 axis processing.

This system provides ultra efficient cleaning results with Class 1 laser system safety features though the use of an optional laser enclosure housing.

Uses: Precise cleaning, restoration, removal of - paint, coatings, contaminants, production residue, oil, grease, oxides and more without damaging sensitive substrates. Laser can be used on metal - steel, aluminum, copper, bronze, nickel, in addition to other substrates (always test first). Laser cleaning offers a safe and environmentally responsible technique to clean challenging, high-value surfaces without abrasion, dust, water, chemicals or consumable media. Laser cleaning is ideal for applications in manufacturing, automotive, aerospace, defense, pharmaceutical, electronics and many other fields.

When used with appropriate fume extractor & filter setup, laser cleaning does not release airborne dust or vapors.

Accessories
Air Filtration & Fume Extractor
This accessory is required to capture and eliminates potentially hazardous process vapors/dust, protect the lasers’ optics and help keep the workstation clean.

Options
Please consult with Adapt Laser Systems regarding accessories, options and special designs for laser cleaning systems.
Safety
Carefully review and follow all operating instructions and applicable rules/regulations before and when using the device.

Technical Data

<table>
<thead>
<tr>
<th>Model: CL Workstation*</th>
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</thead>
<tbody>
<tr>
<td>Laser type</td>
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<tr>
<td>Laser class</td>
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<tr>
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Technical Support
Adapt Laser Systems has knowledgeable specialists dedicated to understanding your objectives and optimizing your laser systems’ performance. Contact us to talk about testing options or to arrange an on-site laser demonstration.

Price
Detailed quotations provided upon request. Adapt Laser Systems services all of North America and works closely to help customers select the most cost-effective model and accessories; optimized specifically for each application.

Availability
Approximately 20-25 Weeks
Automated Laser Cleaning Systems for Manufacturing Process Integration

**Description:** Nd:YAG, solid-state, laser cleaning systems for automated process integration and production intensive applications. State-of-the-art design features include innovative 2D high-speed beam scanning technology controlled by computer software. Laser cleaning systems range in beam power from 20 watts up to 1000 watts to deliver the optimal cleaning power for the application. A flexible fiber optic wave-guide allows the laser to be used with a wide range of robotic mounted end-effectors as well as multi-axis workstations. Laser systems are adapted to the customers' requirements and provide consistent cleaning of both simple and complex patterns with great precision. All units are engineered for maximum reliability, minimal maintenance and quite operation. Fast and easy to operate, laser cleaning quickly cleans surfaces at the lowest operating cost of all industrial cleaning methods.

**Uses:** Precise automated cleaning for in-line removal of contaminants, production residue, paint, coatings, oil, grease, oxides and more without damaging sensitive substrates. Laser can be used on metal - steel, aluminum, copper, bronze in addition to natural stone, concrete, wood and plastic (always test first). Laser cleaning offers a safe and environmentally responsible technique to clean challenging, high-value surfaces in-situ without abrasion, water or chemicals. Automated laser cleaning is ideal for applications in manufacturing, automotive, aerospace, defense, pharmaceutical, bakery, food processing, electronics and many other fields.

**System Types:** Here are a few examples of stationary and robotic controlled laser cleaning units available from Adapt Laser Systems
Many design options available

Fully Enclosed Robot Laser Cleaning Work Cell with Turntable
Class 1 Laser system – no laser safety hazard
Large robotic arm
Robot moves part to laser inside cell or robot can operate/laser treat parts stationary on turntable or cart through safety inter-lock doors

Compact Robotic Laser Work Cell

Fully Enclosed Robot Laser Cleaning Work Cell with Moving Tray
Class 1 Laser system – no laser safety hazard
Small robotic arm
Tray moves part in/out for processing by robot mounted laser inside
Technical Data

<table>
<thead>
<tr>
<th>Stationary Models – Typical Values</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Laser type</strong></td>
</tr>
<tr>
<td><strong>Laser class</strong></td>
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<tr>
<td><strong>Average laser power</strong></td>
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<td><strong>Cooling system</strong></td>
</tr>
<tr>
<td><strong>Power supply</strong></td>
</tr>
</tbody>
</table>

*Due to on-going improvements, technical specifications & equipment appearance subject to change

Accessories
Air Filtration & Fume Extractor
Required to capture and eliminates potentially hazardous process vapors/dust, protect the lasers’ optics and help keep the workstation clean.

See Fume Extractor Product Information for details
Options
Please consult with Adapt Laser Systems regarding options and special designs for stationary, fully automated and remote-controlled laser cleaning systems.

Safety
Carefully review and follow all operating instructions and applicable rules/regulations when using the device.

Technical Support
Adapt Laser Systems has knowledgeable specialists dedicated to understanding your objectives and optimizing your laser systems' performance. Contact us to talk about testing options or to arrange an on-site laser demonstration.

Availability
Typically 20 weeks (depending on system requirements)

Price
Detailed quotations provided upon request. Adapt Laser Systems services all of North America and works closely to help customers select the most cost-effective model and accessories; optimized specifically for each application.
End-Effectors

Optics for CL 500 Q & CL 1000 Q

The OSH 70 L was designed for the high power CL 500 Q laser. The optic has a closed loop scanner with an adjustable beam width of up to 3 in. The integrated suction channel removes fumes and particles and simultaneously cools the critical parts of the optic. All laser parameters can be controlled through the OSH 70 L optic. The optic has a safety trigger.

Available options:
- Motor Nozzle Attachment
- Roller Nozzle
- Safety Distance Sensor
- Different lens packages and focus distances

The OSA 70 optic was designed for robotic applications. The optic is water cooled and can easily be attached to all common robotic systems. All internal components of the optic are accessible from the outside for fast maintenance times.

Optics for CL 150 & CL 300

The OSH 50 L optic is the standard optic for our 150 & 300 watt lasers. It offers a beam width of up to 3 in. and is lightweight. All laser parameters are controllable from the optic. The optic features an integrated suction channel and safety trigger.

Available options:
- Motor Nozzle Attachment
- Roller Nozzle
- Safety Distance Sensor

The Stylus is our most compact optic with a beam width of up to 1.5 in. The full aluminum construction makes this optic very versatile. The Stylus has an integrated swivel joint to access hard to reach areas. Like with all of our handheld optics, this small tool allows you to control all laser function at the optic. This optic is available as an air or water-cooled optic and can be used manually or attached to a robotic system.

Available options:
- Water cooling (for continuous hot surface applications)
- Safety Distance Sensor
- Different lens packages and focus distances
The OSH 50 A is similar to the hand held optic for the 150 & 300 watt lasers, but features a standard robotic interface. The maximum beam width of this optic is 3in.

Optic for CL 20QF & QF-BP

The OSH 20 is the standard optic for the ultra compact CL 20QF laser systems. It offers great beam characteristics, such as an adjustable scanned beam-width of up to 3 in. in combination with a very small beam diameter.

The optic is very compact and light weight.

Other Optics Available

2D Scanner is available for the CL 20QF & BP, CL 150, CL300 & CL 500Q lasers. Outstanding beam profile, ultra-precise and programmable for special applications involving complex cleaning and coating removal geometry.

Examples of Robotic Interfaced Optics – Other Special Designs Available
<table>
<thead>
<tr>
<th>Specifications</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CL 20QF/BP</td>
</tr>
<tr>
<td>Nd:YAG Laser, 1064 nm</td>
<td>Yb Fiber 1060 -1070nm</td>
</tr>
<tr>
<td>Average Laser Power, W</td>
<td>20</td>
</tr>
<tr>
<td>Peak Pulse Power, kW</td>
<td>5</td>
</tr>
<tr>
<td>Pulse Frequency, kHz (fiber coupled)</td>
<td>40 -120</td>
</tr>
<tr>
<td>Focal Distance, mm</td>
<td>Up to 500</td>
</tr>
<tr>
<td>Beam Diameter, mm/in. (f=focal distance)</td>
<td>f=100 - 0.10</td>
</tr>
<tr>
<td>Max. Beam Scan Width, mm</td>
<td>25@ f=100</td>
</tr>
<tr>
<td>Max. Fiber Optic Length, m</td>
<td>2</td>
</tr>
<tr>
<td>Power Supply, Volts</td>
<td>110</td>
</tr>
<tr>
<td>Max. Power Consumption, kW/hr</td>
<td>0.2</td>
</tr>
<tr>
<td>Size, in. (approx – L x W x H) in.</td>
<td>10x8x4</td>
</tr>
<tr>
<td>Weight, lbs</td>
<td>39</td>
</tr>
<tr>
<td>Production Rate Comparison Ft²/min@1mil</td>
<td>0.04</td>
</tr>
<tr>
<td>Laser Class</td>
<td>IV</td>
</tr>
</tbody>
</table>

*Available with beam switch option - includes (2) separate optics
Specifications & prices subject to change without notice

**Other Systems & Special Designs Available**