



LASERDYNE 795

BeamDirector® 3

The Premier Multi Axis Laser Processing System
for Drilling, Welding and Cutting Precision Components



Fully Integrated for the Most Demanding Laser Processing Applications Worldwide.

LASERDYNE 795 with BeamDirector® 3

Travel	<i>X, Y, and Z</i>	XS 40 x 40 x 40 inches (1.0 x 1.0 x 1.0 m) XL 80 x 40 x 40 inches (2.0 x 1.0 x 1.0 m)
	<i>BeamDirector®</i>	900 degrees continuous motion in C axis 300 degrees continuous motion in D axis
Feedrate	<i>X-Y and Z</i>	0 – 800 inches/minute (0-20 m/minute)
	<i>BeamDirector®</i>	0 – 90 rpm
	<i>Rotary Axis</i>	Variety of options depending on application
Resolution	<i>X, Y, and Z</i>	0.0001 (0.0025 mm)
	<i>BeamDirector®</i>	0.0005 degree
Accuracy	<i>X, Y, and Z</i>	± 0.0004 inch (0.01 mm) per 20 inches of travel ± 0.0008 inch full travel
	<i>BeamDirector®</i>	± 6 arcseconds
Repeatability	<i>Linear X, Y and Z</i>	within 0.0008 inch (0.02 mm) full system travel
	<i>BeamDirector®</i>	within 6 arcseconds
	<i>Rotary Axis</i>	depending on choice of option

LASERDYNE 795 with BeamDirector® 3.

For over 30 years the LASERDYNE name has meant flexible, high performance, and world-class laser processing systems. The LASERDYNE 795 is the latest and most advanced multi axis laser system. This system is the product of a team of laser processing and system design engineers that are working closely with real world customer requirements. They have produced a system that makes laser processing a controlled, repeatable, cost effective manufacturing process.

Like all of the quality systems that preceded the latest version of the 795, LASERDYNE SYSTEMS fulfill the wide range of needs, wants and manufacturing approaches of customers. The features and capabilities of this latest, 4th generation LASERDYNE system reflect the changing requirements and the maturing of laser processing technology. With complete integration of all laser, motion, and process sensing through the LASERDYNE S94P control, process quality and integrity is under the control of the system, not dependant on the operator.

To meet the changing needs of customers and provide access to the latest laser technology as it is developed, LASERDYNE keeps customers informed of process developments and new capabilities through a multi-faceted program. This includes a newsletter, the LASERDYNE Interface, ongoing access to the LASERDYNE Applications Engineering staff and equipment within the LASERDYNE Technology Center.

The next pages illustrate some of the reasons why the LASERDYNE 795 with BeamDirector® 3 is the industry standard.



REASON #1 LASERDYNE 795...Turnkey Systems.

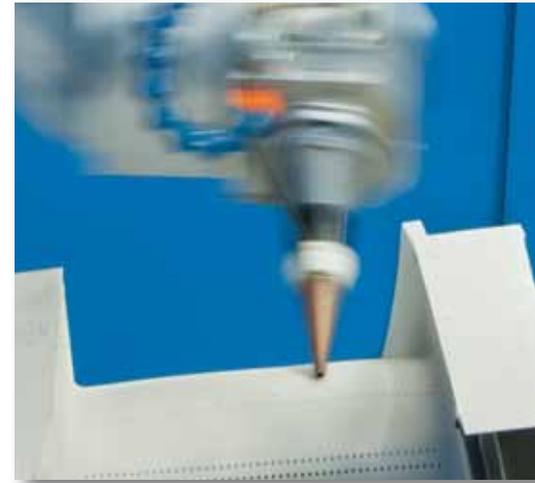
When you choose a PRIMA NORTH AMERICA CO2 or solid state laser you will be processing with a laser developed by PRIMA North America engineers, the most experienced in the laser industry.

Cooperation between LASERDYNE SYSTEMS and CONVERGENT LASERS engineers that led to the design of the CL series of Nd:YAG lasers is one example of the benefits of vertical integration within the PRIMA Group.

LASERDYNE customers benefit from continuous innovation that has led to system features and capabilities which address changing requirements, in designs of parts, challenging new materials, or stricter quality requirements.

The LASERDYNE 795 is available with other laser sources such as fiber lasers and optional automation equipment. LASERDYNE SYSTEMS understands that over the life of their products, the initial purchase price is far outweighed by the productivity of that system and its payback. You can be assured LASERDYNE will recommend the best choice of system and laser for your applications and long-term benefit.

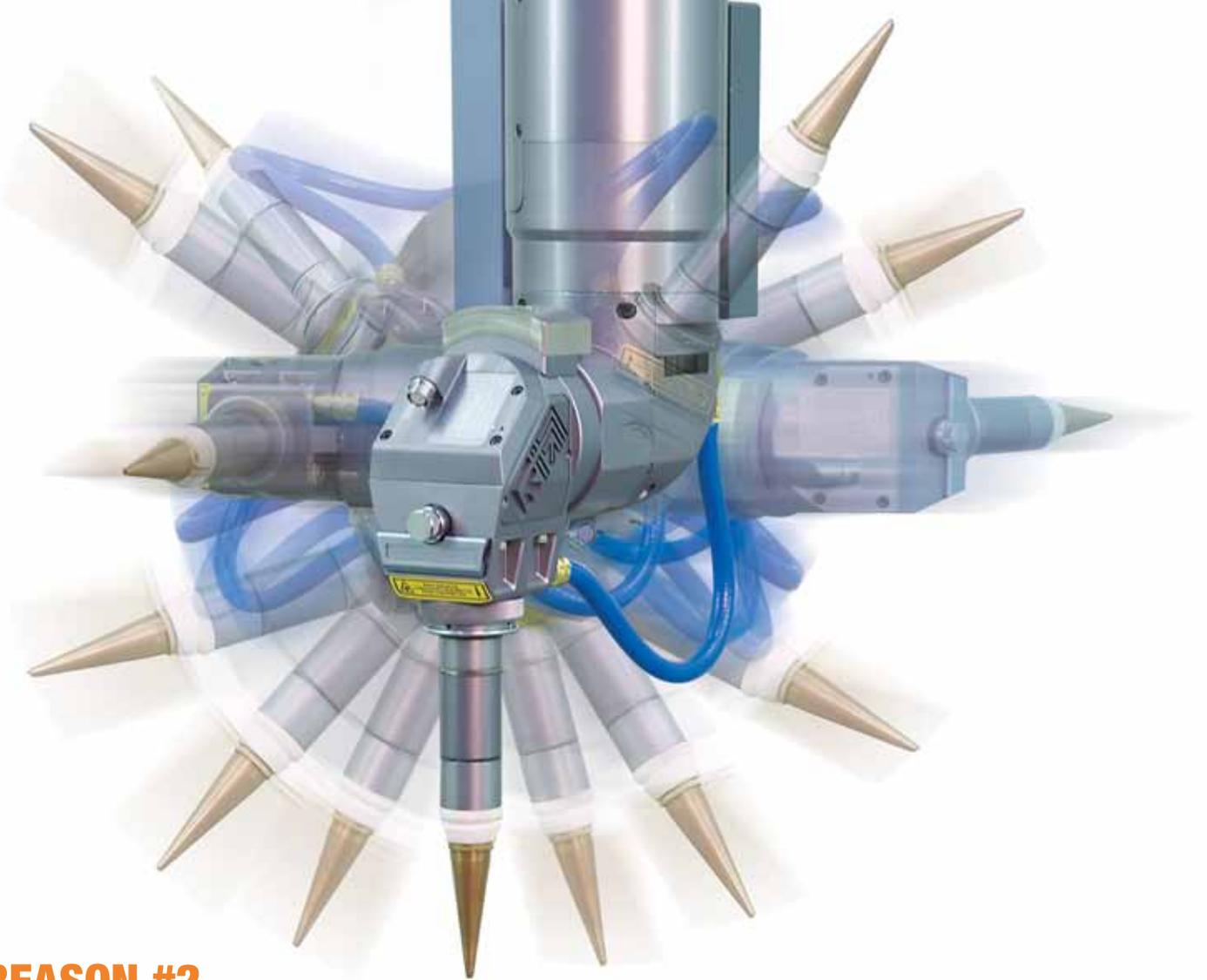
LASERDYNE SYSTEMS patented OFC mapping a TBC part.



A LASERDYNE system with a robot for part loading and unattended processing. An example of LASERDYNE SYSTEMS commitment to turnkey processing.



With seven Laserdyne multi-axis laser systems already in house, Ace Precision recently added the two new 795XL systems to process complex parts needed for a military vehicle project. "This is how we handle major projects and use our broad range of precision processes," reports Mr. Magedanz. "It gives us the advantage of faster turnaround because we are using the very latest, high-speed laser systems with the highest repeatable quality level established during the prototype stages of the project."



REASON #2

LASERDYNE SYSTEMS 3rd Generation BeamDirector®. Fastest, Most Accurate, and Most Versatile 3D Beam Delivery.

The third generation of BeamDirector® maintains the features that have set LASERDYNE systems apart and adds new features to make laser processing even more productive, flexible, and accurate. Improved design and full 5-axis laser beam motion allows the most efficient use of the work envelope. This enables processing at complex angles on parts much larger than systems that require workpiece positioning or rely on one axis of beam positioning and a rotary table.

LASERDYNE systems are recognized for their flexibility in accessing hard-to-reach part locations in a single setup. The latest BeamDirector® provides improved access to difficult to reach locations. The “compact” version used on Nd:YAG applications allows processing parts along the full 39 inches (1 meter) travel of the Z-axis at angles as shallow as 10° to the surface as well as complex shallow compound angles. The CO₂ and fiber laser version provides for laser beam diameters, up to 50mm, for high power cutting and welding applications.

All BeamDirector® models feature unmatched crash protection supported by a **5 years unlimited hours warranty** covering crash related damage. Processing at 60° above horizontal, direct drive motion where useful, optical encoder feedback, lens and coverslide drawers for quick accurate changeover, and a full line of focusing lens and nozzle assemblies address whatever applications that you have now or in the future.

“Our LASERDYNE 790 BeamDirector systems are the keys to doing this work successfully,” reports Mr. Tran. “These systems are often the same models used by OEM’s to make the parts originally so there are both hardware and software compatibility which helps facilitate the refurbishing process.”





Ask yourself the following questions:

1. Can you process holes at critical shallow angles?
2. Will you be able to drill holes at complex compound angles?
3. What is the largest diameter part that can be processed on the system?
4. How do you process TBC parts?

Your challenge is to visit LASERDYNE SYSTEMS, see your part processed on a LASERDYNE SYSTEM, and learn what is critical for your success.

REASON #3

Flexibility...Unmatched With a LASERDYNE SYSTEM.

The LASERDYNE 795 is a true thoroughbred system, designed for maximum performance and flexibility. It is not a collection of existing parts used for milling machines coupled with critical laser components from 3rd party vendors. Rather, it is a carefully engineered and built system created by an engineering design team with over 30 years experience in laser processing.

The LASERDYNE 795 motion system provides users with unmatched flexibility for laser processing. Combining the experience from past LASERDYNE system designs and developments in materials, electronics and sensing technology has resulted in a system that is without equal. Simply the most versatile processing platform available today. Driven by real world customer requirements, from the worldwide base of LASERDYNE SYSTEMS users, the system guarantees access to the most difficult challenges whether they are land based or aerospace turbine components.

According to Gary Loring, head of laser processing for Turbo Combustor Technology, the LASERDYNE systems were purchased primarily for overall processing versatility. "The addition of the LASERDYNE system, with its increased intelligence and new features, will help increase our capacity for laser drilling and productivity," reported Loring.



High speed drilling on the fly with a CL50k Nd:YAG laser using LASERDYNE exclusive OFC (Optical Focus Control), BTB (BreakThrough Detection), and CylPerf programming at normal, minor, shallow, and compound angles.



REASON #4 Real Time Processing Power.

Integrated High Speed Real Time Control.

LASERDYNE engineers and customers know the most important element of productivity is the ability to produce parts correctly without scrap. The System 94P Laser Process Controller continues an impressive history of providing laser system users with unique control feature tools. The new LASERDYNE SYSTEMS controller features an easy to use touch screen, a dual operating system

(Linux for machine operations and Windows for operator interface), and a full complement of LASERDYNE exclusive software including FlowComp® a new industry standard.

A partial list of LASERDYNE SYSTEMS exclusive System 94P features and benefits include:

LASERDYNE 795 features allowed a major aerospace turbine manufacturer to maintain $\pm 2\%$ airflow variation on a new generation of parts where $\pm 10\%$ had been the norm.



See these features demonstrated at LASERDYNE SYSTEMS in the Technology Center and learn how this controller is helping users experience a 2X increase in output.

"Customers really appreciate the fast turnaround," reports Steve Leitner. "We have a five axis programming station that allows us to design tools and then program the LASERDYNE systems to operate at their full potential. We have many processes and techniques that allow us to be successful with the most difficult parts. That is where our specialty lies, with the complex five axis laser process that few companies have the experience to accomplish."



Feature	Application Benefit
OFC® – Optical Focus Control	Accurate beam focus on ceramic / nonmetal surfaces.
CylPerf® Hole drilling program creation	Fast and easy to understand programming of complicated hole drilling patterns
BTD® – BreakThrough Detection	BreakThrough Detection when Nd:YAG drilling
HDC® – Hole Diameter Compensation	Allows direct offset adjustment of hole sizes drilled with the CL50k laser.
FlowComp® – Airflow control	Correct airflow variation directly from a turn-key airflow bench.
SPC Data Acquisition	Complies system and process data documenting that the process is under control. Used for NADCAP certification.
Shaped Hole software	Consistent and easier programming of this new challenge to manufacturing.

REASON #5

Robust Features That Really Matter!

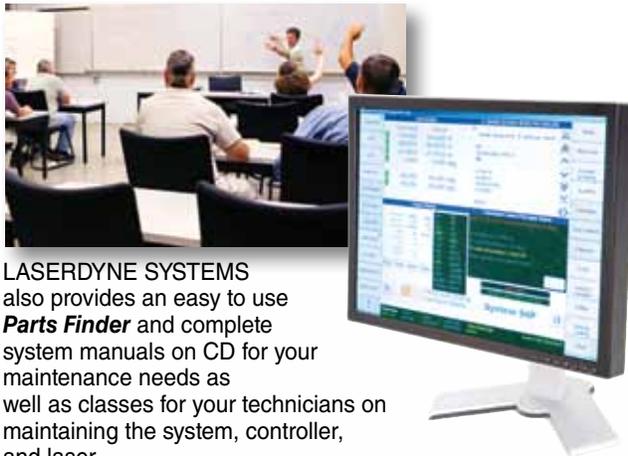
Throughput is only partly influenced by axis speed. You must also consider how easy it is to keep your system operating to specification.

LASERDYNE SYSTEMS, with the 795 System, continues a tradition of having the most complete package of product features, accessories and service support of any laser system manufacturer worldwide.

Critically compare the features that LASERDYNE has built into the 795 for ease of maintenance and maximum uptime. Start with the diagnostic package on the S94P controller. Continue with the automated setup features that insure consistent and accurate operation of the system with minimum operator influence.

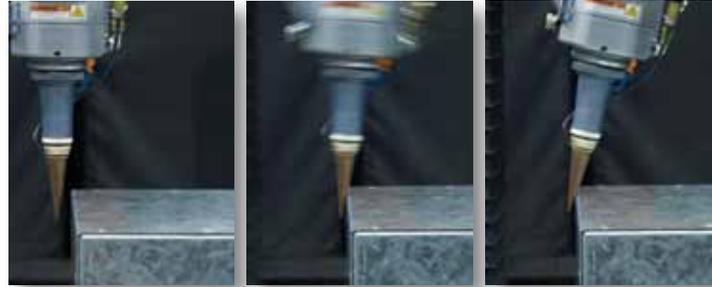
The LASERDYNE 795 has added new features to the system that insure that operation of the system is consistent regardless of operator skill levels and customers location. As an example, the BeamDirector® 3 features quick change cover slide and focusing optics that minimize operator error.

Also important, LASERDYNE SYSTEMS provides training aides and classes for all system users. This includes the exclusive S94P simulated controller which can be added to a users PC to allow students to gain familiarity with the controller and programming without taking valuable system time.



LASERDYNE SYSTEMS also provides an easy to use **Parts Finder** and complete system manuals on CD for your maintenance needs as well as classes for your technicians on maintaining the system, controller, and laser.

See these features demonstrated at LASERDYNE SYSTEMS in the Technology Center and learn how this controller is helping users experience a 2X increase in output.



Laserdyne exclusive crash protection prevents system damage.



Quick change lens and cover slide drawers allow an operator to make foolproof changes in seconds.



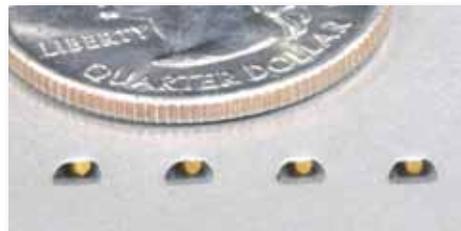
AutoAlignment™ routine uses the system control and AFC™ feature to create critical and accurate lens offsets.

FeatureFinding™ can locate part features automatically from within a program.



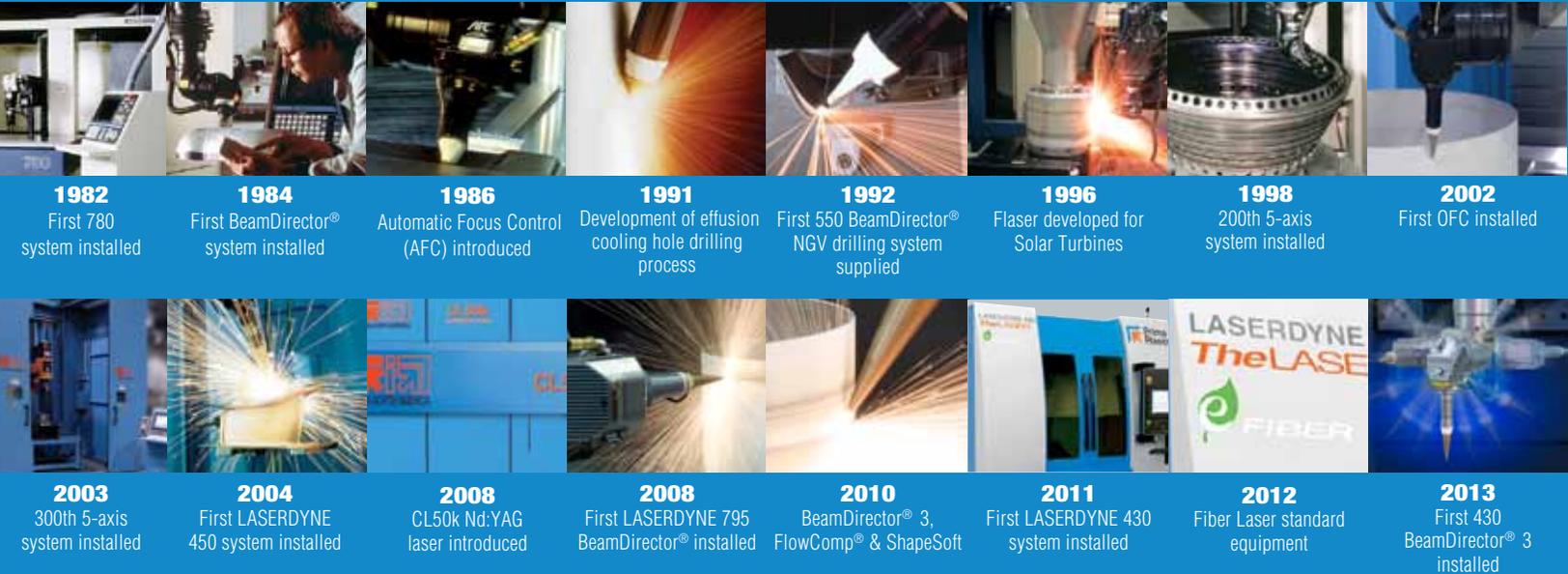
Custom nozzle assemblies available for special applications.

Fast - adjustment free mirror changes.



See what LASERDYNE SYSTEMS has to offer for shaped hole processing. Software and hardware features that guarantee consistency in processing.

The product of more than 30 years track record of excellence in turnkey laser system design, manufacture and support, the LASERDYNE 430 is your choice for the ultimate in flexibility and performance!



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