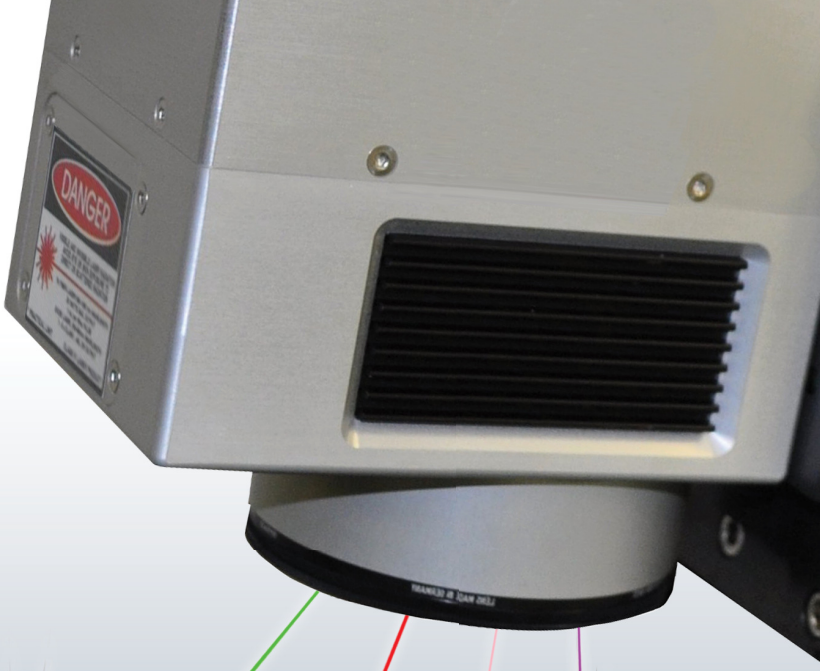
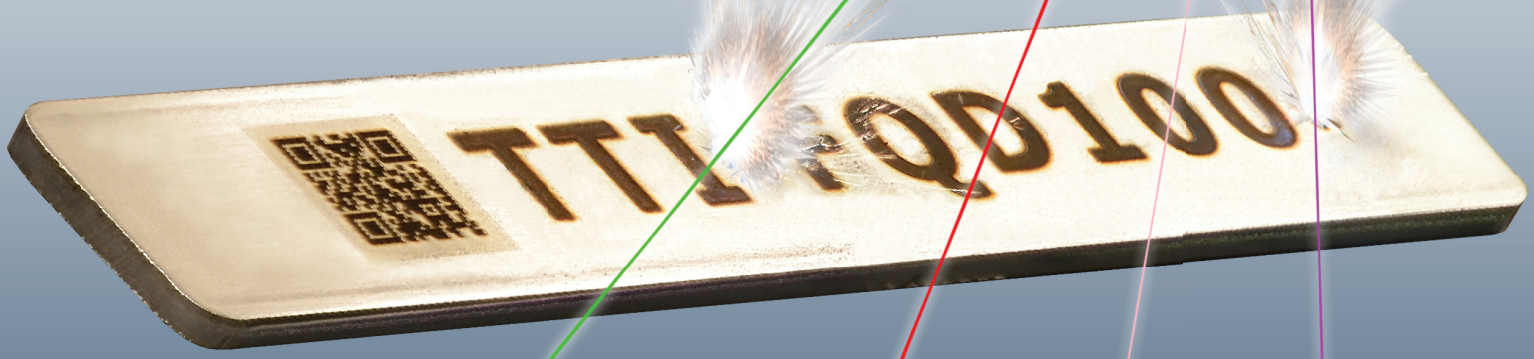
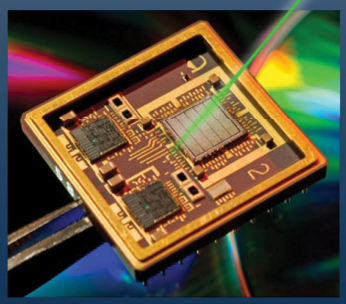
TELESIS

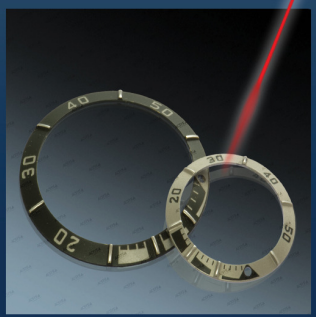
MARK OF CONFIDENCE

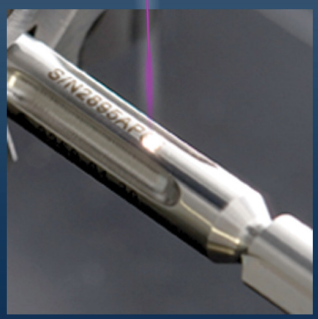


Telesis Lasers
COMPLETE MARKING SOLUTIONS









TELESIS

MARK OF CONFIDENCE

TELESIS LASER MARKING SYSTEMS

TELESIS offers a full line of laser marking systems capable of satisfying even the most demanding laser marking applications for industry. These laser systems cover the spectrum of wavelengths enabling applications to a wide range of products, from medical devices and instruments to automotive components, delicate plastics, ceramics, glass and airframe components, and can mark virtually any material with text, bar codes, 2-D codes, logos and graphics. At the cutting edge of laser marking technology, TELESIS offers optional “mark-on-the-fly” capable versions of all of our standard laser systems and the new Vari-Z series of 3-Axis laser markers for applications that require sophisticated marking on multiple surface levels or optimized rapid deep engraving.

Telesis offers unmatched worldwide support of every laser marker we sell. Whether you are in the USA where we are headquartered, or anywhere across the world, our sales and support team is there for you and we are a phone call away. An investment in a Telesis laser is an investment in the future - we won’t let you down.

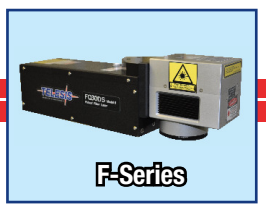
- Unmatched worldwide support
- Full laser technology portfolio
- Turn-key integration
- Unprecedented application experience
- Superior customer service

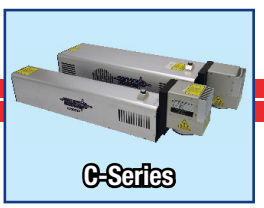
This is Telesis. This is what we do.


UVC

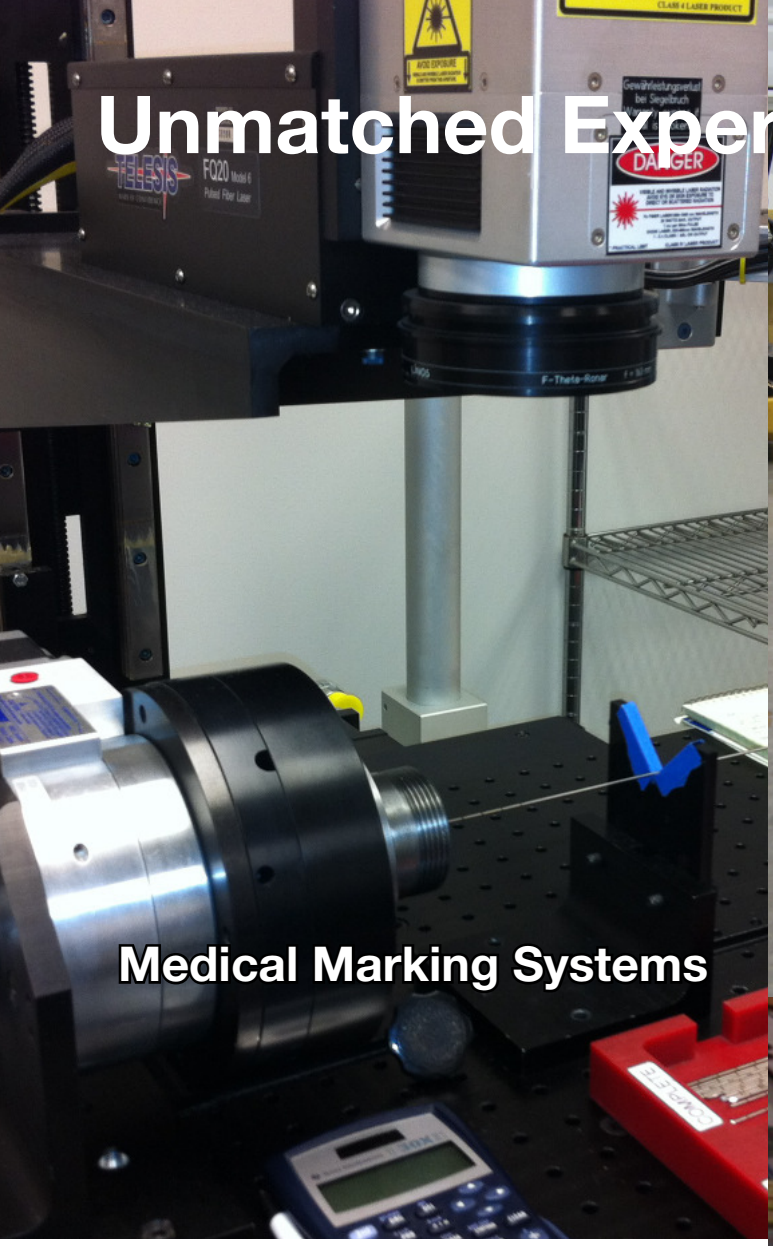

EV4GDS


E-Series


F-Series


C-Series

Unmatched Experience



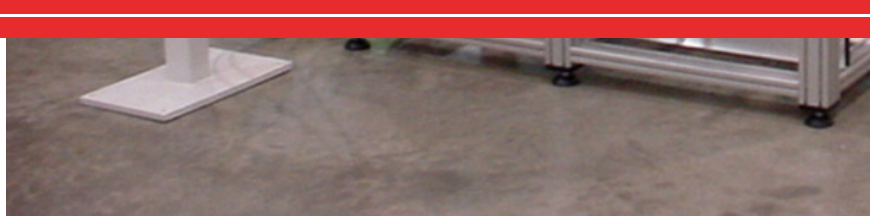
Medical Marking Systems

Conveyer Fed Marking Systems

Gantry Loaded Rotary Dial Station

With over 30 years of experience in the industry, Telesis is the LEADER in product identification. With our extensive applications archive, Telesis has “been there and done that”.

- Major automotive turn-key integration
- Tier 2 supplier integration
- Part handling
- Traceability
- Application specific marker development



Turn-key Custom Integration

Telesis is Your Complete Solutions Provider

Telesis offers extensive custom integration. Whether your need is a simple fixture or a turn-key laser marking cell, Telesis is unmatched by other laser companies in machine building experience. At Telesis, project support staff includes:

- In-house project engineers
- Project managers
- Electrical engineers
- Mechanical engineer
- In-house machine shop

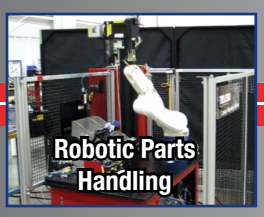
Automotive integration for all major manufacturers worldwide. Telesis knows their specifications!

In addition to custom builds, Telesis also works closely with machine integrators - the focus is always on the customer solution.

Wherever your projects take you, Telesis has global support for your laser system.

Telesis offers a full range of communications interfaces for factory automation and integration:

- TCP/IP
- USB, RS232 Serial
- Discrete External I/O (TTL/Opto-isolated)
- EtherNet/IP and PROFINET Multiple Axis Control
- Mark-On-The-Fly (MOTF)
- Bar Code Scanner Support
- Foot Switch Interface
- Dual-Sensor Shutter Interface



Dedicated to Safety

With over 40 years in the Product Identification business, Telesis has "been there and done that." We do what the other guys simply can't, don't or won't. As the laser experts, we can offer our expertise when your laser safety is an issue.

- CDRH Safety Specifications
- ANSI Specifications
- Major Automotive Manufacturer Safety Specifications
- ISO 13849 Compliance
- CE Certification

Telesis is here for you.

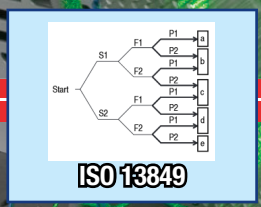
Your issue is our issue.

Customer oriented since day one.

This is Telesis. This is what we do.

CDRH


ANSI



ISO 13849


CE


OEM Safety

Unmatched Flexibility
Vari-Z Laser Markers

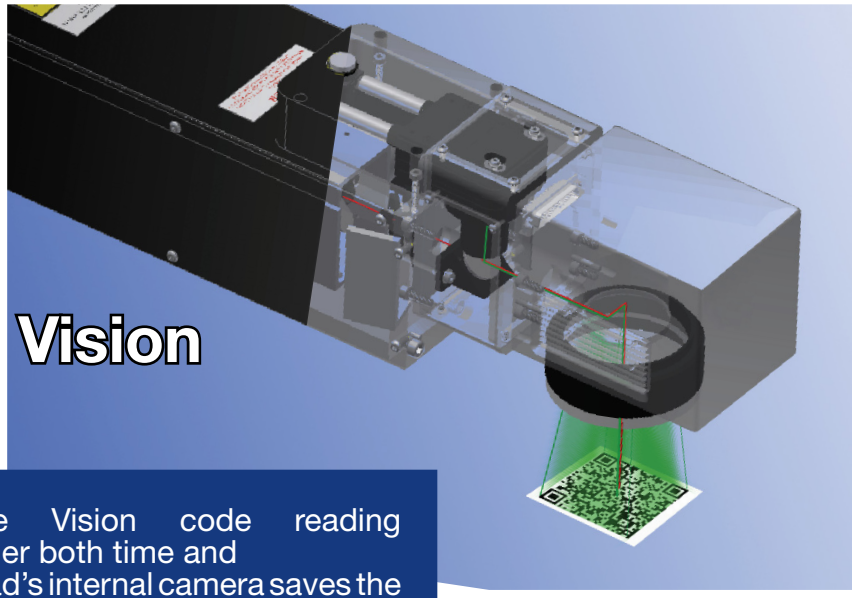
The innovative, compact and flexible VARI-Z Series of solid state laser marking systems are perfectly suited for advanced applications that require the processing of non-flat parts, multiple or uneven surfaces. Telesis Vari-Z technology and software help to eliminate the need for tooling changes, saving both customer time and money.

Current lens configurations available for the FQ laser line:

- 254 mm offers +/- 39 mm focal range
- 160 mm offers +/- 15 mm focal range

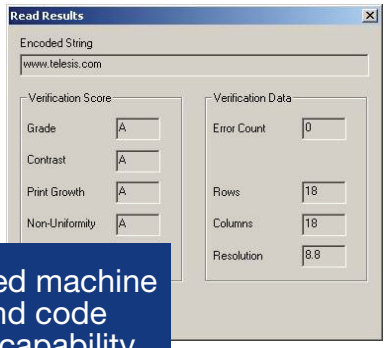
Our focal range is the best in the industry
Telesis continues to lead

Telesis Laser Markers
Make Integration Easy

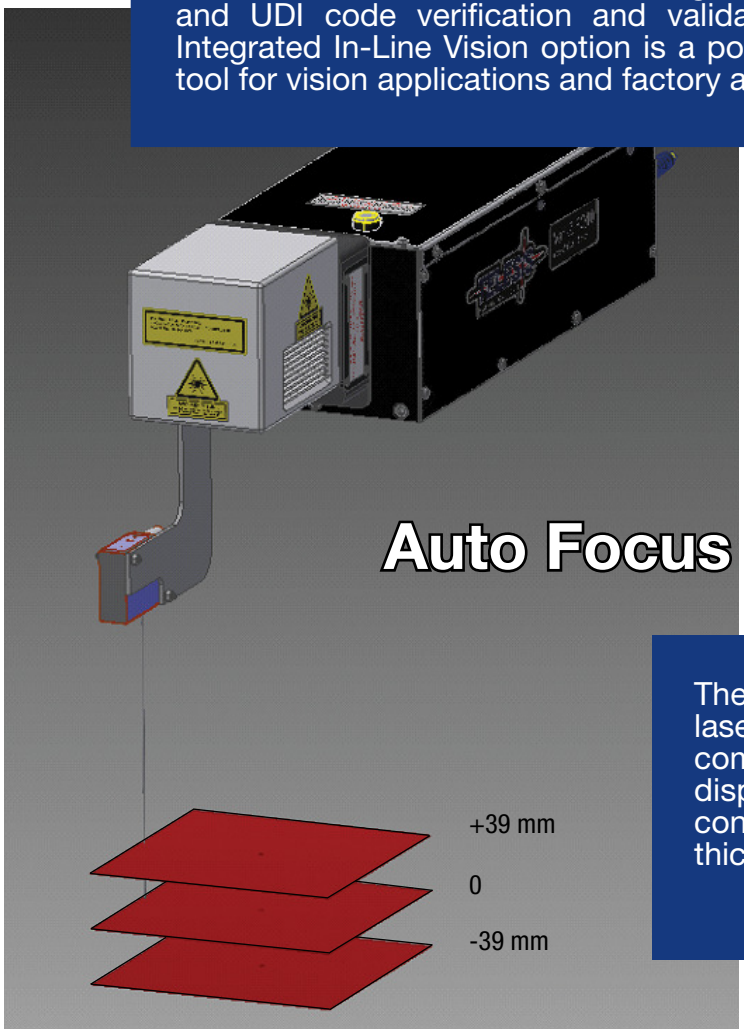


Integrated In-Line Vision

Telesis Integrated In-Line Vision code reading technology saves the customer both time and money. The laser marking head's internal camera saves the customer both complexity and space. Our integrated software package makes setup and use easy, and delivers immediate results. Offering 2D, QR, UID, GS1 and UDI code verification and validation, the Telesis Integrated In-Line Vision option is a powerful integration tool for vision applications and factory automation.



Integrated machine vision and code grading capability



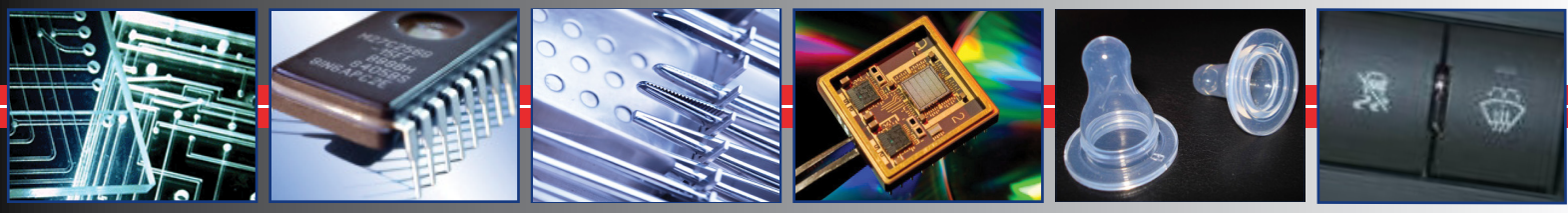
Auto Focus Function

The AutoFocus Function option on Vari-Z model lasers allows the marker to automatically compensate for varying target heights. This displacement sensor allows the machine to continously compensate for changes in material thicknesses.

UVC
ULTRAVIOLET LASER MARKER

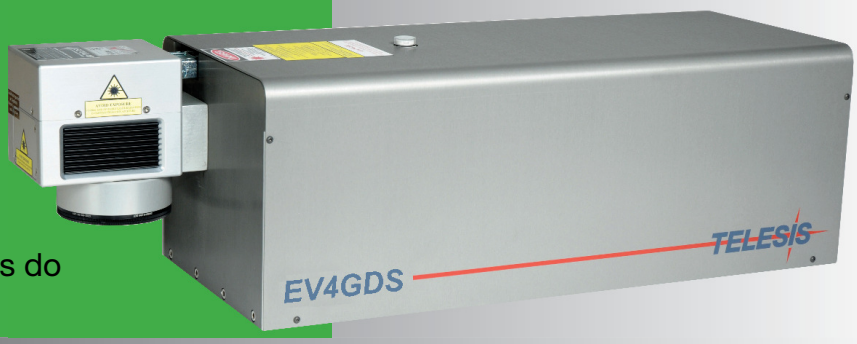
Our strong portfolio already boasts some of the most versatile and reliable systems in the industry, and with the addition of the ultra-compact UVC based laser marker, Telesis has gained flexibility and broadened the reach of applications that can be addressed. Telesis offers an industry leading 18 month warranty on the UVC along with a global support organization. The 355 nm UV laser wavelength is versatile in marking a wide range of materials and perfect for “cold marking” applications where heat affected zones are not allowed – the UVC can mark plastics and silicone materials without the need of additives and can also mark glass with a reduced risk of microfracture. The excellent beam quality also affords this laser the ability to be utilized in micro marking applications such as electronics, circuit boards and microchips, in addition to solar panels and precise medical marking applications.

CD shown to scale



EV4GDS
GREEN LASER MARKER

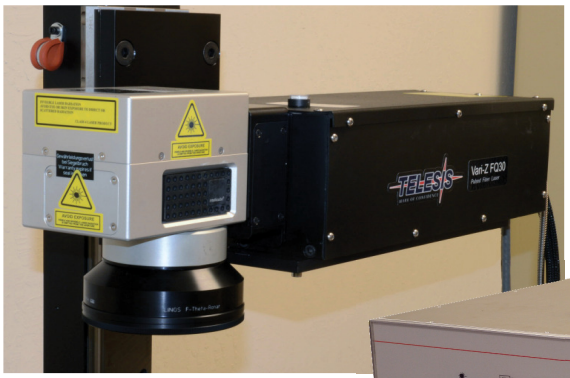
The EV4GDS laser beam and Q-switched pulse characteristics are optimized for applications that require high beam quality and stability. In addition, the EV4GDS offers extra power and speed for precision marking and material processing applications. Its shorter wavelength (532 nm vs near IR wavelengths), short pulse width and small spot size provide high resolution marking with a minimal heat impact to the surrounding areas. These characteristics make it an ideal choice for laser marking, scribing, trimming, and many other material processing applications. The green laser is ideal for plastics, polymers and materials where near IR wavelengths beams do not interact well.



Telesis FQ2H Dual Head Fiber Lasers

Two heads are better than one

Telesis FQ2H Dual Head Fiber Lasers offer the unique advantage of controlling two independent marking heads with a single integrated controller. This patented technology offers integrators not only a cost savings but also a meaningful time savings by simplifying the controls integration required to synchronize the markers an advanced tool for jobs where two lasers are needed or in jobs where parts may need to be manipulated in order to mark multiple mark locations. This simplifies factory automation by providing simple software controls, and the ability to mix and match any combination of laser head configurations from two 10 Watt heads to 50 Watt heads, including Vari-Z autofocus systems and Integrated In-Line Vision camera viewing options. This allows you to perfectly customize your system to your application - a unique level of versatility that no other laser company can offer.



Vari-Z FQ30DS

Integrated PC Laser Controller

Telesis F-Series Lasers

We pioneered the use of fiber laser markers in 2003 and continue to be the leader in fiber laser marking technology. Telesis markers offer low maintenance marking of almost all metals at an affordable price. All of these lasers are completely air cooled systems with average powers from 10W up to 100W for applications for which faster processing speeds are required; and all available models now ship with the DS (Dual Safety Shutter) as a standard feature.

FQ10DS	FQ20DS	FQ30DS	FQ50DS	Vari-Z	FQD
10 W	20 W	30 W	50 W	10-50 W	20-100 W

The innovative, patented FQD100 dual beam pulsed fiber laser system is perfectly suited for advanced applications that require rapid processing over a wide range of materials. Unique to this system is the ability to simultaneously mark in two separate fields, with the flexibility of independent parameter control for each marking head. The dual head configuration allows for significantly larger marking fields, increased throughput over single head laser systems, and sophisticated pattern generation that can outperform the cycle times of much higher power lasers.

The Telesis FQ50DS is the latest in a family of maintenance free Q-switched ytterbium fiber lasers with average power levels from 10 - 50 W, specifically designed for marking applications. These lasers deliver a high power laser beam directly to the marking head via a flexible metal sheathed fiber optic cable. The fiber based optical design and rugged mechanical design allows these markers to operate in an industrial environment where shock, vibration and dust are a concern. The F-Series fiber marker's unique design allows the overall package to be very small and modular for ease of integration into a variety of industrial applications.

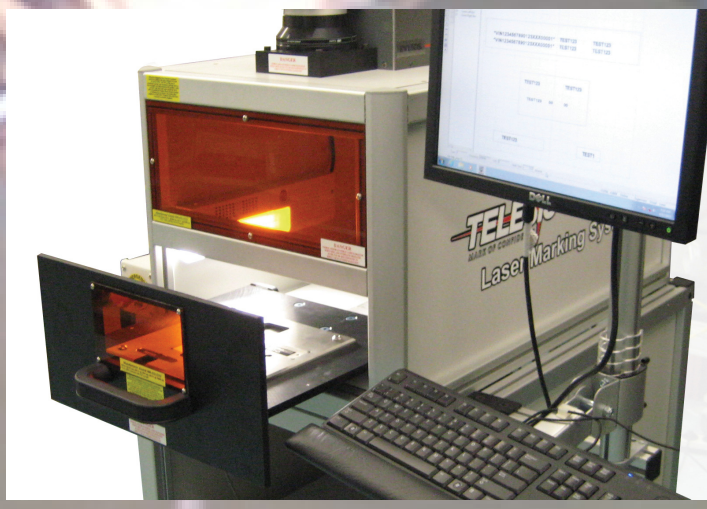
All Telesis fiber lasers are entirely air cooled and are powered from a single phase power outlet, and offer a best in class 100,000 hour MTBF diode reliability.

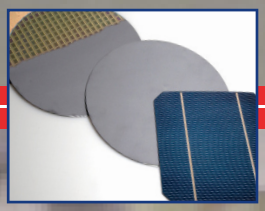
Telesis F-Series Lasers

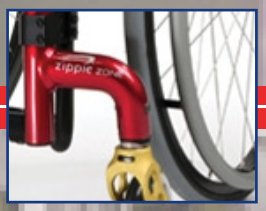
Fiber laser markers offer a very compact package that makes them ideal for integrated applications. The fiber laser offers a unique combination of power, finesse and low maintenance. They are ideal for marking metals and general material processing. The fiber laser is the laser of choice for removing material quickly.

Telesis fiber lasers offer extremely long diode lifetimes of more than 100,000 hours and are a stress free addition to any production line where power and speed are of the utmost importance.

Telesis was first to bring fiber lasers to the marking world, and we remain the leader in fiber laser technology and innovation.



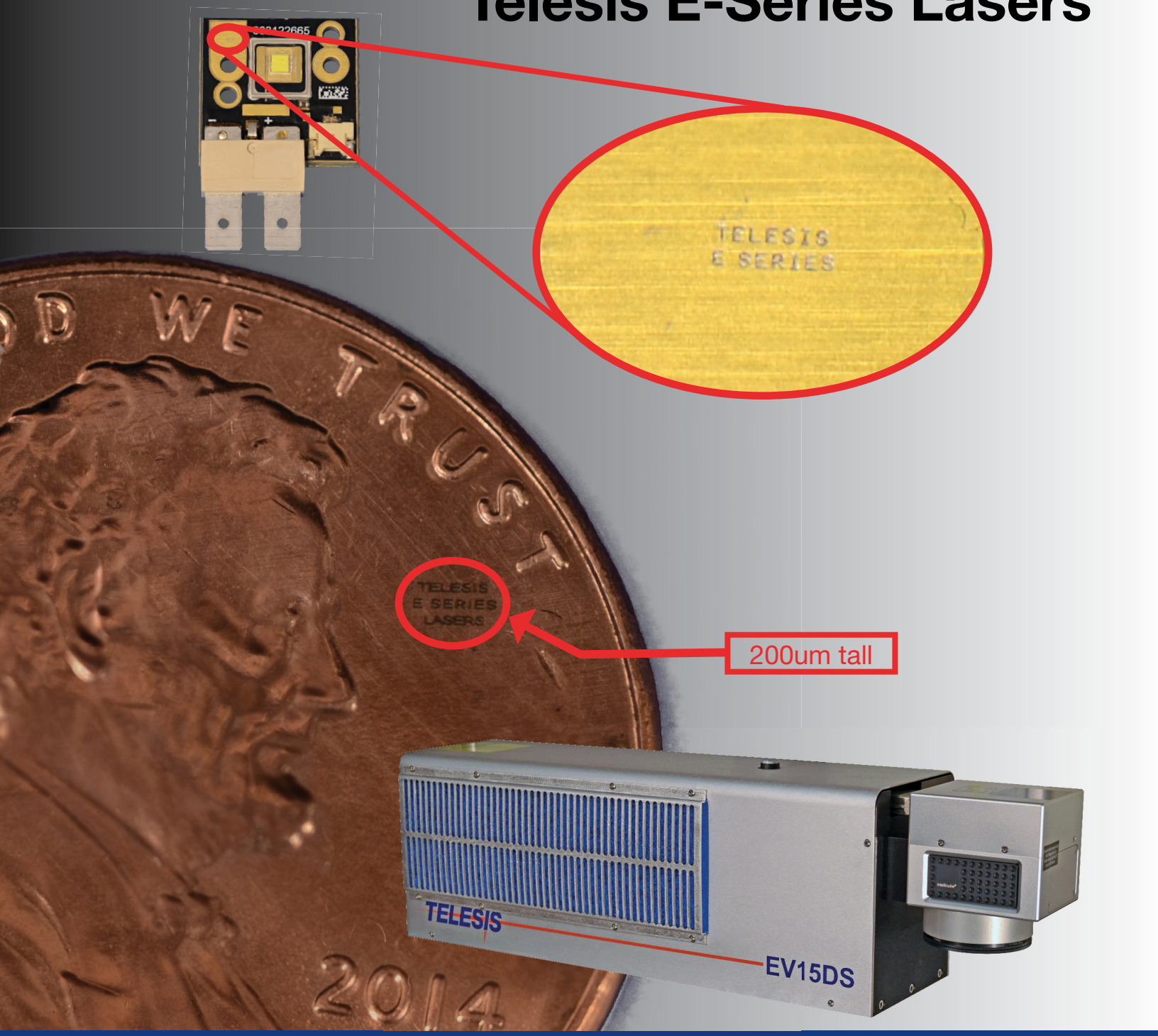




Telesis C-Series Lasers

Telesis C-Series Laser Markers are excellent choices for many plastic, fiberboard, anodized metal and label marking applications. They are perfect for “Marking-on-the Fly” as well as stationary marking. Due to their compact size, modular construction, and a unique three position rotatable scan head, these laser systems can easily be integrated into your embedded application. The RF-excited CO_2 tube assures along life cycle as well with virtually maintenance-free operation on the plant floor.

Telesis E-Series Lasers



E-Series lasers are the ideal tool for precision applications. The high quality YVO_4 beam offers several advantages over other near IR laser markers. The E-Series lasers offer smaller spot sizes, higher peak powers, shorter pulses, and are particularly effective on polymers and delicate materials. E-Series lasers are also available with Telesis's Vari-Z technology that can provide the ability optimize deep etching or to mark on multiple surfaces of differing heights. The air cooled E-Series lasers are durable and long lasting with many systems offering a pump diode MTBF of over 500,000 hours.

The E-Series - unmatched precision.

Telesis E-Series Lasers

Telesis vanadate lasers are designed to provide the highest quality mode possible in a commercial laser system. M^2 values play a significant role in the marking capability of a laser. A lower M^2 means smaller focal spot size.

- Because of lower M^2 values (approximately = 1.1) Telesis vanadate lasers can generate more consistent process results due to a longer working range and can eliminate need for high cost rotary stages under certain marking circumstances.
- Because of much better M^2 values, shorter pulses and much higher peak powers, Telesis EV lasers produce many times higher peak powers, which results in higher precision with less HAZ (Heat Affected Zone).

EV40

EV25

EV15

EV10

EVCDS

EVC

EV4GDS

EV4GDS is a 532 nm GREEN wavelength laser for precision applications that are not well suited for near IR or CO_2 wavelengths.

Telesis - A history of doing it right

2015 - Introduction of the compact UVC UV laser marker
Introduction of the Integrated In-Line Vision system
Autofocus sensor option introduced for Vari-Z lasers

2014 - Introduction of patented Dual Beam technologies with the FQD100 and FQ2H

2013 - Introduction Vari-Z technology

2012 - High power YVO_4 Vanadate EV40 Laser introduced

2011 - Compact low cost YVO_4 Vanadate EVC Laser introduced

2009 - EV4G Green Laser introduced

2008 - Telesis opens Fremont, CA Industrial Laser Center

2007 - Telesis introduces YVO_4 Vanadate E-Series line of lasers with 10EV laser marking system

2006 - Telesis brings the Express 5EY Nd:YAG marker to market

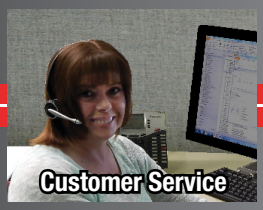
2004 - TLM500E enters the Telesis family of laser marking systems

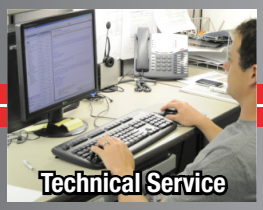
2003 - Telesis Introduces the first industrial fiber laser marker, the Zenith 10F

1999 - Telesis introduces our first laser marker

1982 - Telesis patents floating pin technology

1971 - Founded as Telesis Laboratories





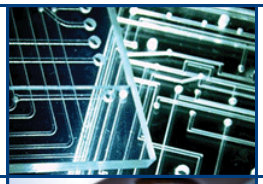
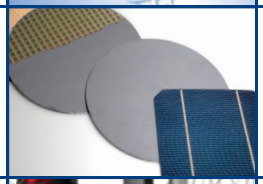
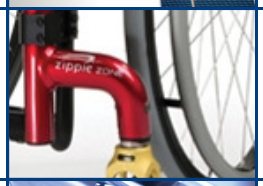
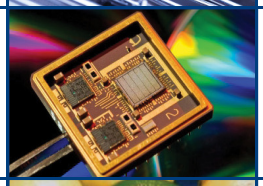
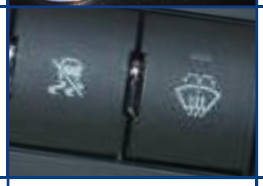
TELESIS offers a wide range of lasers to suit you marking needs:

- F-Series Fiber Laser Markers
  10, 20, 30, and 50 Watt systems available
- F-Series FQD Dual Head Marking Systems
  20-100 Watt systems available
- FQ2H Two Head Fiber Laser Markers
  Any combination of 20-100 Watt systems
- E-Series YVO_4 Laser Marking Systems
  8, 9, 10, 15, 25, and 40 Watt systems available
- E-Series EV4GDS Green YVO_4 Laser Marking Systems
- C-Series CO_2 Laser Marking Systems
  10, 30 and 60 Watt standard systems available

We back our customers with support and service for every system we build world-wide. This includes on-site installation and start-up by our experienced Field Service Engineers. They'll even train your operating personnel — further assurance that your TELESIS Marking System will perform dependably.

Telesis has the tools - allow our experienced applications engineers help choose the laser that is right for you.

Laser Applications Materials Selector

		U-Series	EV4GDS	E-Series	F-Series	C-Series
Glass		✓				✓
Ceramics		✓	✓			✓
Silicon			✓	✓	✓	
Aluminum		✓	✓	✓	✓	
Steels		✓	✓	✓	✓	
Gold and Precious Metals		✓	✓	✓		
Organics						✓
Silicones, Rubbers		✓	✓			✓
Plastics		✓	✓	✓	✓	✓
Lens Selection	 Focus dist / field size	F103/50mm F160/80mm F250/140mm	F100/45mm F160/90mm F250/170mm	F100/45mm F160/90mm F254/155mm F330/215mm F420/275mm	F100/45mm F160/90mm F163/110mm F254/155mm F330/215mm F350/250mm F420/275mm F163/120x210mm*	F75/50mm F100/70mm F150/100mm F200/140mm F250/170mm F300/205mm F360/250mm

Due to the wide spectrum of materials and specific requirements for each customer, we always recommend consulting the Telesis Laser Applications Laboratory for detailed process development and product recommendations.

* MerlinDM with FQD lasers only

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For more information on the entire line of flexible and programmable permanent marking systems please call your local sales office or visit us on the web at www.telesis.com