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The Wayback Machine - https://web.archive.org/web/20140723162751/http://www.coherent.com/products/?2103/Talisker-Ultra/


Coherent's Talisker Ultra Picosecond Lasers

Talisker Ultra

A mid-power level industrial picosecond laser for micromachining. The Talisker Ultra is available with three wavelength options in a single product, ideal for industrial process development and production.



Superior Reliability & Performance

- Lasers and Laser-based Systems
- Laser Measurement and Control
- Precision Optics
- Related Accessories

Overview | Products | Specifications | Features | Drawings | Literature

Coherent's Talisker Ultra industrial picosecond laser is available in three-wavelength options, operating up to 200 kHz. The Talisker Ultra features a mid-powered 16 Watt infrared amplifier (now also available in a short-head version) and built-in wavelength conversion to 8 Watt green and 4 Watt ultraviolet wavelengths. The product is available as an infrared only model, and as a combined green and infrared model.

The Talisker Ultra is widely used in process development where the broad wavelength capability offers easy comparison of custom process parameters for a range of industrial materials. Where a higher process speed is required and the process parameters are well known, then a higher power Talisker laser is available.

Picosecond lasers are established in a range of markets and applications where cold photo-ablation processing leaves a cleanly machined area that seldom requires post processing, resulting in a net productivity gain. Talisker Ultra is perfectly suited to precision micromachining of metals, plastics, glass, ceramics, and semiconductors where high throughput is required. Talisker Ultra lasers are particularly well suited to clean removal of thin film coatings, without substrate damage.

The Talisker was designed for low Cost of Ownership mass production sites. The modular design allows key components to be upgraded at the end user site. For total peace of mind, the product line is supported by Coherent world wide service support.

In addition to the flexible Ultra model, Coherent offers higher power, higher repetition rate models at single wavelength for faster throughput and a higher return on investment. For more information on those models, visit our Talisker 1000 and HE web page.

Product	Power	Energy
Talisker Ultra 355-4	4W	20 µJ
Talisker Ultra 532-8	8W	40 µJ
Talisker Ultra 1064-16	16W	80 µJ
Talisker Ultra 1064-16 - Short Head	16W	80 µJ

In addition to the flexible Ultra model, Coherent offers higher power, higher repetition rate models at single wavelength for faster throughput and a higher return on investment. For more information on these models, visit our Talisker 1000 and HE web page.

Talisker Ultra			
Wavelength (nm)	1064	532	355
Power (W)	16	8	4
Energy (uJ)	80	40	20
Pulse Rate (kHz)	200	200	200

Talisker Ultra*			
Wavelength (nm)	1064	532	355
Power (W)	10	8	4
Energy (uJ)	50	40	20
Pulse Rate (kHz)	200	200	200

*European Union export restrictions apply to products with more than 10W of infrared power. This product is rated to be export compliant.

Talisker Product Line
The Talisker product line is designed to provide a stable laser source over a broad range of optical specifications for industrial mass production applications. The product line is designed for Superior performance and reliability. Talisker Ultra offers wavelength three wavelength from a single laser head for advanced micromachining and cost effective application development.

Precision Pulse Energy Control at the Work Piece - Pulse energy equalization is a key feature delivered by the proprietary amplifier design used in Talisker Ultra. Constant pulse energy is maintained across a range of pulse rates, independent of burst length and consistently repeatable in your manufacturing process. On the workpiece, extremely low part-to-part variances are observed. A built in attenuator allows the pulse energy maximum to be set over a wide dynamic range from the rated pulse energy down to low rated values.

Smart Pulse Control - Ensuring that the spatial position of a micro-machining pulse is well synchronized to the timing of the laser pulse train and the scanning equipment is no trivial task. The Talisker laser amplifier and electronics work is close communication with other machine tool equipment to ensure that you machine where and when you want to. The Talisker laser offers precise triggering features and dynamic control of pulse amplitude to deliver on highly demanding process requirements. Smart Pulse Control™ features are important for microelectronic circuit patterning to ensure that you avoid unwanted short circuits, open circuits and spurious radio frequency parameters. Dynamic control of pulse energy through a burst is important for applications such as drilling and hole cutting. User input options for both analogue and digital inputs allow a range of automated processes to be delivered in mass production, without affecting the optical mode stability.

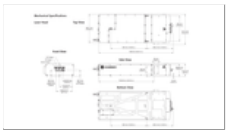


Fig. 1: Example of Smart Pulse Control using the Talisker to dynamically modulate the pulse energy and burst timing.

Astigmatism-Free Attenuation - Talisker comes equipped with an integrated waveplate attenuator, enabling optimal process quality at the required pulse energy while cutting down on integration.

Easy Install and Integration - Very short set up time and full control via RS232 and Ethernet, enabling automation, monitoring and remote control that can be integrated with tool software, reducing servicing needs and maximizing productive usage.

Talisker Ultra



Data Sheets *4 file(s) - Click to expand or collapse list*

- Talisker Ultra 1064-16 Short Head Data Sheet - *318 kb PDF*
- Talisker Ultra 1064-16 Data Sheet - *292 kb PDF*
  Talisker 500 Industrial Picocsecond Lasers
- Talisker Ultra 355-4 Data Sheet - *334 kb PDF*
- Talisker Ultra 532-8 Data Sheet - *346 kb PDF*

White Papers and App Notes *5 file(s) - Click to expand or collapse list*

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