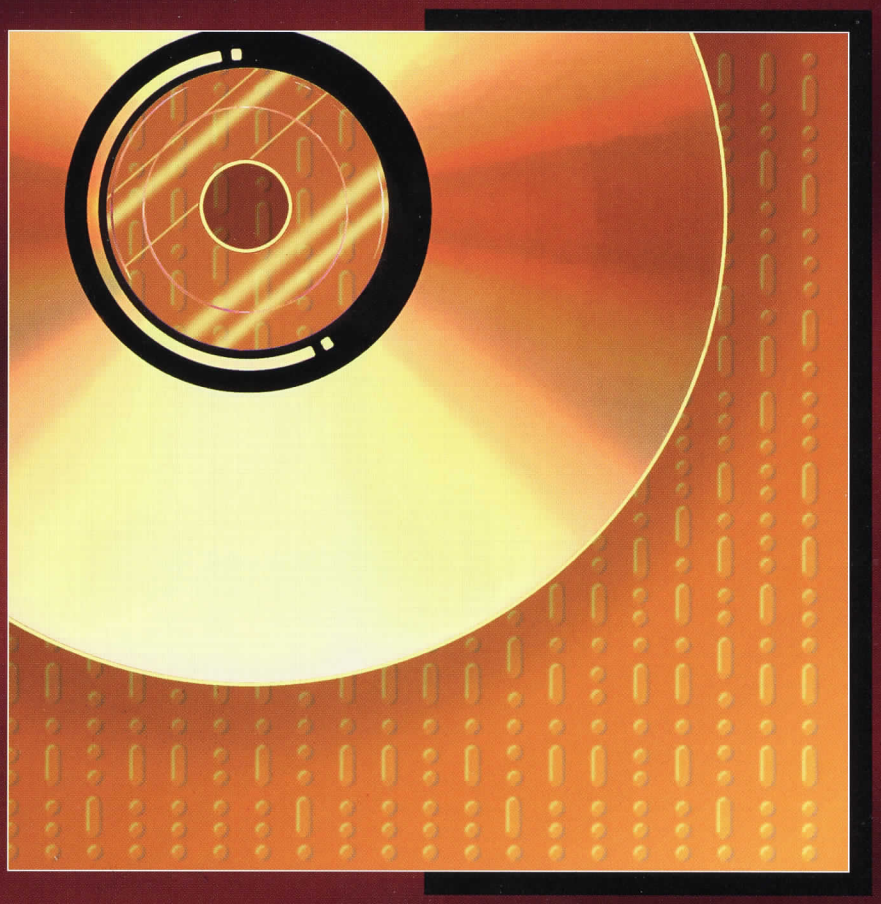
The Light Tracer™ Laser Beam Recorder



Trace®

Trace, founded over a decade ago, has emerged as a world leader in the provision of solutions for the manufacture and delivery of digitally recorded software, audio and video.

Trace's remarkable success is characterized by two essential ingredients:

- Leading edge technology
- Unrivaled customer support

Based in Silicon Valley, California, Trace maintains an extensive global sales and support network with offices in:

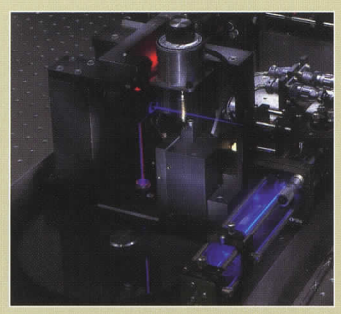
- Belgium
- Ireland
- United Kingdom
- Japan
- Hong Kong
- Singapore

Each satellite office provides full customer support and service including:

- Process engineering
- Field service engineers
- Spare parts

Trace®





The Concept

The Light Tracer was conceived and engineered by people who use it. Mastering experts, who have been key players in every facet of the optical disc revolution, committed to providing state of the art mastering technology accommodating all formats including DVD, while delivering stable, repeatable, controllable and proven performance.

The Design

The Light Tracer epitomizes technology mastered by delivering exceptional performance through intrinsic design elements such as:
Precision non-contact air bearings which cushion all moving parts of the optical table.

Mastering speeds capable of supporting future signal processing technology.

Compatibility with existing Photo-Resist Processes. Masters all formats including:

- DVD
- CD-R
- CD ROM
- CD AUDIO

The Software

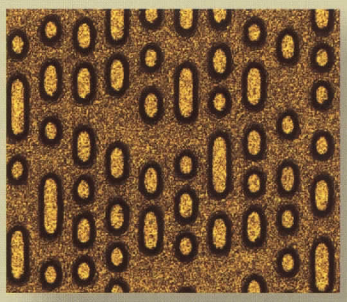
Trace's proprietary windows-based user interface controls key settings and functions of the LBR:

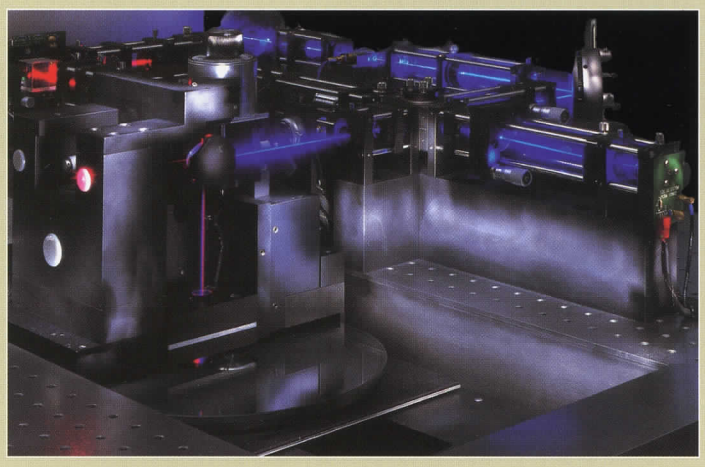
- Automatic selection of optimum LBR parameters, with point and click execution of tasks
- Integrated Light Probe™ diagnostics, for real time system monitoring
- Functional control of mastering software subsystems

Atomic Particle Accuracy

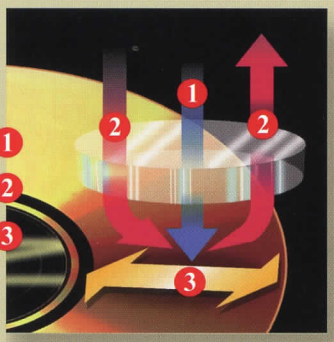
- The Light Tracer delivers atomic particle accuracy through a 43 Angstrom closed loop digital servo interferometer, resulting in superior track pitch production
- More than 8 million micro increments are made over the program area of the CD by a precision linear motor resulting in exceptional radial positioning

Light Tracer Lase





Superior Geometric Production



- The encoded laser beam is continuously monitored after the Acousto-Optic Modulator guaranteeing 100% signal integrity at the glass surface
- The encoded signal is verified to ensure compliance to industry standards and C1/C2 error detection
- No intermediate handling of encoded data avoids potential data corruption and signal degradation

DIAGNOSTICS BY LIGHT PROBE

- Totally integrated into the system, no auxiliary test or measurement equipment necessary
- Provides and displays performance data on: translation system, focus system, modulation signals, laser power, focus and start recording

r Beam Recorder

Three important parameters; translation, focus position and pit geometry are controlled by three separate lasers:

- A proprietary laser interferometer-based servo controls the translation positioning for superior track pitch geometry
- A red semiconductor laser maintains optimum spot geometry automatically through a closed-loop focus servo
- A proven Coherent Enterprise recording laser maximizes its intrinsic wavelength characteristics for optimum CD and DVD pit geometry

100% Signal Integrity

Read during write instantly detects any faults in the encoded laser beam.

Light Soft GUI

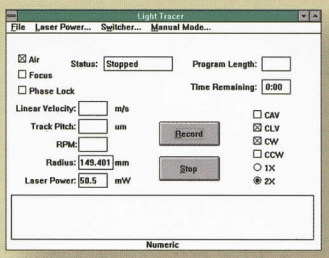
The Light Soft™ graphical user interface provides intuitive point and click access and control of sub-systems, calibration and set up, and diagnostics.

SUB SYSTEMS

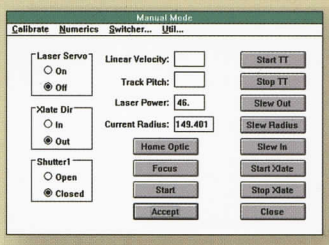
- One screen selects, starts, executes, stops and reports status of focus, track, pitch, linear velocity, laser power and more
- Automatically selects parameters and displays real time status of LBR

CALIBRATION AND SET UP

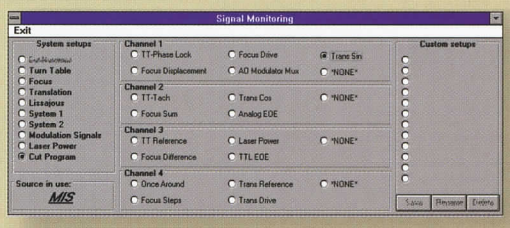
- Enables maintenance override of LBR functions for calibration
- Password protection prevents unauthorized access



Sub-system screen



Calibration and set up screen



Light Probe diagnostics screen

SPECIFICATIONS:

Environmental:

Class 1000 clean room recommended with positive air pressure (Laser chiller typically located outside the clean room).

The LBR cabinet has a built in HEPA filter to assure maximum yields and minimum error rates

F40GO or F96T12GO Safelight required.

65-75 degree F ambient temperature. (Desirable 68° ± 1° F)

40-50% relative humidity is common.(Desirable 45° ± 2% RH)

Input Requirements:

Electrical:

Recording Laser 208-240 VAC 50.0 amps single phase three wire with ground

Laser Chiller 110-120 VAC at 20 amps

Control/Source 110-120 VAC at 25 amps

Optical Table Cover 110-120 VAC at 15 amps

Air:

120 PSI minimum with at least 5 cfm

Oil and particle free (0.2 micron)

Dew point under -20 degrees C

Physical Dimensions:	Height	Width	Depth	Weight
LBR Optical Table Cover	67"	52"	48"	150 lbs
Optical Table	50"	41"	41"	1000lbs
Control Console	87"	24"	30"	600lbs
Source Console	87"	24"	30	600lbs

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