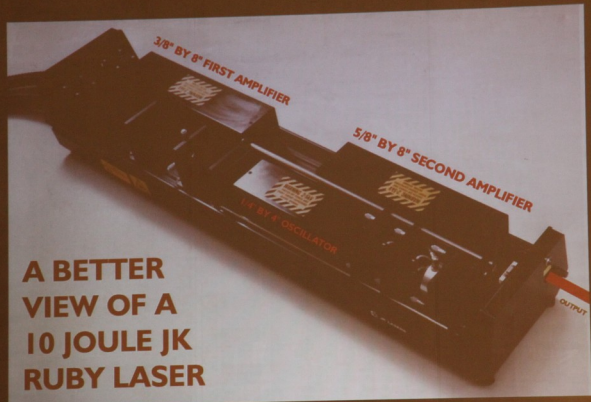
A decorative square wall panel with a complex, symmetrical geometric pattern, possibly a traditional Islamic or Middle Eastern motif, mounted on the wall to the left of the screen.

PULSED LASER HOLOGRAPHY SIMPLIFIED BY DIGITAL PHOTOGRAPHY

E. Wesly

Studio of E. Wesly & Associates

A black and silver speaker on a wooden stand, positioned in the foreground to the right of the laptop operator.A man in a green shirt sitting at a desk, looking down at a laptop. A pen is visible on the desk next to the laptop.



**A BETTER
VIEW OF A
10 JOULE JK
RUBY LASER**



technology

INSIDE JK LASERS



Photo: Courtesy of Lumonics Inc.

Ed Wesley

Even the competition would have to agree that JK Lasers are the very best ruby lasers ever made for holography.

diodes are usually referred to as semiconductor lasers to avoid confusion.

product lines were developed, integrating certain components into basic models.

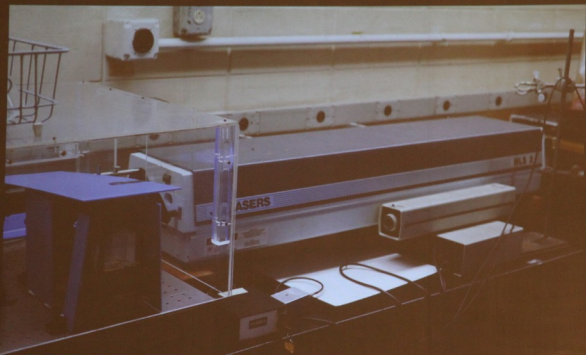
Ruby was the first material to laser

Wesley, Ed. "Inside JK Lasers." *holosphere*, Volume 15, #2, Summer 1987, pp. 12-15.

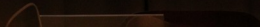
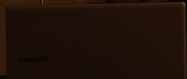
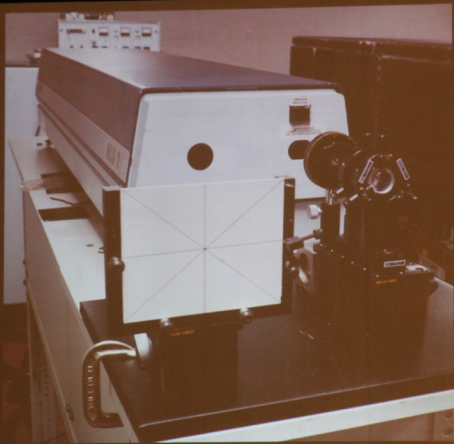


Choy Anai T

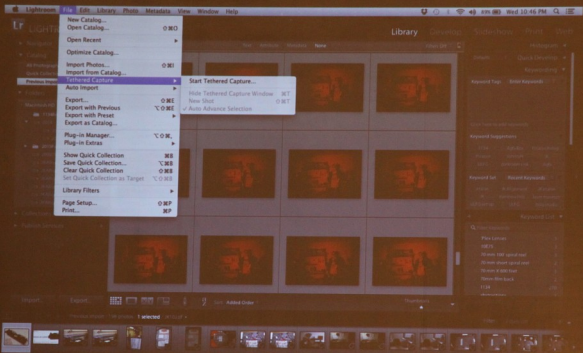
Jan 87



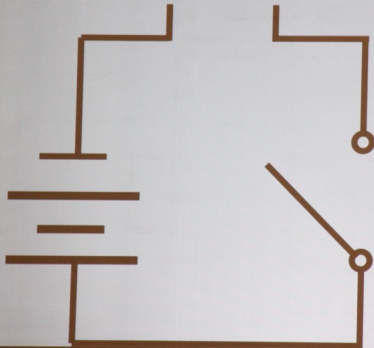
THE
ANAÏT LABORATORY
FOR
PULSED LASER
HOLOGRAPHY



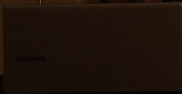
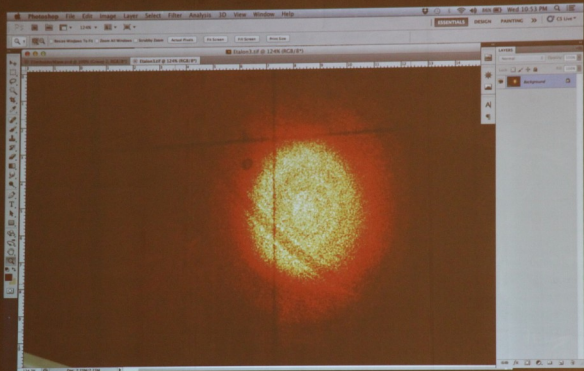




TO
EXTERNAL TRIGGER
ON LASER



PC SYNC
ON CAMERA



OPERATOR'S MANUAL

Ref: OP.1

HOLOGRAPHIC LASER SYSTEM

Model : HLS2

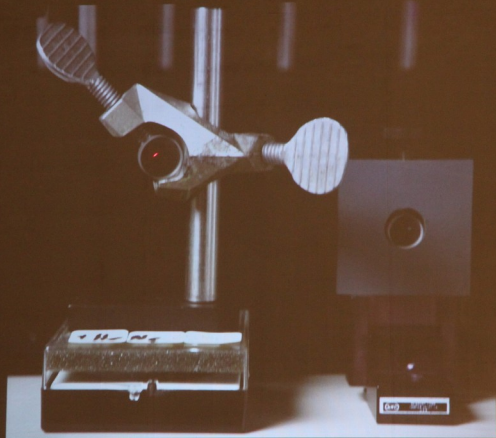
Serial No: 5 1051 0

Customer: A Stephens

Operating Voltage/Frequency: 208V / 60Hz

MANUFACTURED BY:

LUMONICS LTD
Cosford Lane
Swift Valley
Rugby

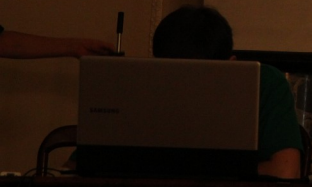
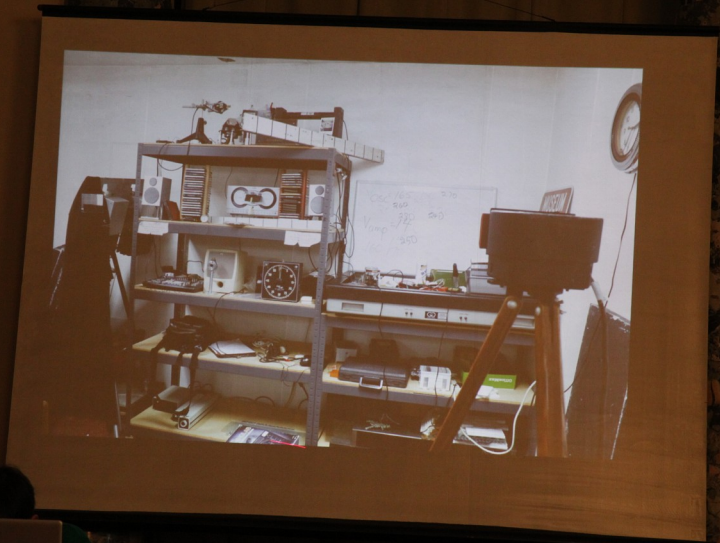


ETALON TUNING

The purpose of the etalons is to increase the coherence length of the laser by restricting the bandwidth in which lasing occurs, and for satisfactory operation of the oscillator there must be coincidence between a transmission peak of each etalon and the peak in the fluorescence curve for the ruby - see Figure 8.1.

The thin etalon is first fitted and angle-tuned, and then the thick one. This latter is more critical to adjust, since its thickness and high reflectivity mean that beam 'walk-off' can be a problem if the tuning tilt is too great (resulting in a poor beam shape and a degraded finesse value), whereas if the tilt is too small fringing is obtained on the oscillator output beam because of interference effects.

- 1) Set up the negative lens outside the laser cavity to provide a beam of divergent light and to avoid damage to the analysing etalon.
- 2) Set up the analysing etalon beyond the lens in a plane where the diverging beam is 10 to 20 mm in diameter.
- 3) Set up a suitable screen a metre or so beyond the etalon.
- 4) Operate the laser at 40 mJ and with the Pockels cell switched off (since the wavelength varies too much from shot to shot when the oscillator is Q-switched). Note that, for the 1 Hz version of the HLS1, the etalon tuning varies with the repetition rate, and the complete tuning process should be carried out both at 1 Hz and at 10 ppm.
- 5) With the room darkened, examine the ring structure projected onto the screen when the laser is fired. A series of concentric circles will be seen, well spaced at the centre, but closer together further out and of gradually decreasing intensity. Adjust the x-y position of the lens to centre the beam on the ring structure.



GEVAERT

AGFA-GEVAERT

BLEIKTE IN DE DONNERSDAGEN TE
OPENEN.
A THUNDER ON EN EVENING HOURS
AND IN THE EVENING OPEN ONLY
OPEN ONLY IN BELGIUM

HOLOTEST

DE GARANTIECLAUSULE IN DE VER-
PAKING
THE SEPARATE CLAUSE IS EN-
CLOSED IN THE PACKING

HOLOTEST FILM

10E 75 P3 AH
2x70mm x 600ft
P 2xCNP3 EI
46758029
2H9WU
MADE IN BELGIUM

The benefits of calibrating the photographic camera to the holographic camera are many. If the camera sees sufficient light based on previous calibrations and correlations, then it's OK to develop the plate.

And if the camera senses more light than usual, (these lasers are capable of playing tricks light that, although they do have a reputation for consistent repeatability), then there is a heads-up to the development department to pull the plate out early.

But if the camera doesn't sense enough light, or if the expression on a portrait subject is less than flattering to the camera, or if triggering on an event, the trigger was too early or late, the plate could be put aside to be erased and reused.

The camera can be positioned where the subject sits in a portrait set up, to look for stray beams that could be dangerous. And also placed at the viewpoint of the holographic plate to look for the same.

Maybe arouse some interest in these great old beasts and resurrect them.

These types of diagnostic photographs could have been made in the era when the JK lasers were fresh out of the shipping crate, or even back in Maiman's day, but imagine how much it would have cost to do all this with Polaroid film!

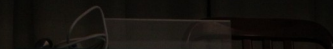
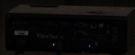




Shout Outs

Would like to give a word of thanks to Rick Bruck, Bob Hess, and Victor Heredia for spending countless hours with me trying to troubleshoot the JK when it's in one of its moods, and a special shout out to Tommy Johnson for all his insights into the electronics of the device.

And of course, my dear old friends who are no longer with us, TJ and Anait, who gave me the gift of ruby light.





The JK Club

The JK club consists of myself, Rick Bruck (who has the Holicon laser), Tommy Johnson, (an Applied Holographics Holo-Printer take out Series 2000) and Harris Kagan at Ohio State University in the USA, with the Ana Maria Nicholson/Holo-Center laser. And maybe others will join who might dust off some balky old equipment to get it working thanks to this new tool that makes pulsed work easier.

