

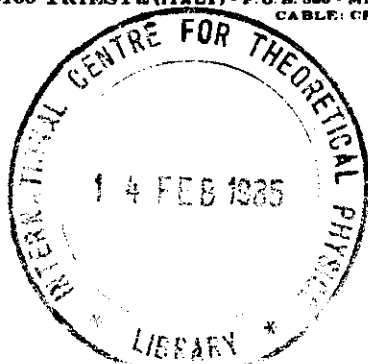


INTERNATIONAL ATOMIC ENERGY AGENCY  
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION



INTERNATIONAL CENTRE FOR THEORETICAL PHYSICS

34100 TRIESTE (ITALY) - P.O.B. 586 - MIRAMARE - STRADA COSTIERA 11 - TELEPHONE: 224281/2/3/4/5/6  
CABLE: CENTRATOM - TELEX 460392 - I



SMR/115 - 21

WINTER COLLEGE ON LASERS, ATOMIC AND MOLECULAR PHYSICS

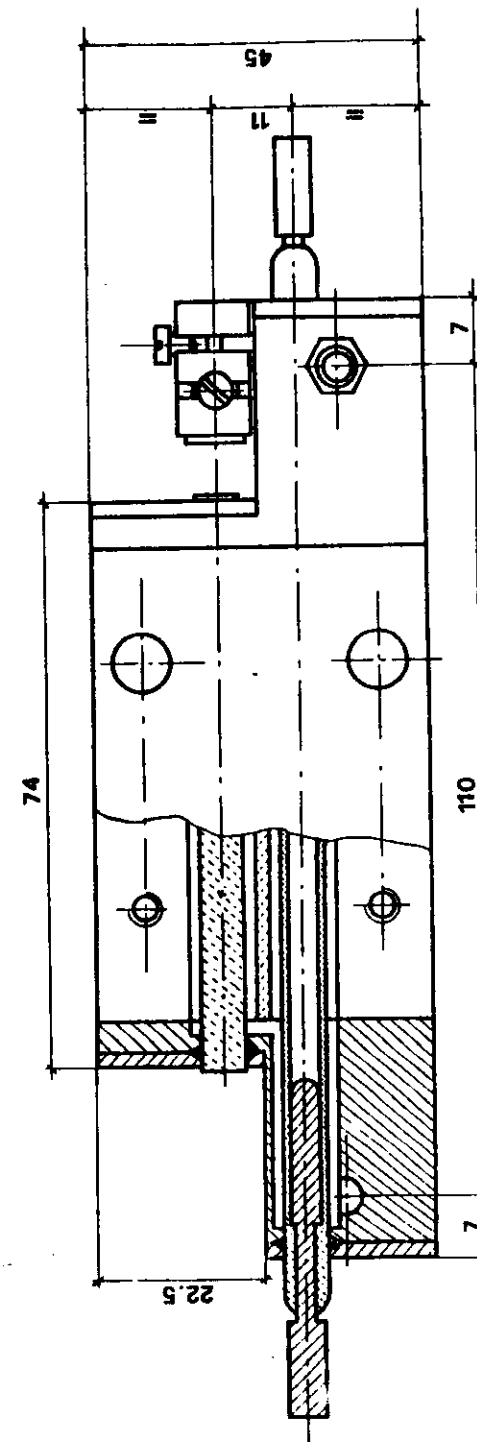
(21 January - 22 March 1985)

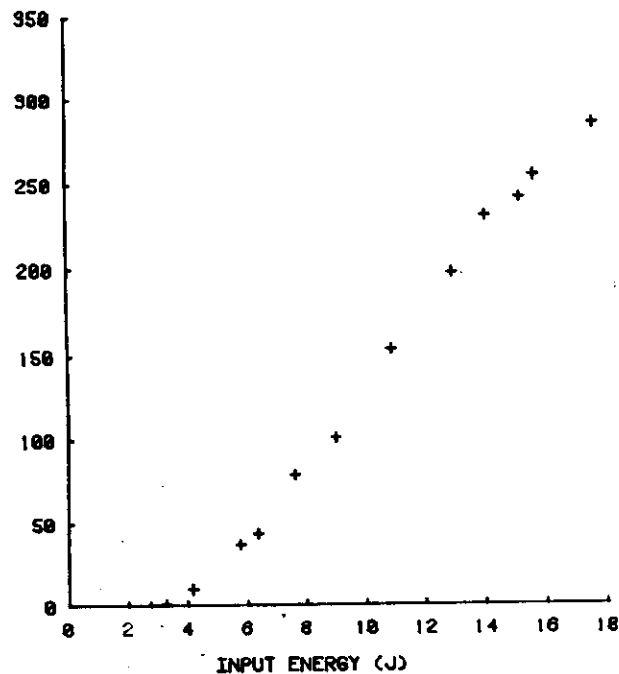
LASER LABORATORY NOTES

L. PALLARO  
Centro di Elettronica Quantistica  
e Strumentazione Elettronica  
Istituto di Fisica del Politecnico  
Piazza Leonardo da Vinci, 32  
20133 Milano  
Italy

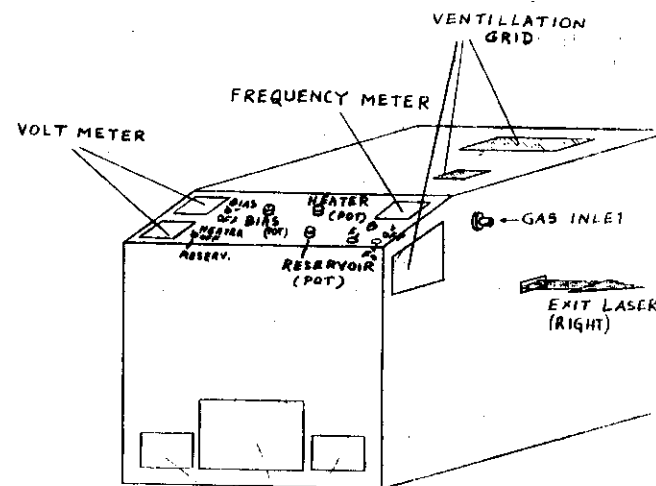
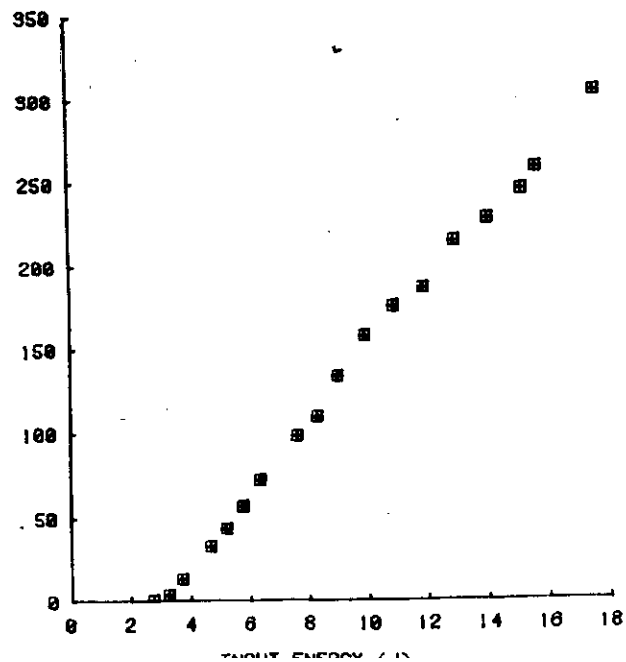
These are preliminary lecture notes, intended only for distribution to participants.  
Missing or extra copies are available from Room 229.

Nd:YAG LASER CAVITY ASSEMBLY



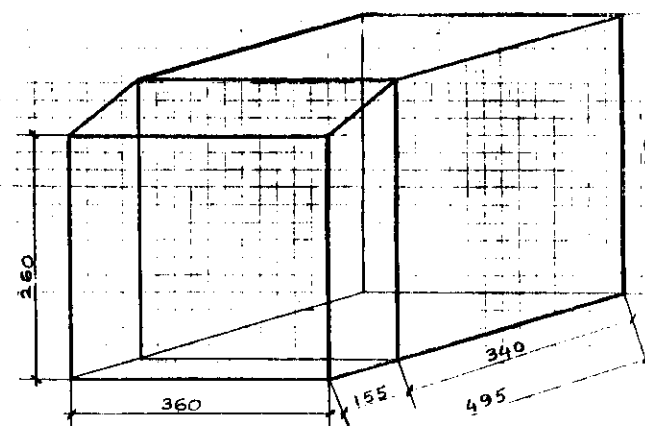


I/O CURVE FOR CEO LASER CAVITY R1=100%, R2=60%

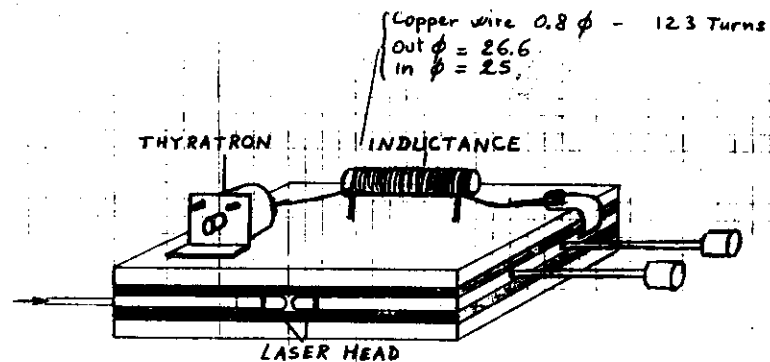


NITROGEN LASER

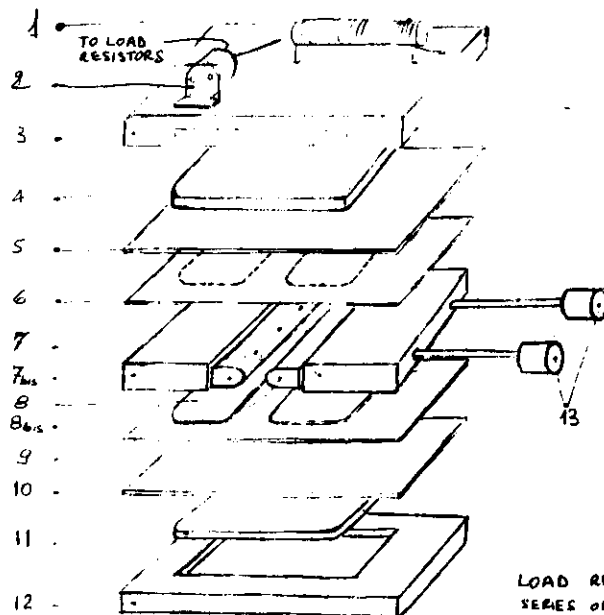
LASER CHASSIS



LASER CHASSIS



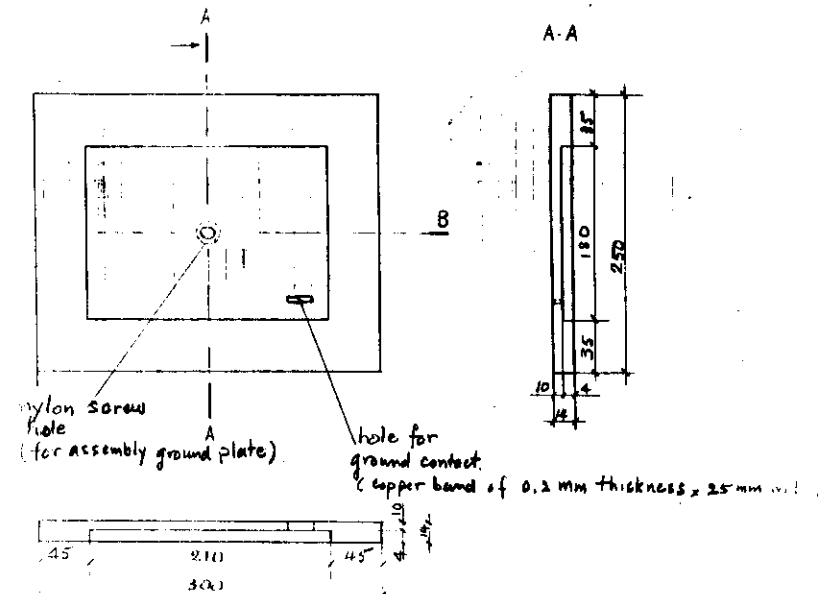
LASER HEAD AND THE THYRATRON ASSEMBLY



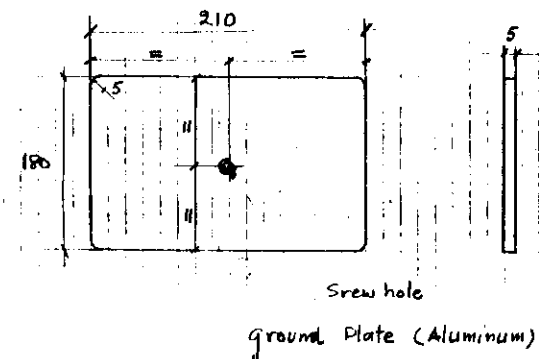
1. INDUCTANCE
2. THYRATRON
3. SUPPORT PLEXIGLASS
4. GROUND-PLATE AL
5. NYLAR SHEET
6. H.V. PLATE
7. ELECTRODE SUPPORT
- 7<sub>bs</sub>. " "
8. ELECTRODE (AL)
- 8<sub>bs</sub>. " "
9. H.V. PLATE
10. NYLAR SHEET
11. GROUND PLATE (AL)
12. SUPPORT PLEXIGLASS
13. SCREW DRIVERS

LOAD RESISTORS:  
SERIES OF 16, 39 K $\Omega$  - 50 W EACH  
WIRE-WOUND TYPE

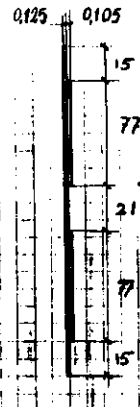
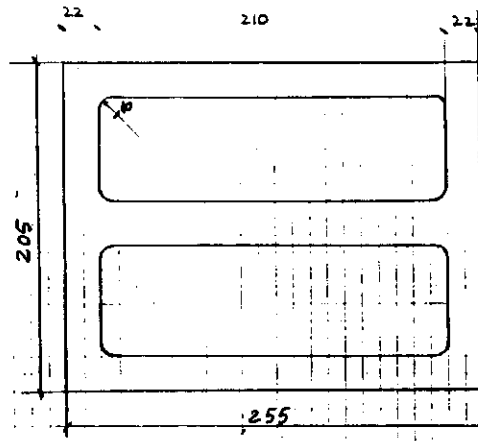
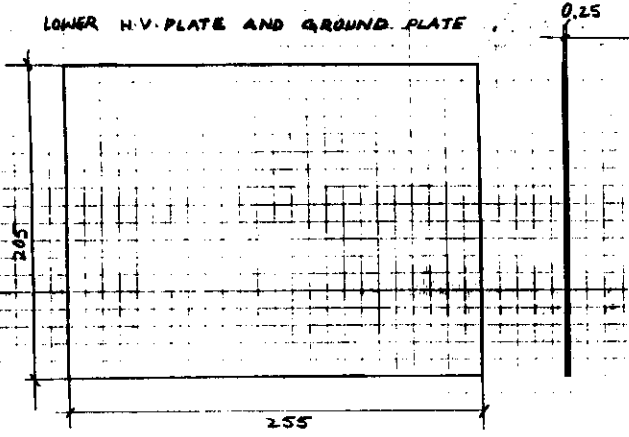
Material: PLEXIGLASS



Material: ALUMINIUM

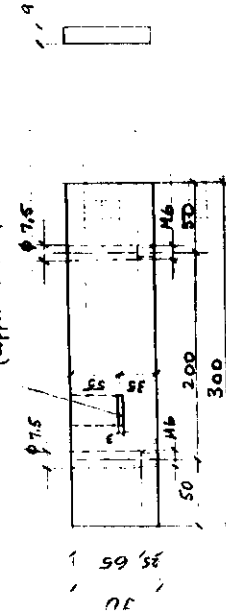


3 MYLAR SHEETS BETWEEN GROUND PLATE  
AND H.V. PLATE. THREE MYLAR SHEETS ARE PLACED BETWEEN  
LOWER H.V. PLATE AND GROUND PLATE



Material:  
PLEXIGLASS

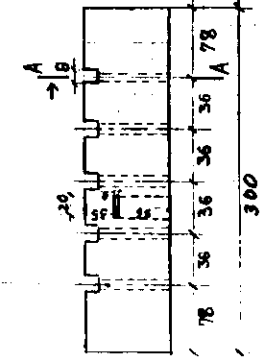
Slot for H.V. contact  
(Copper band of 0.2mm x 25mm)



Material: PLEXIGLASS

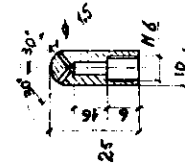
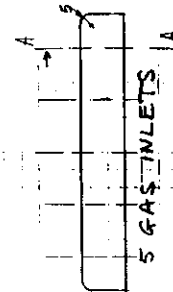
HOLE FOR GAS INLET  
SILICON TUBING

SLOT FOR H.V.  
CONTACT

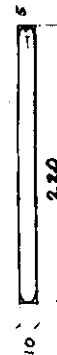
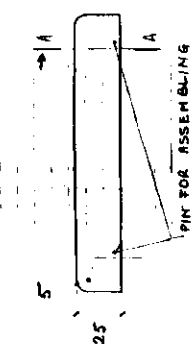


Material:  
ALUMINUM

Sec. A-A

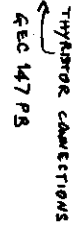


Sec. A-A

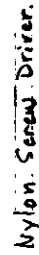


The electrode surfaces must be polished  
(accuracy: 2µm)

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When assembly put a valdyt glue

Nylon. Screw Driver.



when assembly put araldyt glue.

Mylar sheet with copper layer

ISOLA SpA

Mylar Thickness: 125  $\mu$ m

FABBRICAZIONE ISOLANTI ELET.

Copper " 105  $\mu$ m

VIA PALESTRO, 2

20121 MILANO

Tel. 02-79551

Telex 310259 ISS MIL

+RYSTOR : GEC 147 PB

Mylar Thickness 250  $\mu$ m

DANIELLI

Via MONTEFELTRO 4/6

20100 MILANO

Tel. 02-3086246

Thyatron Grounded Grid Thyatron HY1102

Pulse Transformer. Transform ratio 1:1

TK 181

EG&amp;G Electrooptics division

35 Congdon Street Salem

Mass. 01970

Twx 710-347-6741

Tel. 617-7453200

POWER SUPPLY H.V. mod. BAC 22-80 (22KV - 80mA)

For example:

UNIVERSAL VOLTRONIX  
CORPORATION

27 Radio Circle Drive

Mount Kisco New York 10541

## MATERIAL AND MATERIAL PROCESSING SPEC.

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- MATERIAL : GALVANIZED IRON SHEET

- SUPPLIER : 0.8mm THICK

- MATERIAL PROCESSING :

- NOTES : FITTED ON: A FRAME MADE OF 15mm IRON  
SHEET, BENT IN 15x15 [SQUARE CROSS-  
SECTION]

MATERIAL AND MATERIAL PROCESSING SPEC.

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7

- MATERIAL : MYLAR  
- SUPPLIER : DANIELLI  
VIA MONTEFELTRO 4/6  
20100 MILANO  
Tel. (02) 3086246

- MATERIAL PROCESSING :

- NOTES : 3 SHEETS FOR EACH  
CONDENSER  
THICKNESS OF EACH SHEET:  
250  $\mu$ m

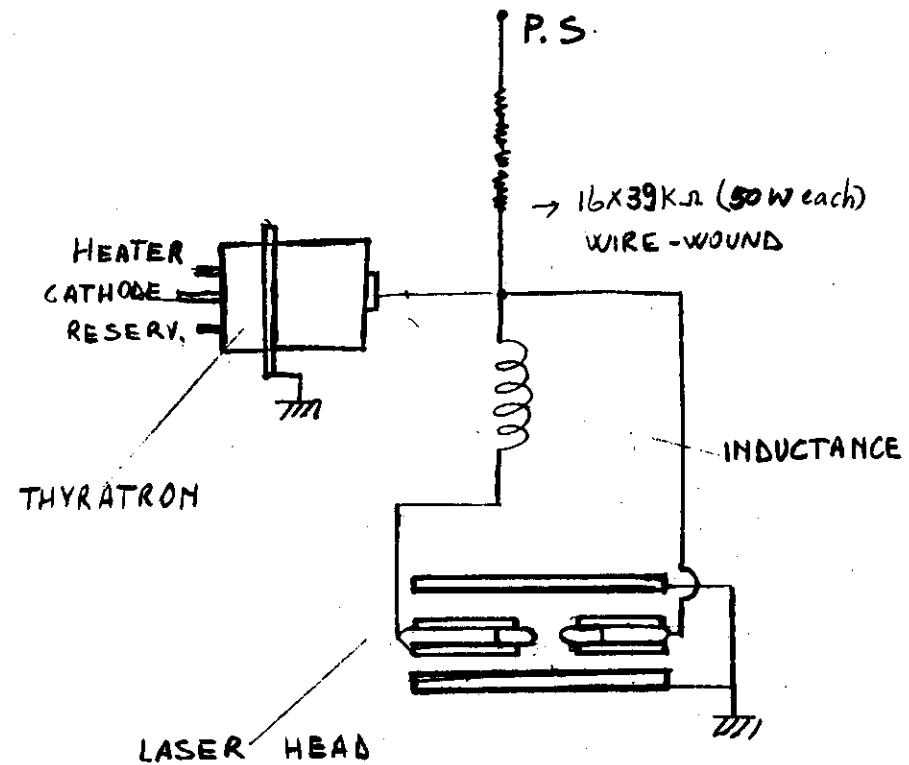
MATERIAL AND MATERIAL PROCESSING SPEC.

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- MATERIAL : MYLAR SHEET WITH COPPER  
LAYER  
- SUPPLIER : ISOLA SPA  
FABBRICAZIONE ISOLANTI ELETTRICI  
VIA PALESTRO, 2  
20121 MILANO  
Tel. (02) 79551  
Telex 310259 ISS MIL

- MATERIAL PROCESSING :

- NOTES : MYLAR THICKNESS 125  $\mu$ m  
COPPER-LAYER THICK. 105  $\mu$ m



LASER HEAD AND THE THYRATRON ASSEMBLY