337-i OEM Laser Systems

Air-Cooled Nitrogen Lasers

User's Manual

Spectra-Physics

1350 West Middlefield Road
Mountain View, CA 94043

Part Number 999999-01

LASER INNOVATIONS
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OEM VSL-337i NITROGEN LASER* SPECIFICATIONS

Catalog No. 337999-01

Wavelength	337.1 nm	(1)
Spectral Bandwidth	0.1 nm	
Repetition Rate	0 - 20 Hz	
Pulse Width	<4 ns (FWHM)	(2)
Pulse Energy	Adjustable, 150-200 uJ	
Peak Power	40 kW	
Average Power at 20 Hz	3 - 4 mW	(3)
Delay Time (nominal)	600 ns	
Beam Size	3 x 7 mm	
Beam Divergence (full angle)	5 x 8 mrad	
Pulse to Pulse Stability	3 % standard deviation (at 10 pps)	
Trigger Mode	External only	(4)
Power Requirements	+ 24 volts	(5)
Dimensions	11"L x 3.75"W x 3.75"H	
Weight	7 lbs.	

provider of low cost laser light from UV through IR

(1) Nitrogen laser utilizing sealed plasma tube, energy storage capacitors, and switch in one plasma cartridge.

(2) Pulse width is defined as the time interval between half intensity points of leading and trailing edges of the pulse (FWHM).

(3) Warranted to produce greater than 1.6 mW average power at the end of 20 million pulses or two years, whichever comes first.

(4) External trigger requirements are 50 ohm source, TTL level, of 1 to 100 microseconds max. Maximum repetition rate is 20 pps. Input is opto-isolated.

(5) The laser requires a power supply of +24 volts, one ampere capacity. Regulation must be +1%/-5%.

Specifications are for lasers operated at room temperature.

*This laser is an OEM model, it does not comply with the Center for Devices and Radiological Health (CDRH) regulations in regards to time delay, remote interlock and warning labels. Please notice that this laser can only be sold for OEM use and the equipment in which the laser is being used must, as a unit, comply with CDRH regulations.

Rev. 4/96

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OPERATING INSTRUCTIONS

1. The nitrogen laser produces pulses of 337 nm radiation with a pulse energy of 150-200uJ and 3 ns duration. At 20 pps average power is in excess of 2 mW.

2. Since this laser is an OEM model, it does not comply with the CDRH regulations with respect to time delay, remote interlocks and other labels. Please notice that this laser can only be used for OEM use and the equipment in which the laser is being used must as a unit comply with these regulations.

3. The laser requires a power supply of +24v, one Ampere capacity. The regulation must be +1%/-5%.

4. External trigger requirements are 50 ohm source TTL level, positive pulse 1 to 100 us max. Maximum pulse repetition rate is 20 pps.

5. Best EMI performance is with the case grounded. The threaded hole on the control panel can be used. First run through the hole with a 1/4-20 tap to remove the paint. Then use a brass screw for grounding. Ground this with a piece of 1/2 inch wide braid which is 6" long or less.

   The wire to the 24 volt power supply should be 6" long or less. The cable used for the trigger signal should be a 4' RG58C/U BNC cable (or shorter).

6. To remove the entire laser from the housing, remove the perimeter screws only from the control panel and the two screws from the bottom plate. The assembly can then be removed in one piece.

7. The hole labeled HV ADJ allows access to the high voltage adjustment control. The voltage is adjustable from 13KV to 18KV and is set at the factory at 17.7KV. As power decreases overtime, the high voltage can be increased to offset and keep energy constant. It is now time to order a replacement cartridge. (Cat.# 337991)

Rev. 12/95

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ADDITIONAL SPECIFICATIONS FOR THE OEM VSL-337i NITROGEN LASER

Control Panel contains:
1) LED which comes on when 24 volts is supplied

2) A trigger-in BNC connector/receptacle

3) A .19" diameter hole to insert a straight edged screw driver to adjust the high voltage

4) A 10-32 threaded hole for a grounding screw

5) A +24 volt power jack, receptacle (female) #D01EEB 306 FST
plug (male) #D01PB 306 MST
Manufactured by: Hypertronics Corp.
16 Brent Drive
Hudson, MA 01749-2904
Tel: (508)568-0451
Fax: (508)568-0680

Front Panel contains:
1) A shutter to block the nitrogen laser beam

2) Two 8-32 mounting holes for attaching a dye laser module

Bottom of Chassis contains:
1) A 1/4-20 mounting hole for pin mounting to tables or benches

INSTRUCTIONS FOR REPLACING THE PLASMA CARTRIDGE.

1) First remove the entire laser from its housing (cover) by removing the perimeter Phillips head screws **only** from the control panel and the two button head screws from the base of the housing. The laser assembly can then be removed in one piece. (It may be a tight fit so you might have to use a straight edge screw driver between the housing and the control panel to pry them apart)

2) Disconnect the Trigger and High Voltage cables.

3) Disconnect the ground wire.

4) Remove the three allen head screws that hold the plasma cartridge to the base (2 in the rear and 1 in front).

5) Install the new plasma cartridge in the reverse order. Be sure the grounding wire is not sitting on top of the high voltage cable. Any excess wire should be positioned between the cartridge and power supply.

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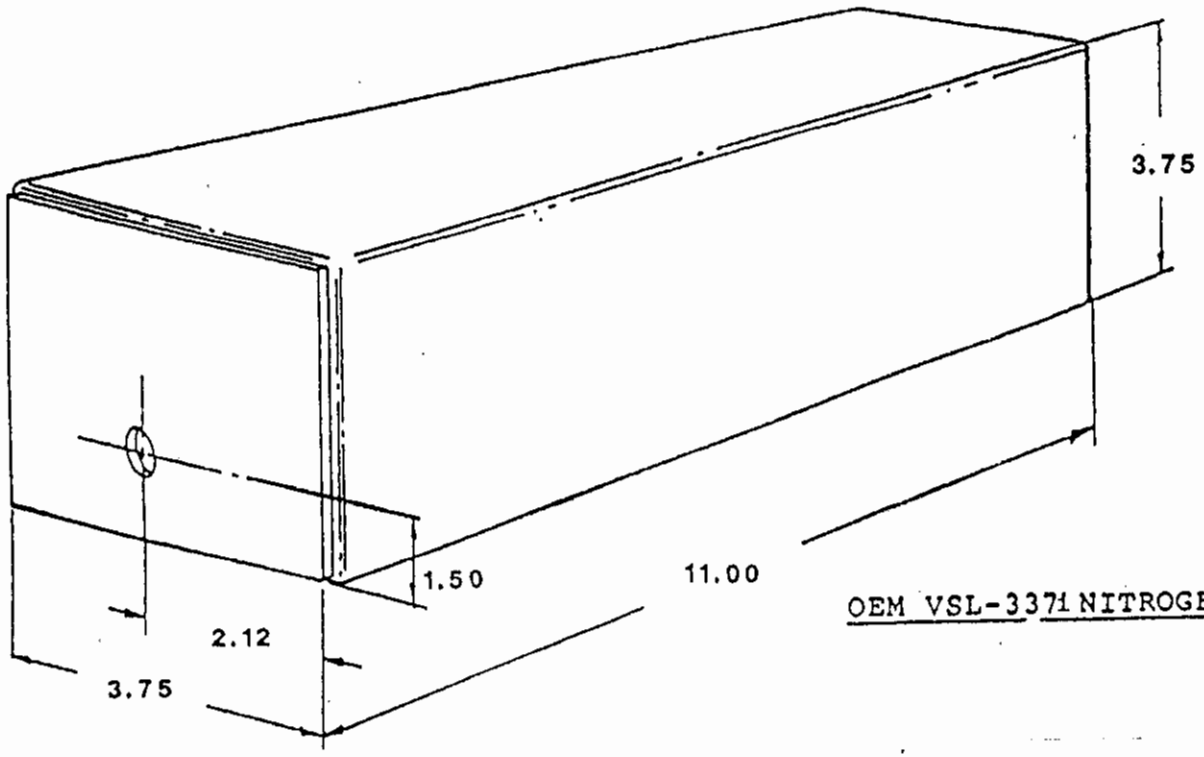

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REV	DESCRIPTION	DPTO	CHK	DATE
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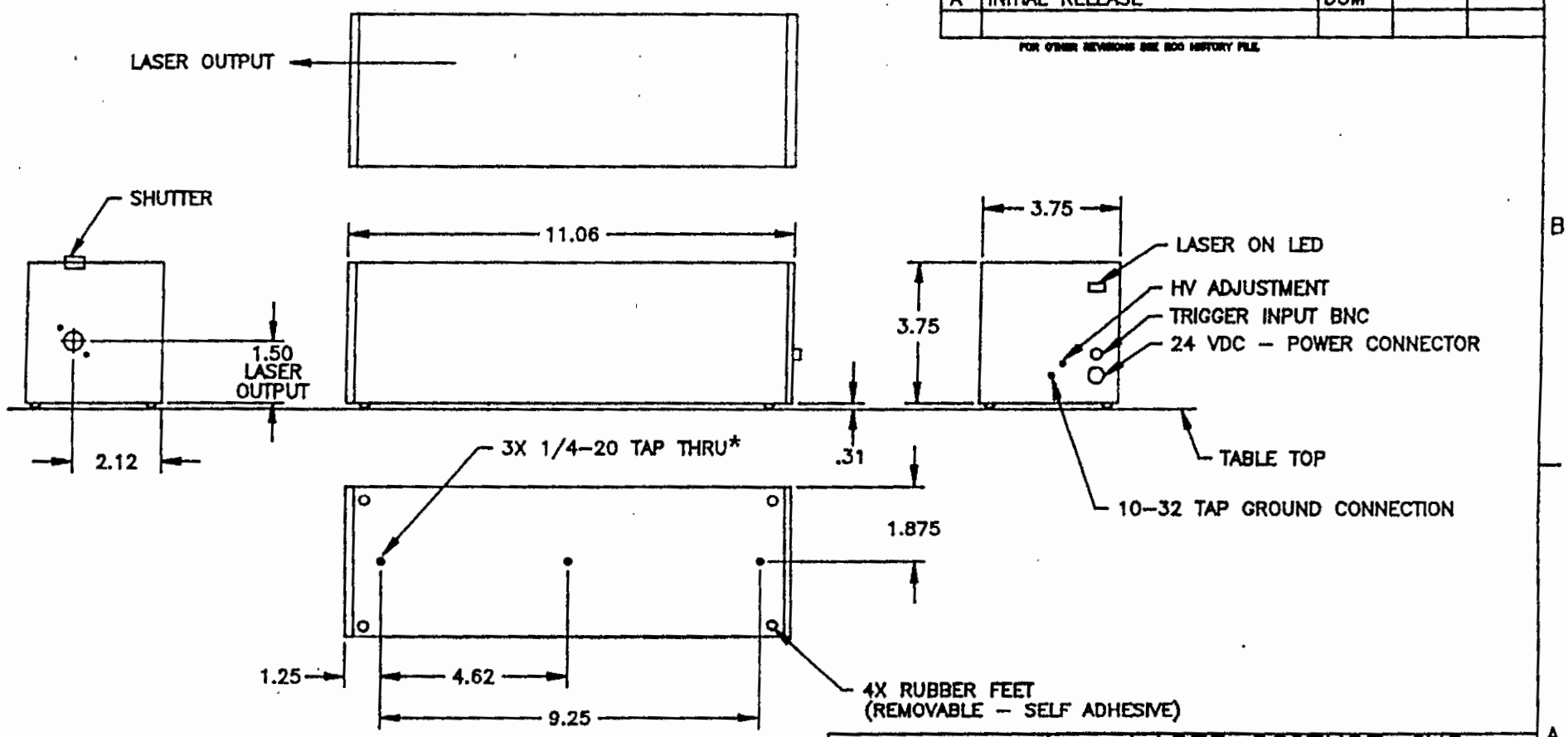
FOR OTHER REVISIONS SEE ECO HISTORY FILE



*Mounting holes

IF NOT SCALE DRAWING

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

TOLERANCES
FRAC ±1/32
DEC .XX ±.01
.XXX ±.005
ANG ±1/2°
SURFACE 125 µIN Ra MAX
ANSI Y14.5M–1982

REMOVE ALL BURRS

BREAK SHARP EDGES

PROJECTION

SIMILAR TO	NEXT ASSY	USED ON

LASER SCIENCE, INC

DRAFT	DATE	CHECKED	DESIGN ENGR	MFG ENGR
DOM O.	2/23/96			

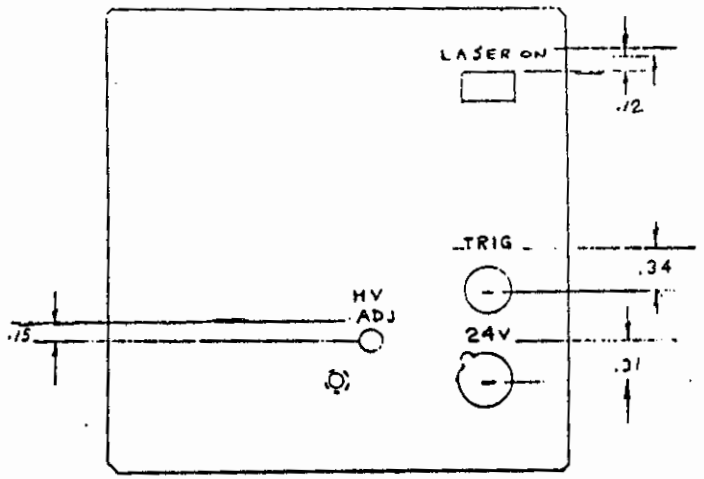
OUTLINE DRAWING
VSL – 3371

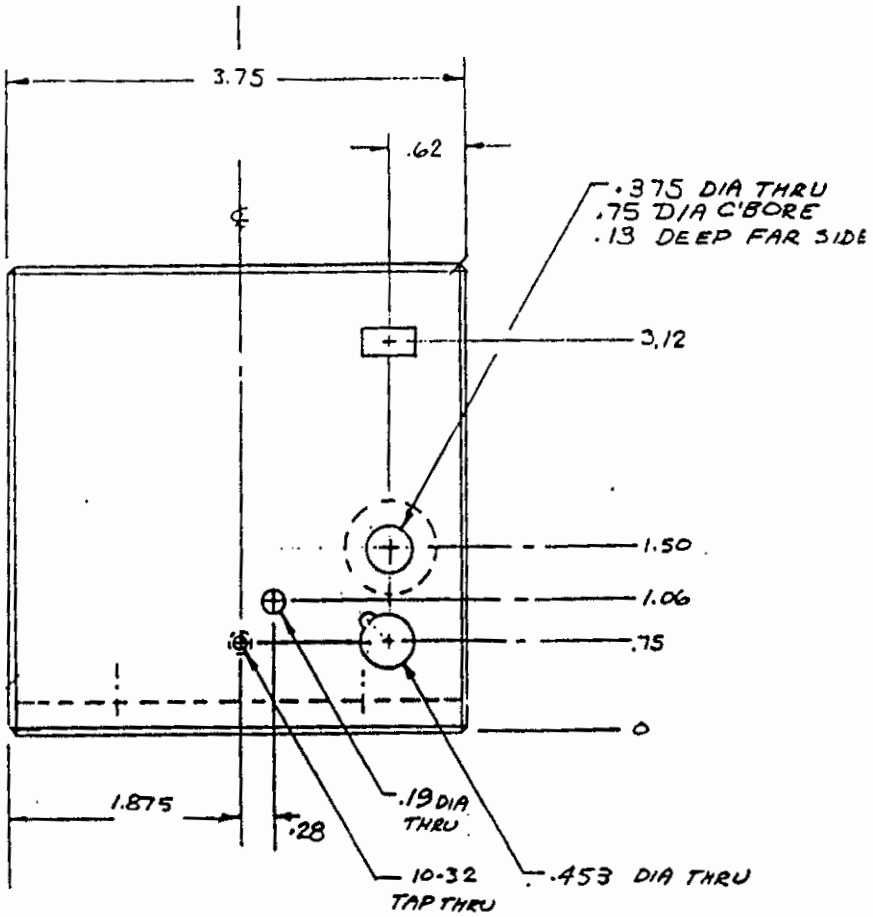
MATERIAL: —

FINISH: —

SIZE	DRAWING NO.	REV.
B	M02172	A

SCALE: NONE SHEET 1 OF 1





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	FRAC DIMENSIONS ±		CHECKED		
	DECIMAL DIMENSIONS				
	.00	±.01	MECH	CONTROL PANEL,	
	.000	±.005	ELEC	VSL OEM LASER	
	ANGLES	± 1/4°		OEM VSL-337i OEM	
UM	64 √ FINISHED SURFACE ROUGHNESS		PROJ APPD	SIZE D	DRAWING NO. 01856 REV. C
	REMOVE BURRS AND BREAK ALL SHARP EDGES		DIMENSIONS APPLY AFTER PROCESSING ☑ YES ☐ NO	SCALE 1/1	SHEET 1 OF 1
4	3	2		1	

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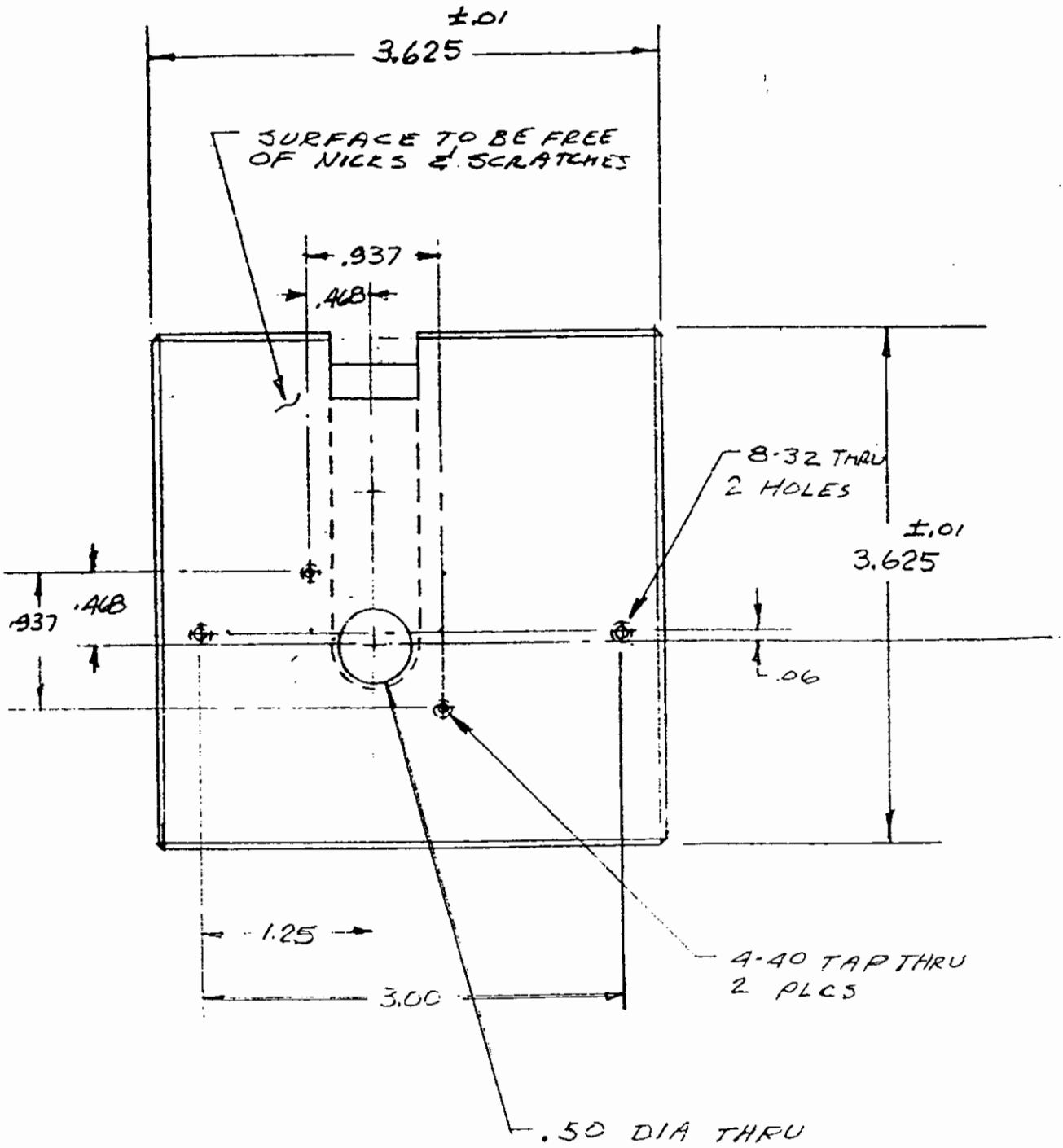


UNLESS NOTED	
FRAC DIMENSIONS ±	
DECIMAL DIMENSIONS	
.00	± .01
.000	± .005
ANGLES	± 1/4°

64 √ FINISHED SURFACE ROUGHNESS

REMOVE BURRS AND BREAK ALL SHARP EDGES

DRAWN Jimmy DATE 31 Aug 89
CHECKED
MECH
ELEC
PROJ APPD

DIMENSIONS APPLY AFTER PROCESSING ☑ YES ☐ NO

laser science inc

OUTPUT PLATE-
VSL OEM LASER

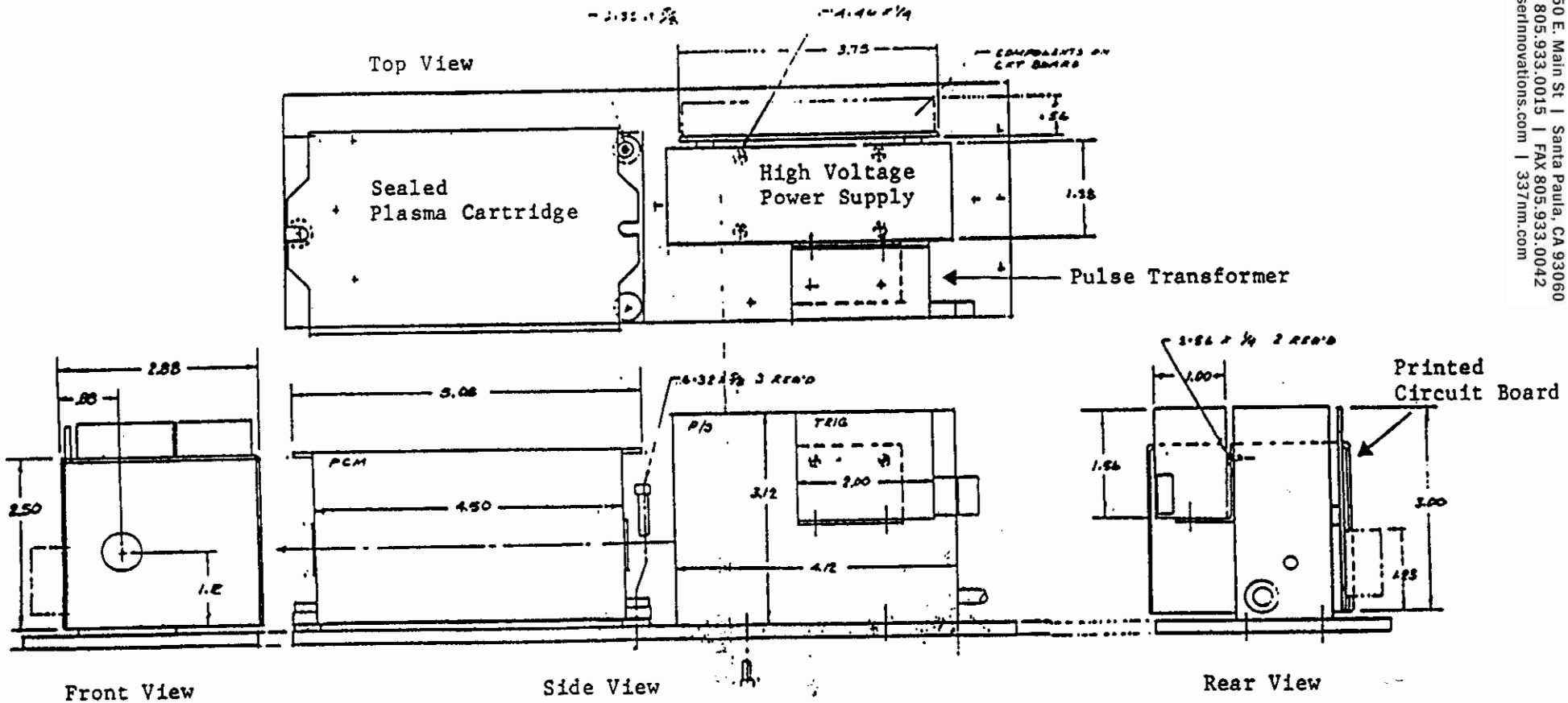
SIZE C | DRAWING NO. 01854 | REV. A

SCALE FULL | SHEET 1 OF

4 3 2 1

LASER SCIENCE, INC. VSL-337 OEM NITROGEN LASER

Internal View



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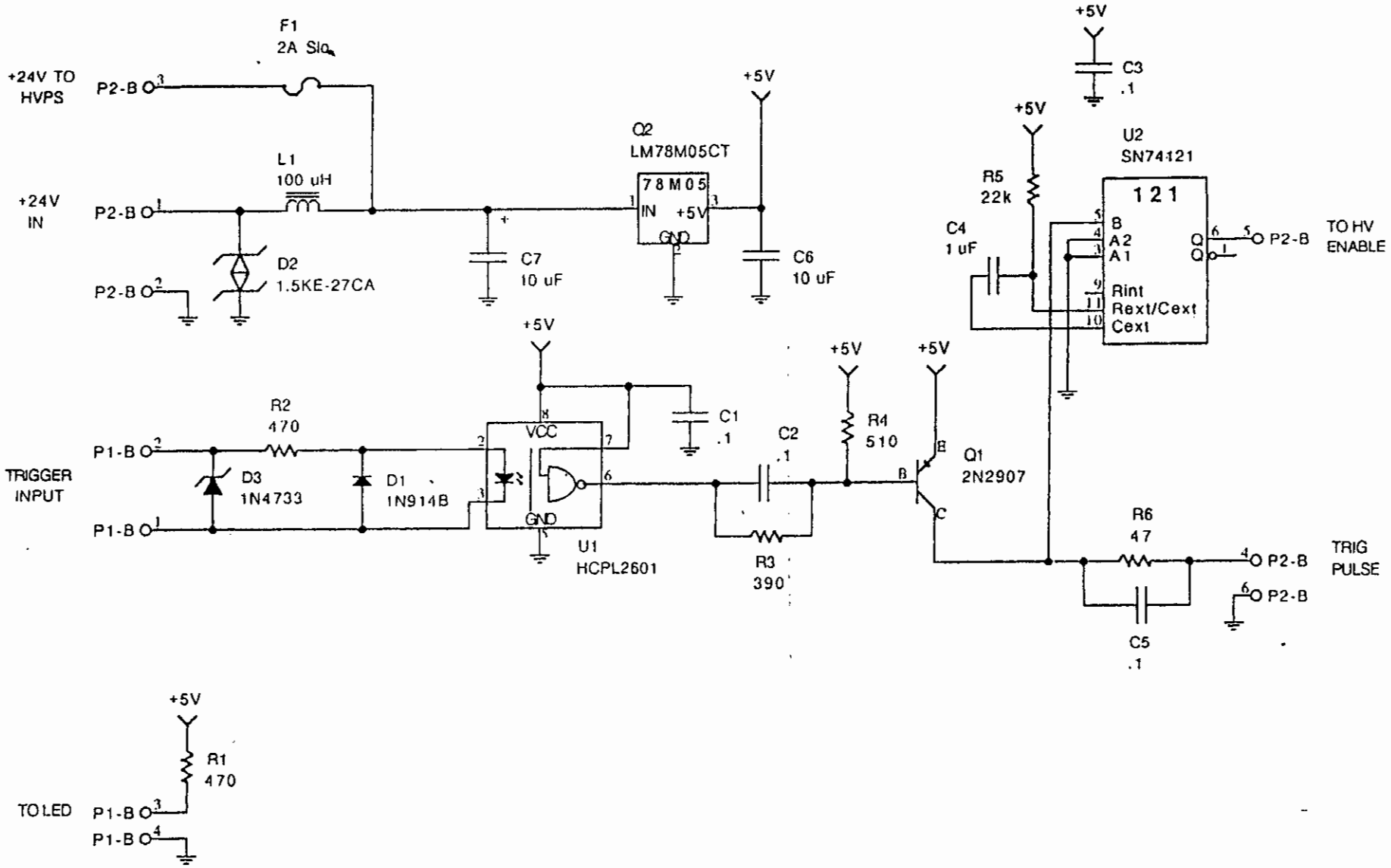

NOTE: R7 NOT USED

File: OEM Trigger Board
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Revision:A
Last Mod: 12/7/95
Page: 1 of 1
Drawn by: L. J. Berg

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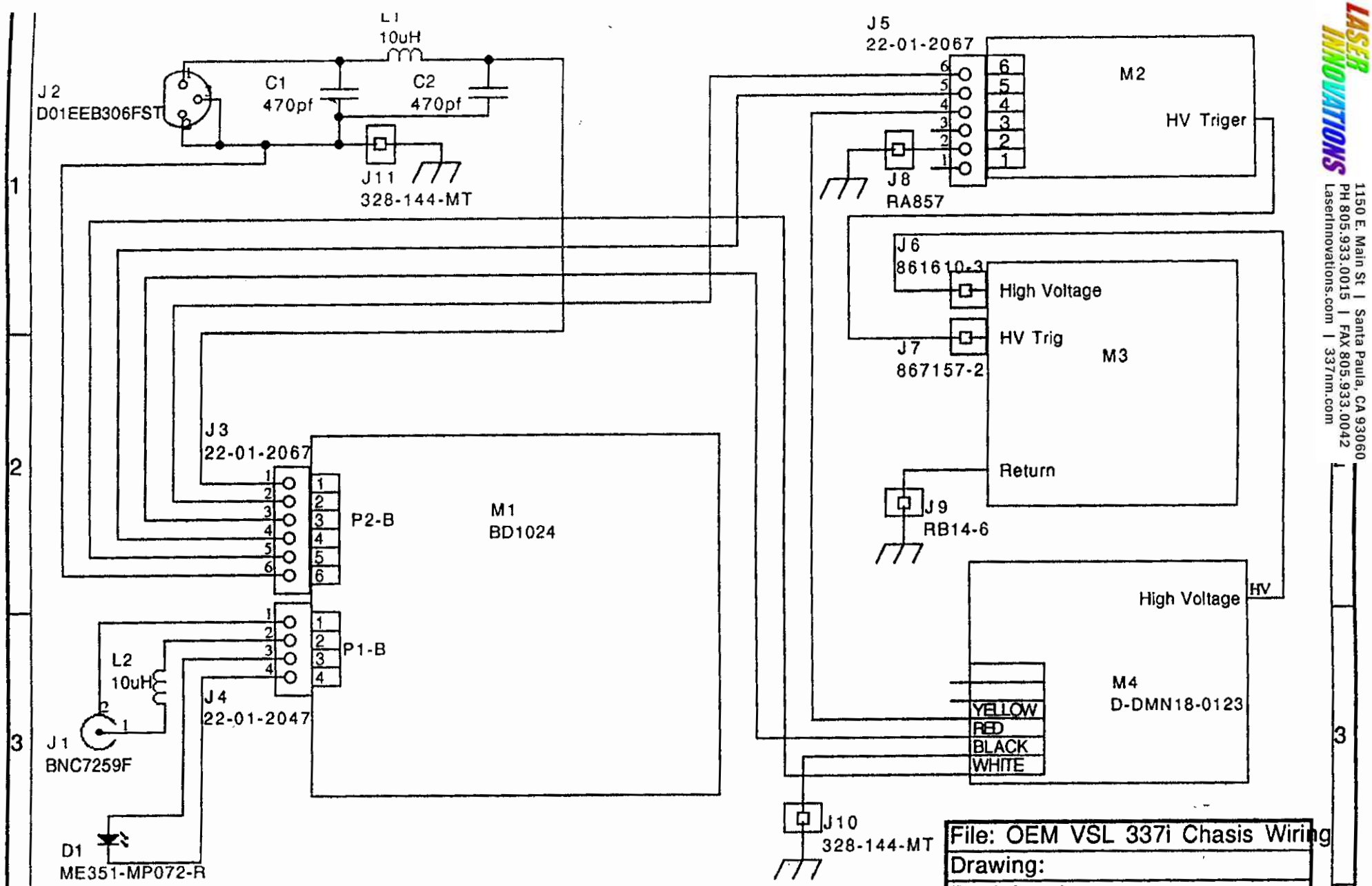

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Revision:A
Last Mod: 12/13/95
Page: 1 of 1
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