**Bertha Shot Sheet**

**110223s2**

Charge Voltage: 50 kV

Vacuum: <3e-5 torr

**NOTES**: New SLR trigger box now in use.

Standard height setup (20mm).

Polarizers set to same angle, need to change one

**POST-SHOT NOTES:**

**LOAD: Short Circuit**

**Glass mounted under return electrode**

**Faraday and BK7 glass**

**Targets**: **none**

**Machine Diagnostics:**

MR1 on post near port 3, MR2 on post near port 7

**DIAGNOSTICS**

PORT 1: 4.5” window

Laser input window with Faraday/shadowgraphy/interferometry

**Faraday Rotation Imaging**: 2 x SLRs (14 bit)

Analyzers set to +/-45 degrees

**~~NO MCP~~**~~: Pinholes: 4 x 100um~~

~~Voltage: 6.00kV~~

~~Pinch to pinholes: 43cm~~

~~Pinholes to detector: 22cm~~

~~Magnification: 0.51~~

~~Timings: Frames cable delayed (only 2-4 working), relative to timing signal~~

~~Frame 1: 20ns~~

~~Frame 2: 20ns~~

~~Frame 3: 40ns~~

~~Frame 4: 60ns~~

PORT 2: NONE

PORT 3: 3 x SMA feed through A =

B = MR2 (return near port 3)

C = MR1 (return near port 7)

2 x SMA feed through D =

E =

PORT 4: Vacuum system & gauge

Brewster window output for Thompson Scattering laser

PORT 5: 6” window

**Laser output** (532nm) Quanta Ray

Laser energy: Osc =10, Amp = 10

C1: Interferometry (Canon SLR)

C2: Faraday 1 (Canon SLR)

C3: Faraday 3 (Canon SLR)

C4: NO Shadow (Canon SLR)

PORT 6: Optical Emission Spectroscopy

300 l/mm grating, centered at 550nm

Fiber collection volumes rotated to axially along short circuit

Top fiber on chamber is top in image on CCD

**NOTE**:

Pre-amp gain: 4x

Gated width = 100ns

Gate delay = 0 ns

DDG gain = 4000

Slit width : set by fiber width

Temp = -20 C

Faraday cage around laptop and CCD

~~Thomson scattering collection~~

**~~Laser Operation Notes:~~**

~~2400 l/mm grating, centered at 530nm~~

~~Free space- top of screen radially inward, pin is about target location, about 1 mm above target~~

**~~NOTE~~**~~:~~

~~Pre-amp gain: 4x~~

~~Gated width = 60ns~~

~~Gate delay = 105 ns~~

~~DDG gain = 3000~~

~~Slit width : set to 180~~

~~Temp = -20 C~~

~~Faraday cage around laptop and CCD~~

PORT 7: Brewster window input for Thompson Scattering laser

Port 8: 3 x electrical throughput (SMA)

A:

B: Glass Bdot

C: Machine Bdot

**ELECTRICAL & SCOPE SETUP**

**Tektronix TLA7012**

**Values 7/9/20 switched back to these values think calibration was matched right**

MR1 = 8.16e8

MR2 = 1.00e9

MR3 = 8.02e8

Scope Timescale = 1us

Trigger = DSO1, Channel 1, 2.0V, positive slope

All channels 1M-ohm and 50-ohm terminated

In data listing timestamp settings, use system trigger and default resolution

In data export, uncheck unit character and select comma for field delimiter

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CHANNEL** | **Diagnostic** | **Pk-Pk** | **offset** | **ATTN** |
| DSO1, Ch1 | Master TTL to Bland Box | 5V | 2.5V | None |
| DSO1, Ch2 | MR1 | 50V | 0 | 26 dB |
| DSO1, Ch3 | MR2 | 50V | 0 | 26 dB |
| DSO1, CH4 | Laser Monitor Diode | 300mV | 150mV | 26 dB |
| DSO2, Ch1 | Machine bdot (Port 8C) |  |  | None |
| DSO2, Ch2 | Glass bdot (Port 8B) |  |  | None |
| DSO2, Ch3 | OES/TS Camera | 3V | 2.5V | None |
| DSO2, Ch4 |  |  |  | None |
|  |  |  |  |  |
|  |  |  |  |  |