

Laboratory book C112

C112 Crew

June 20, 2016

Contents

June 2016

June 2016

2016-6-15 Axial of line ratio wavelength
2016-6-20 line intensity ratio

June 2016

2016-6-15 Axial of line ratio wavelength

?? ignition of discharge

gas helium nitrogen mixture

flow helium 100 sccm

- nitrogen 0.05 sccm

pressure $p = 1000$ mbar

frequency $f = 5$ kHz

shape square wave

amplitude $\hat{U}_{\text{appl}} = 1200$ V

?? measurement of Stark splitting

lens $h_{\text{lens}} = 7.2 : 0.05 : 5.8$ in

hor. slit $s_{\text{hor}} = 0.2$ mm

filter OG1 filter

MC $s_{\text{MC,in}} = 1$ mm

- $s_{\text{MC,out}} = 1$ mm
- $g_{\text{MC}} = 1800 \text{ mm}^{-1}$ at 500 nm
- $\lambda_{\text{MC}} = [587.65, 667.98, 690.0, 706.66, 728.31] \text{ nm}$

R&S RTO 1024 sample Rate: 500 MSa/s

- resolution: 2 ns
- record length: 2 kSa
- acquisition time: 4 μs
- CH1: applied voltage, 200 V/DIV
- CH2: total charge, 4 V/DIV
- CH3: PMT signal, 40 mV/DIV, -160 mV offset
- CH4: Rogowski coil, 100 mV/DIV
- trigger: CH4 at -150 mV, falling slope
- 15000 averages

PC 5 total wavelength scans at each position

Files 16001:16725

?? measurement of full period

Files 17001

2016-6-20 line intensity ratio

?? ignition of discharge

gas pure helium

flow helium 100 sccm

pressure $p = 1000$ mbar

frequency $f = 5$ kHz

shape sine wave

amplitude $\hat{U}_{\text{appl}} = 1200$ V

?? line intensity ratio

lens $h_{\text{lens}} = 5.8 : 0.05 : 7.2$ in

hor. slit $s_{\text{hor}} = 0.2$ mm

filter OG1 filter

MC $s_{\text{MC,in}} = 1$ mm

- $s_{\text{MC,out}} = 1$ mm
- $g_{\text{MC}} = 1800 \text{ mm}^{-1}$ at 500 nm
- $\lambda_{\text{MC}} = [587.65, 667.98, 690.0, 706.66, 728.31] \text{ nm}$

R&S RTO 1024 sample Rate: 100 MSa/s

- resolution: 10 ns
- record length: 2 kSa
- acquisition time: 20 μs
- temporal window: from $-6 \mu\text{s}$ to 12 μs
- CH1: applied voltage, 200 V/DIV
- CH2: total charge, 2 V/DIV
- CH3: PMT signal, 40 mV/DIV, -160 mV offset
- CH4: Rogowski coil, 40 mV/DIV
- trigger: CH2 at 3.5, V, rising slope
- 28000 averages

PC 10 total wavelength scans at each position

Files 30000:31450