

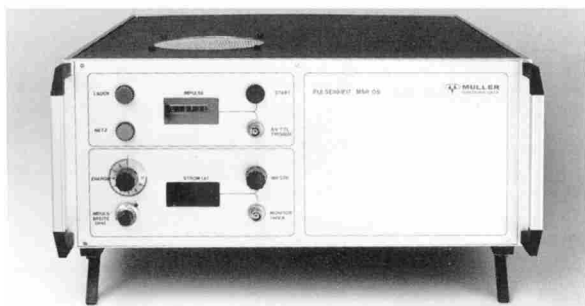
LIGHT PULSES

For some applications, such as photolysis, intensities provided by Xe lamps operated in the continuous mode are not sufficient. It is therefore necessary to operate the lamps in pulsed mode to provide these very high light intensities. In this mode the operating current is, for a short duration, 500 A instead of 20 A. Measurements are made during the flat portion of the pulse curve. With very good rectangular pulse shapes with a steep slope it is also possible to

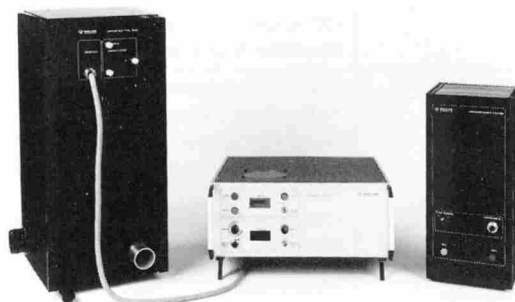
carry out investigations for lifetime studies of high light excitation. The light output in the whole spectral band increases by about exp 1.5. In the UV region even greater increases can be expected. A 450W Xenon lamp pulsed at 500 A increases its light output by about 125 times. Since the pulse duration is very short (10 ms max.) the overall performance of the lamp is only little affected. The increase in intensity in the IR is correspondingly small.

PULSE UNIT MSP 05

This instrument is connected between the power supply and the lamp housing. It allows the user to superimpose the normal operating current of the Xenon lamp with a rectangular pulse current. The pulse unit can stay connected to the Xenon lamp during ignition. (This is not the case with some other similar units).



MSP 05 Pulse Unit

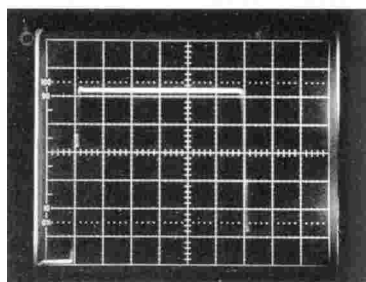


SVX 1000 Power Supply
ELL 1000 H Lamp house with elliptical reflector
MSP 05 Pulse Unit

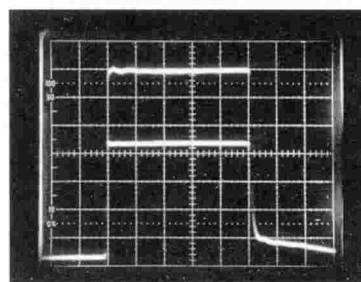
Specification

Supply: 220 V ~ 10%, 50 Hz, 1 kW max
Pulse current: 50-500 A, calibrated, preselectable through 10-turn potentiometer
Digital readout: 15 digit, current
Pulse duration: 0.2-10 ms calibrated, preselectable through 10-turn potentiometer
Max. Output load: 3 As
Repetition rate: 1 pulse per second
Current pulse ripple: (0.2% across 5 ms at 500 A (after transient time of 0.2 ms))

Light pulse ripple: <0.2% across 3 ms in lamphouse ELL 1000 H (after transient time of 1.5 ms)
Trigger: - electrically: + 5 V triggers in positive transition driveable from TTL output (min 4 V, 1 ps)
- manually: by switch
Internal delay: 0.2 ms
Pulse counter: 6 digit counter, resetable



Pulse current: 325 A/6 ms
Vertical: 50A/div.
Horizontal: 1 ms/div. (pulse width)
Rise time: 1 00 μ s
Fall time: 80 μ s



Upper curve: Light pulse measured at 400 A/5 ms with Siemens BPX79 (Photodiode)
Vertical: 5 mV/div/AC/at 35 mV DC
Horizontal: 1 ms/div (pulse width)
Lower curve: Current 400 A/5 ms
Vertical: 20 A/div.
Horizontal: 1 ms/div. (pulse width)