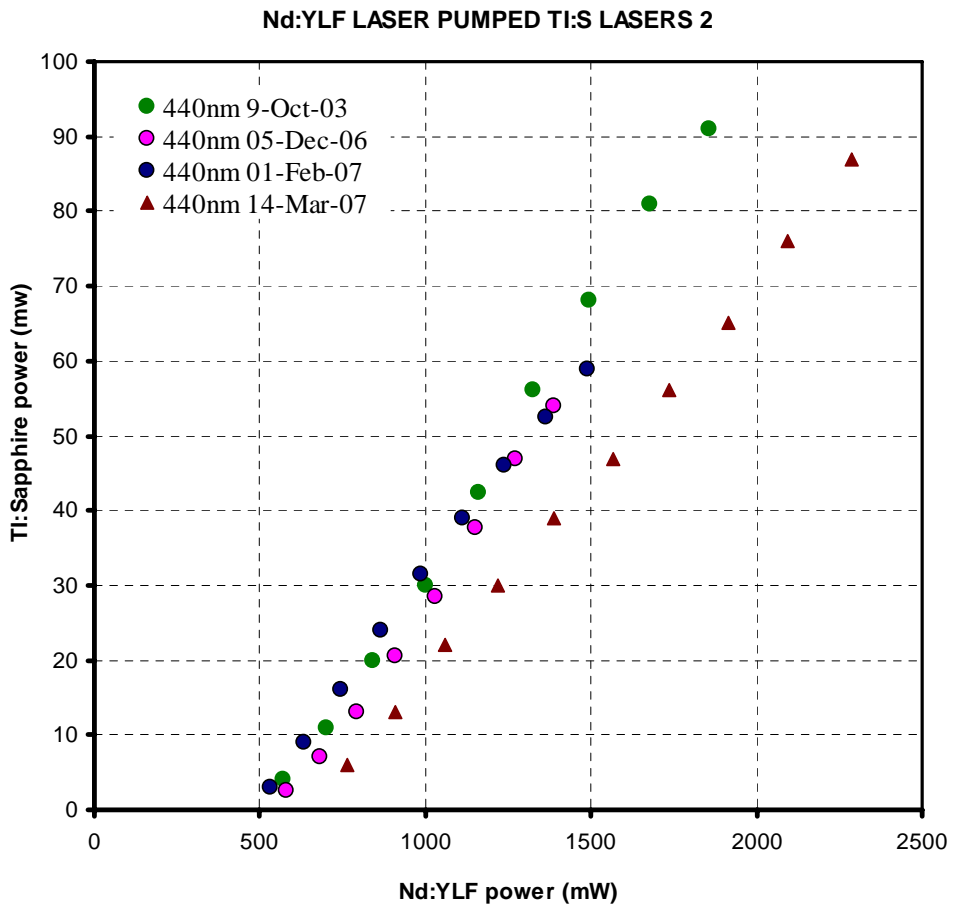
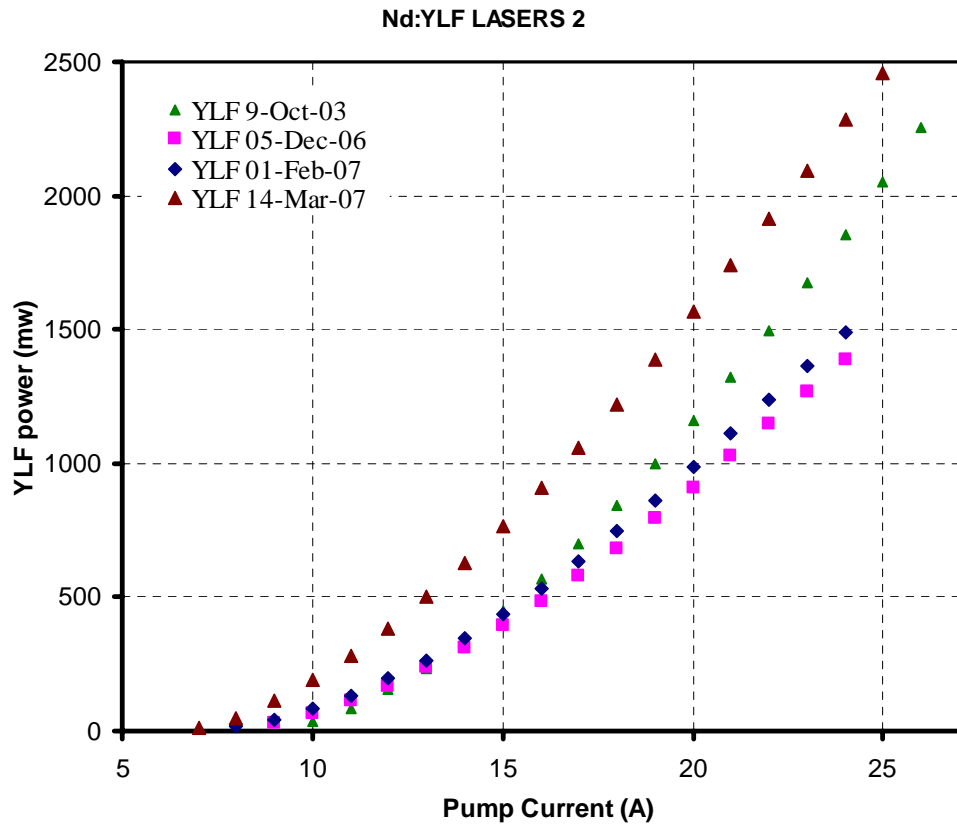


# Laser2 installation at USC55

New crystal, YLF chamber, flow tube, lamp.



## TiS delay: $B = A + 2.9\text{ns}$

### YLF2 tuning

Data of new crystal from Quantronix :

current	power (W)	FWHM(ns)	
14	5.5	440	CW power 57W@25A, 1KHz
15	7	365	
16	8.7	320	only crystal and 2 coupling mirrors
17	10.5	290	
18	12.5	278	
19	14.5	250	
20	16.3	230	
21	18	212	
22	19	205	
22.5	20	196	

#### 1) He-Ne alignment, Basic cavity: HR+chamber+OC, CW

	power (W)
T=8.7	
10	1.25
15	11
20	25.8
25	43

#### Re-align cavity:

	power (W)
T=7.3	
10	3.3
15	17
20	35
25	54

#### 2) Polarizer

rotate crystal at 20-25A to maximize power:  
Else power can decrease from low current (10A)

	power (W)
T=8	
10	2
15	16
20	33
25	51.9

#### 3) Cylindrical lens + Q-switch

install at the same time for tube protection installation.

	power (W)
T=8	
10	0
15	14.9
20	31.3
25	49.6

**Check the Qmode, RF ON (but no trigger PRF)**

15	7.1	
20	14.4	
22.5	18.5	FWHM 250ns (Quantronix value give at 22.5A)
25	22.3	

should be no lasing up to 25A (middle position)

**4) HT/HR mirror, CW**

power (W)

T=8

10	1.75	fixed the HR mirror (before ylf chamber). Do not tune anymore
15	14.4	
20	30.6	
25	48.5	

**5) LBO, with He/Ne**

power (W)

10	1.19	1KHz as Quantronix
15	13.2	
20	28.2	
25	44.9	

**6) Last HR/HT mirror**

Qmode 1KHz , green OK. Optimize phase LBO

Back to 100 Hz

calibration results

Current A	YLF 14-Mar-07	440nm 14-Mar-07
7	10	
8	50	
9	111	
10	189	
11	281	
12	385	
13	500	
14	627	T
15	763	6
16	910	13
17	1057	22
18	1220	30
19	1390	39
20	1568	47
21	1738	56
22	<b>1915</b>	<b>65</b>
23	2095	76
24	2287	87
25	2457	98