

Padova, 20.6.2017

# AXIOMA - Pisa

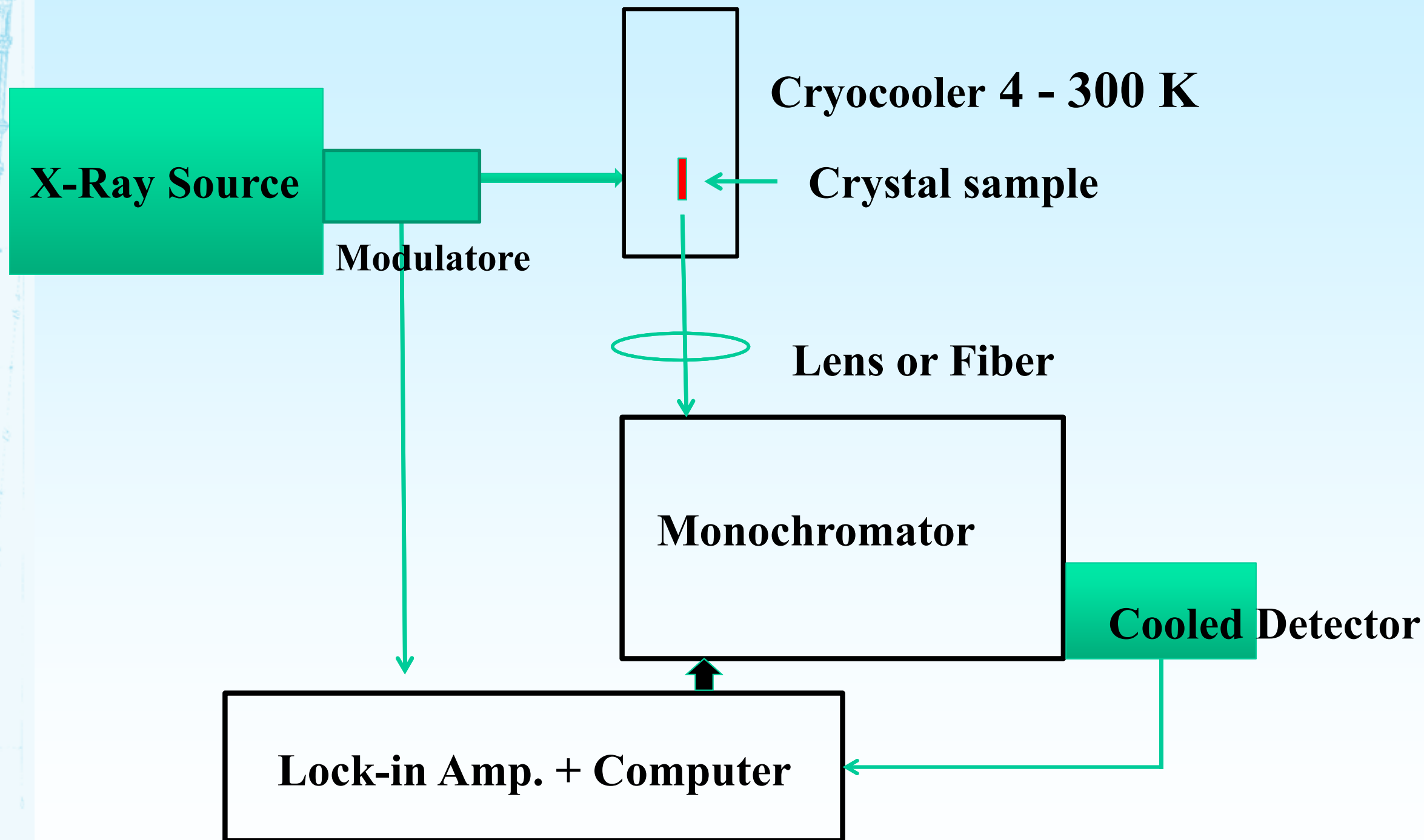
**Alberto Di Lieto, Mauro Tonelli, Domenico Manicone,  
Donato Niccolo'**

**Dipartimento di Fisica dell'Università di Pisa  
INFN – Sezione di Pisa**



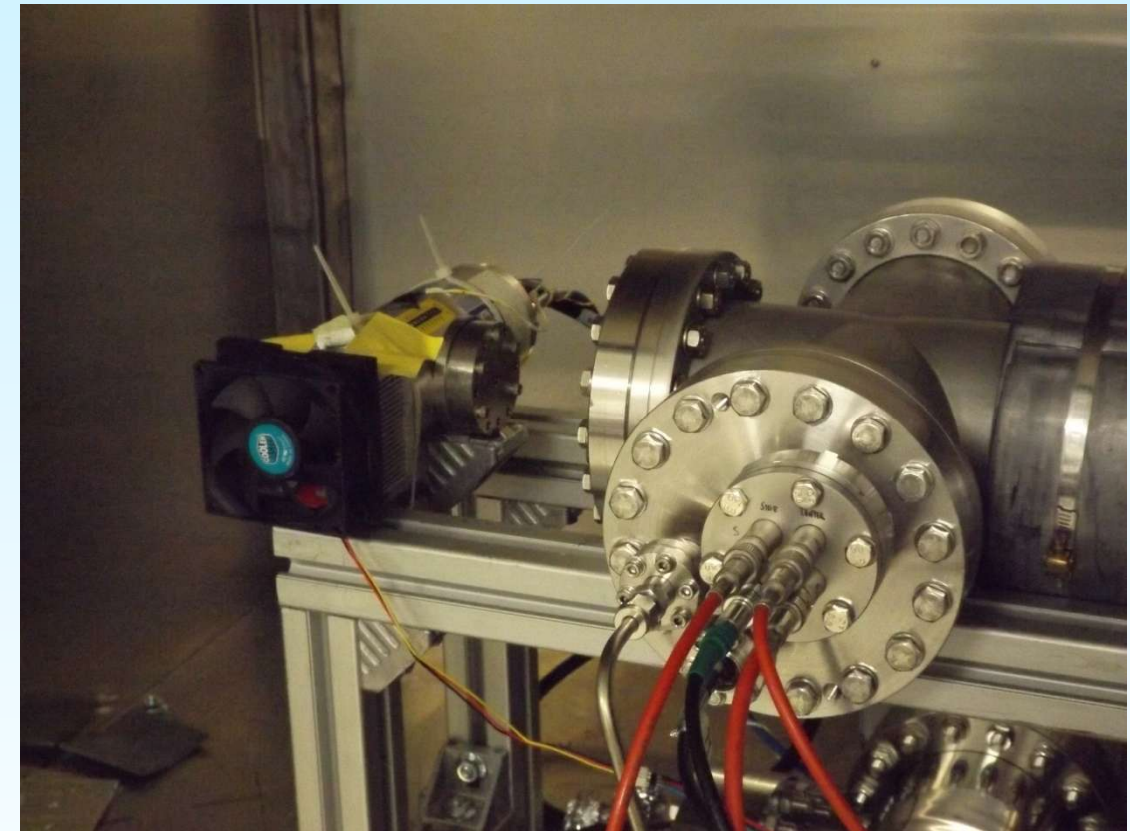
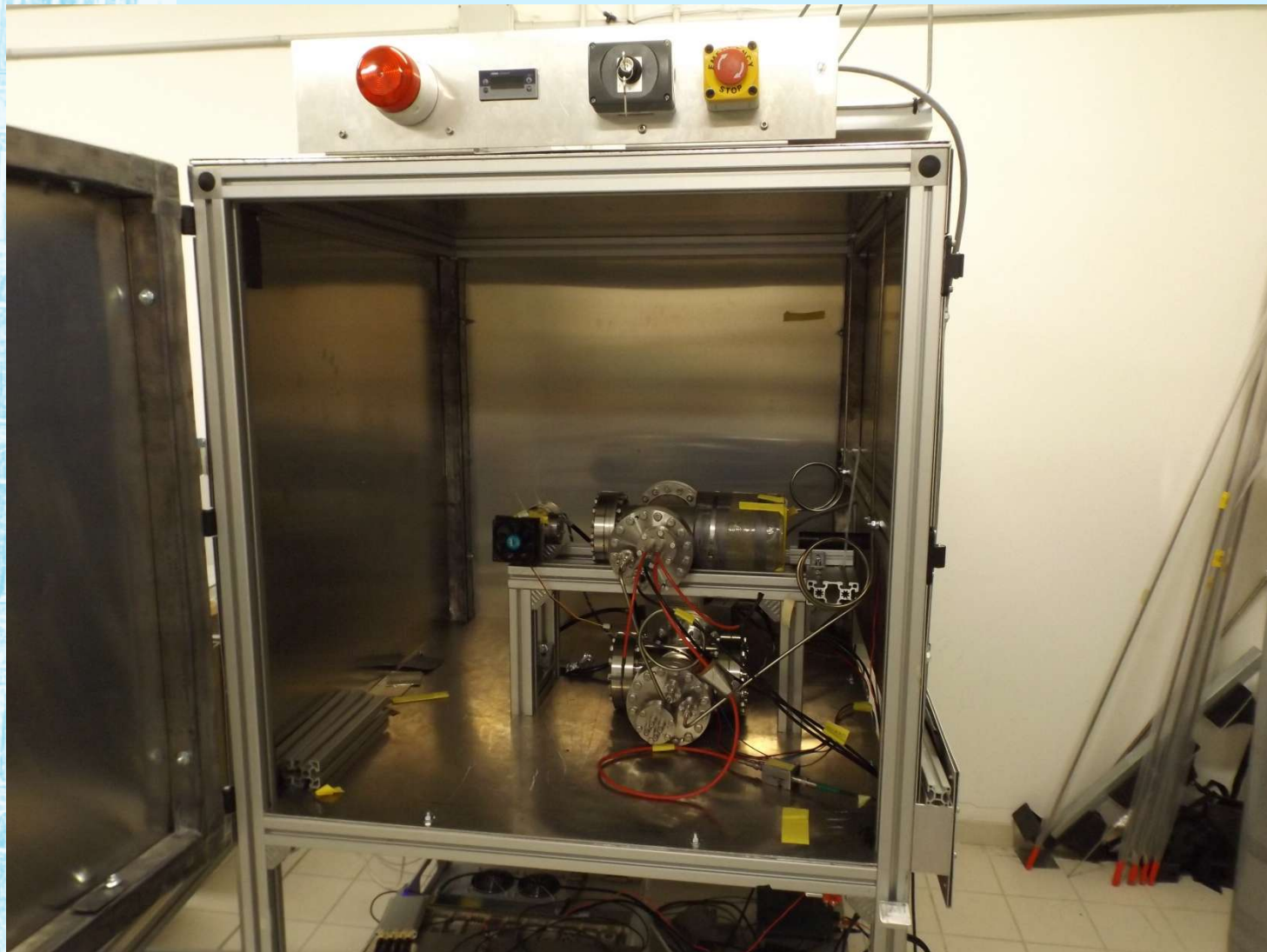


# Setup catodoluminescenza

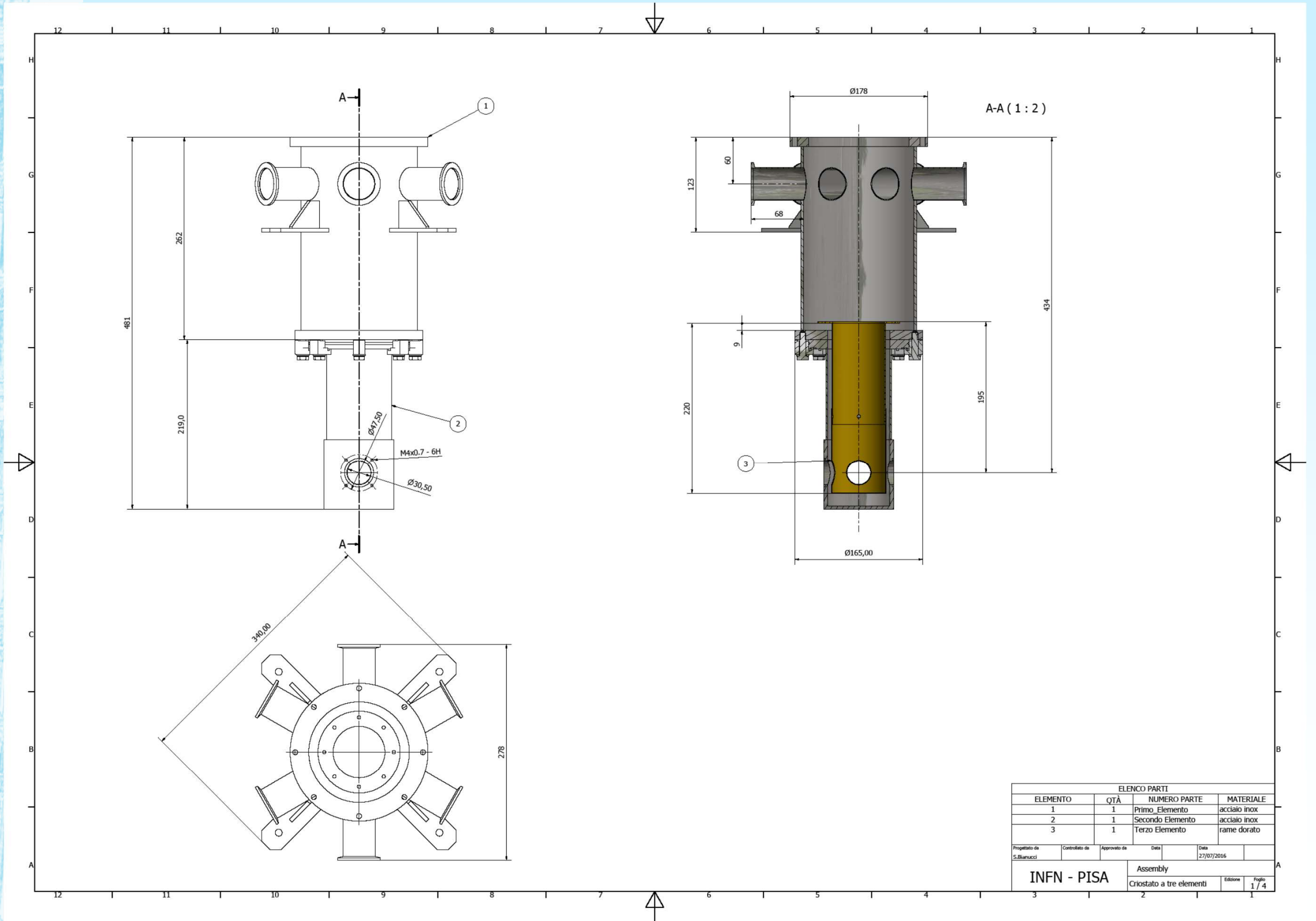


**Detection Range : 80 - 600 meV**

# X-Ray Tube with Pb-shielded cabinet

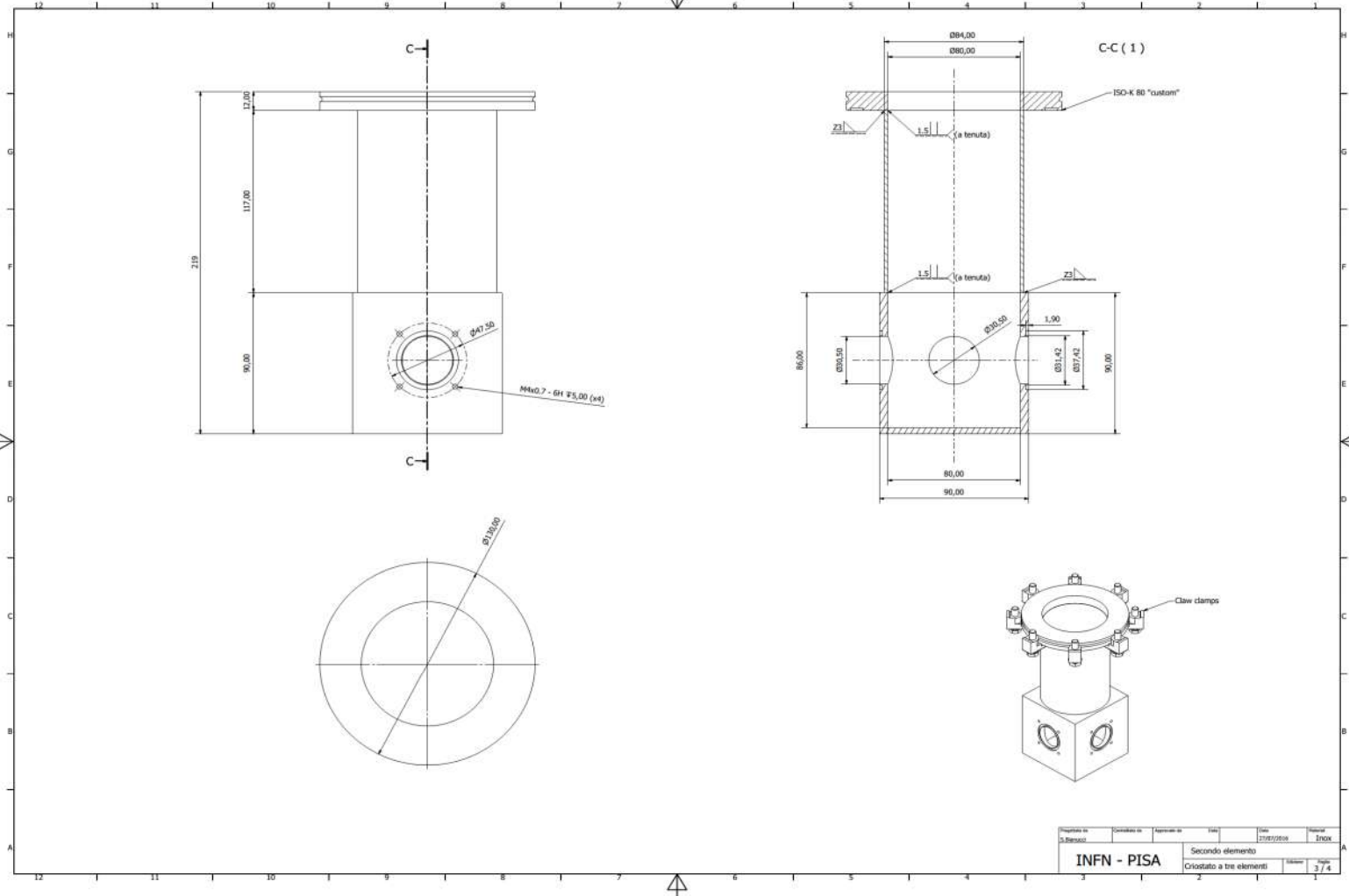
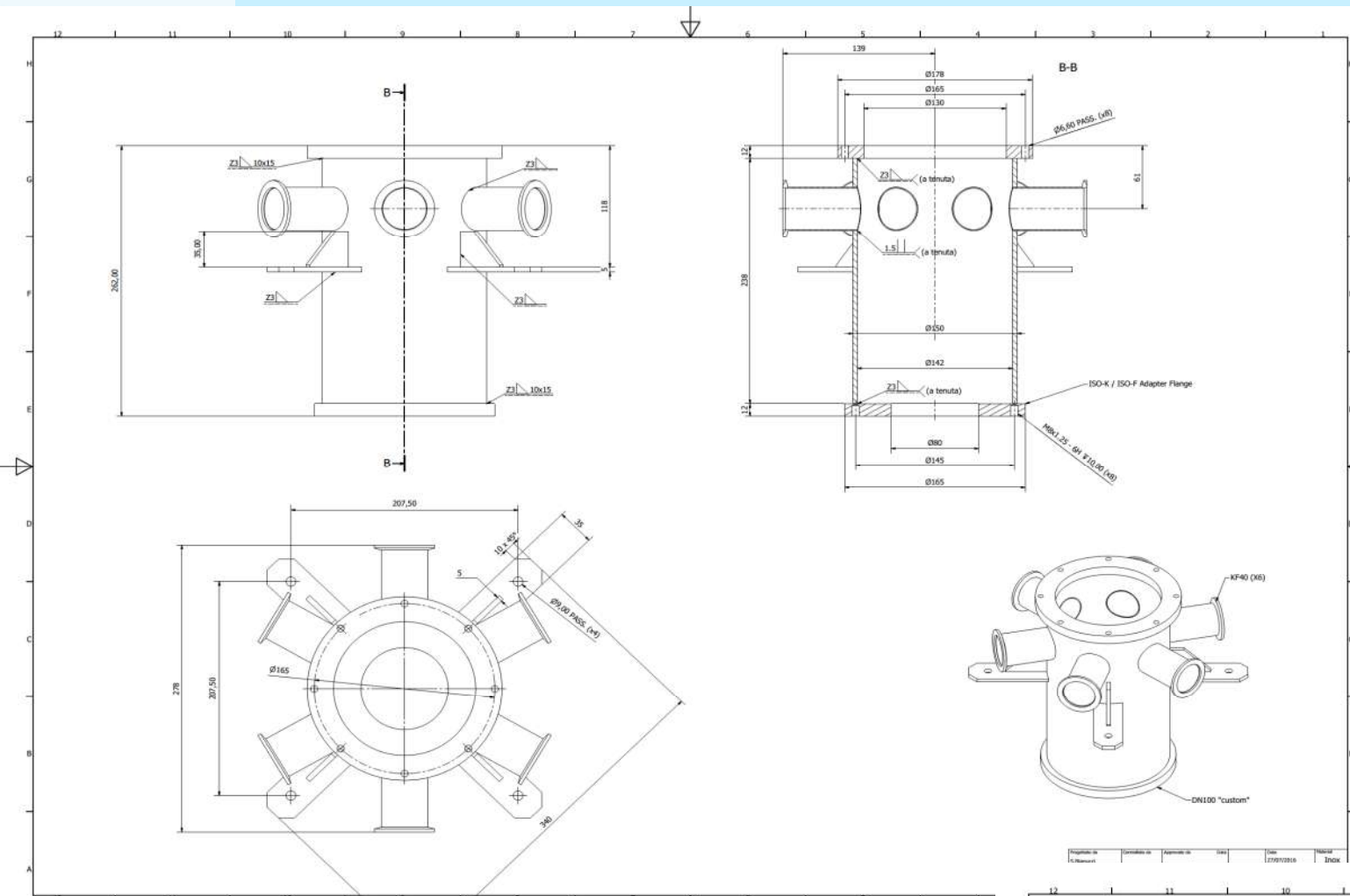


# Progetto



ELENCO PARTI			
ELEMENTO	QTÀ	NUMERO PARTE	MATERIALE
1	1	Primo Elemento	acciaio inox
2	1	Secondo Elemento	acciaio inox
3	1	Terzo Elemento	rame dorato

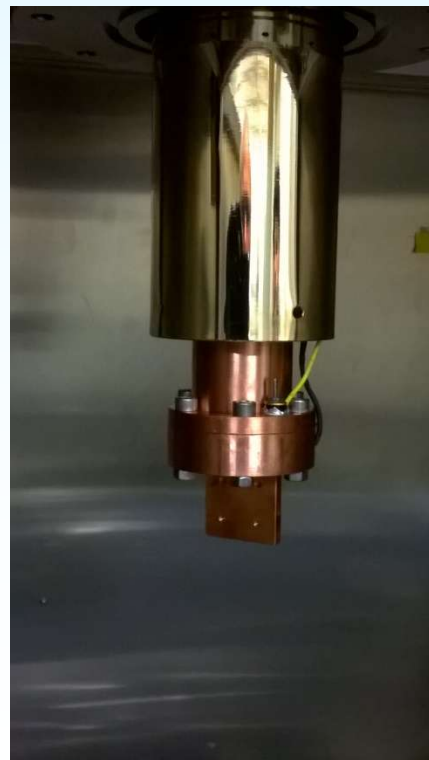
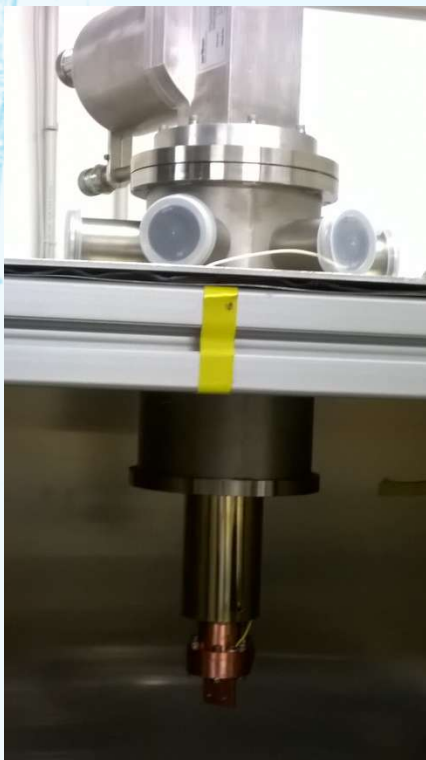
Progettato da S. Bianucci	Controllato da	Approvato da	Data 27/07/2016
INFN - PISA			Edizione 1/4



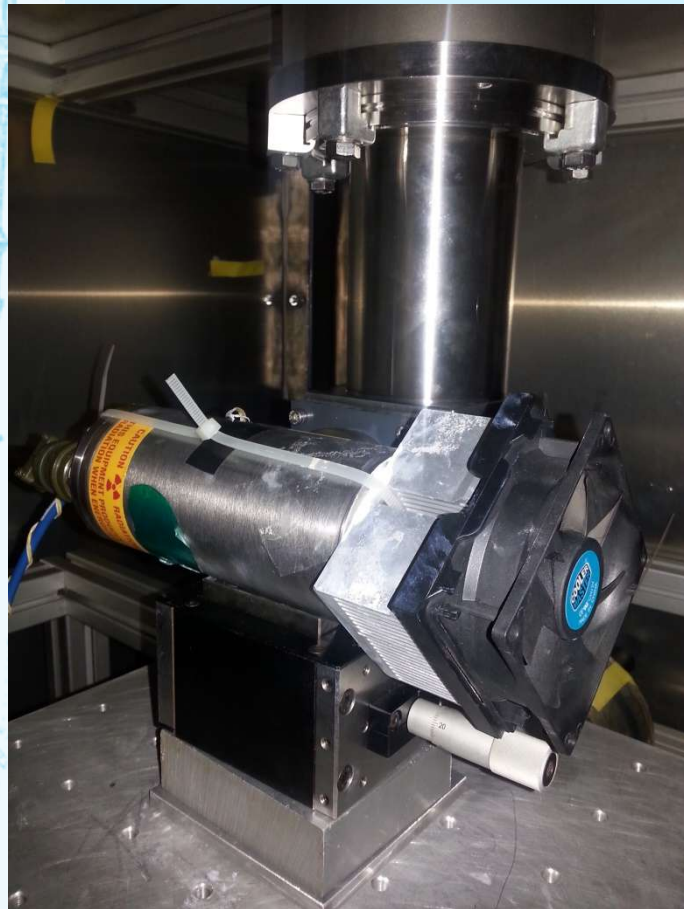
# Cryo-cooler



# Realizzazione attuale



# Setup







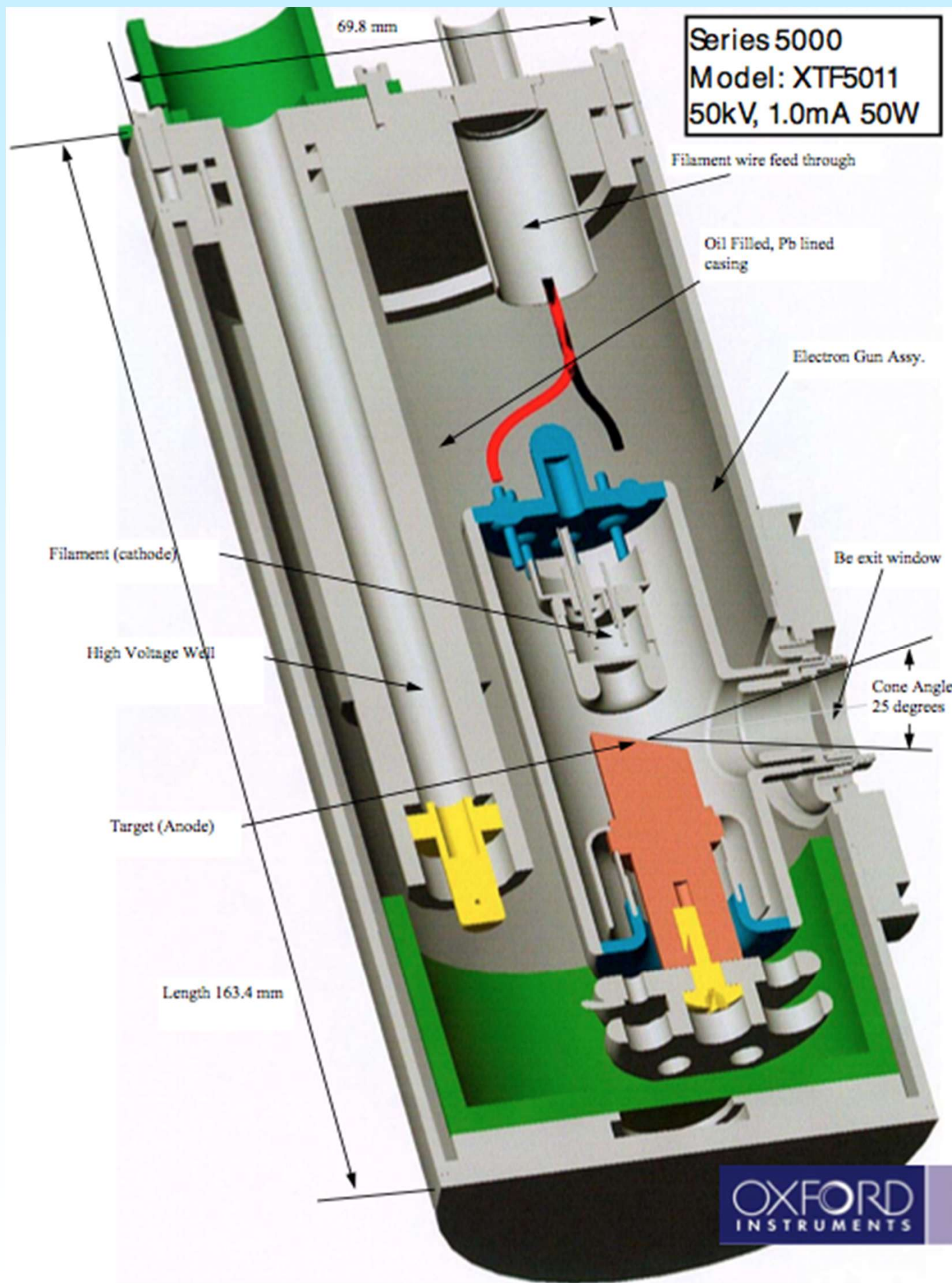
# Sorgente raggi X

- Oxford Apogee XTF5011
- Specifiche



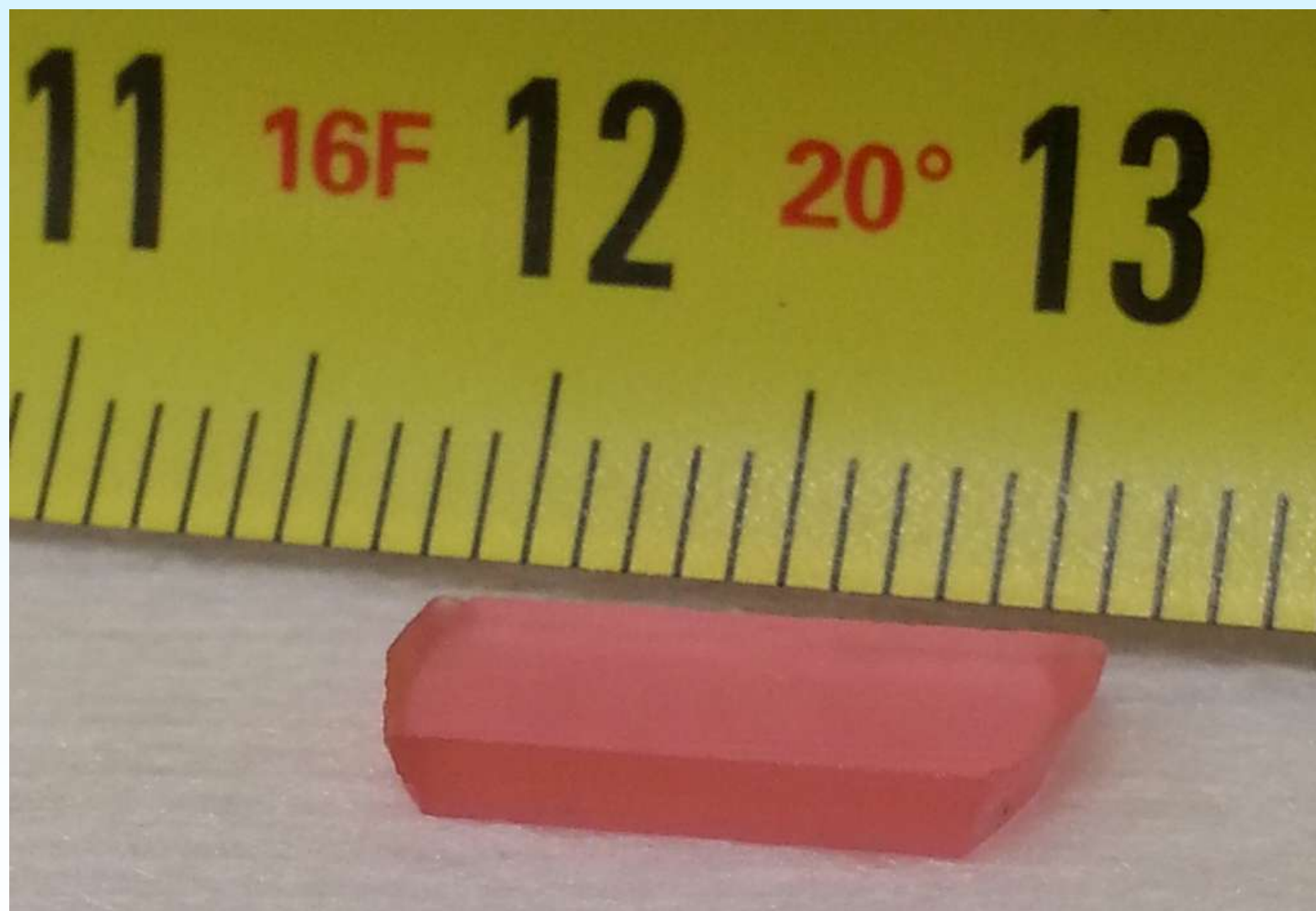
Feature	Series 5000
Max Anode Current	1.0 mA
Max Anode Voltage	50 kV
Maximum Power	50 W continuous
Nominal Filament Voltage	2.0 V @50 kV, 1 mA
Max Filament Current	1.7 A
Stability	0.2% over 4 hours
Focal Spot Size (Nominal*)	110 $\mu\text{m}$
Anode Material	W, Mo, Rh (other materials available)
Be Window Thickness	125 $\mu\text{m}$ (75 $\mu\text{m}$ , 250 $\mu\text{m}$ options available)
Approximate Weight	4 lbs (1816 g)
Cooling Method	Forced air @150 CFM
Cone Angle	25°

distribuzione angolare isotropa →

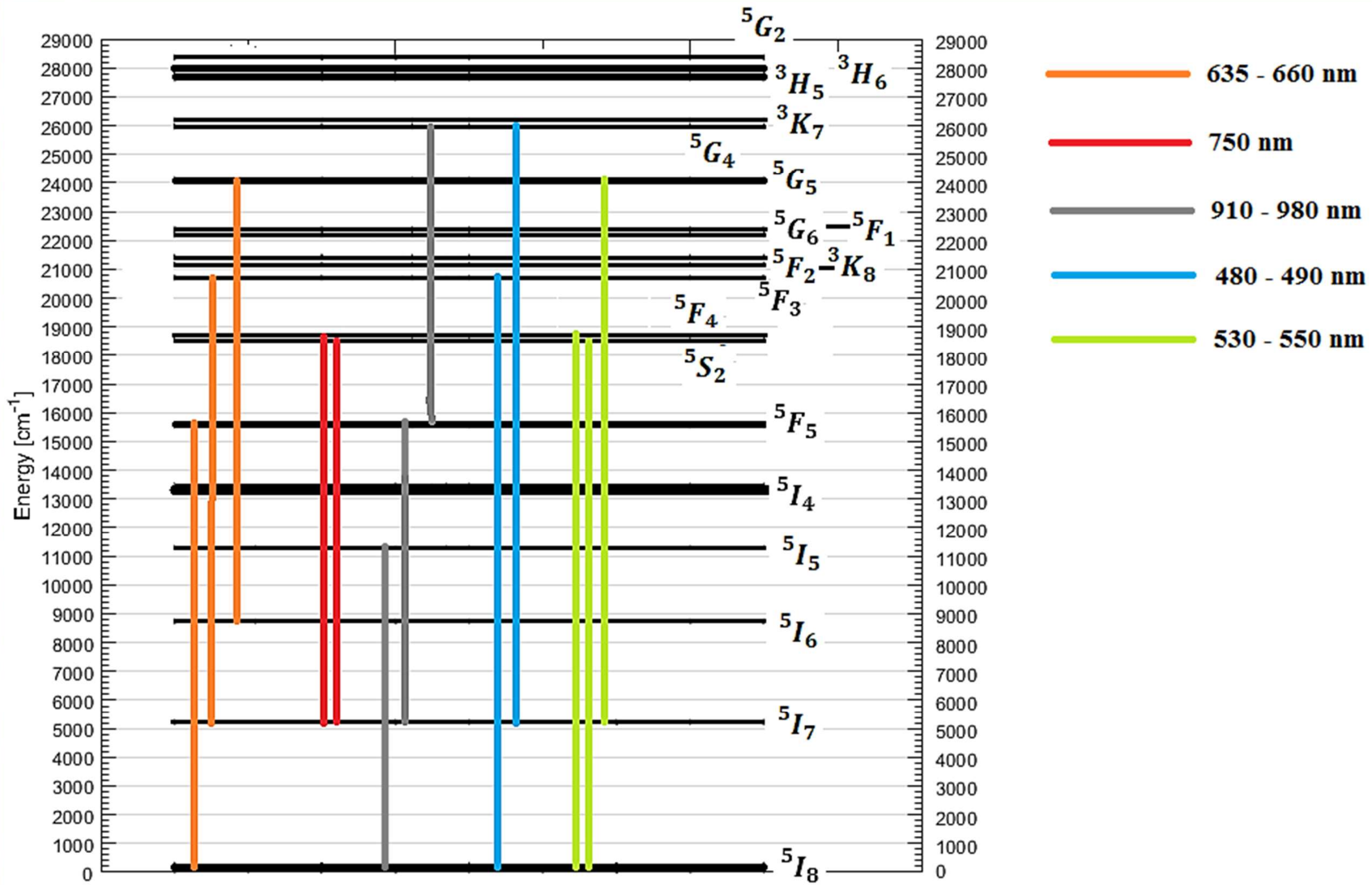




**LiYF<sub>3</sub>: 30% Ho<sup>3+</sup>,**  
**Ho density: ~10<sup>23</sup> ions/cm<sup>3</sup>**



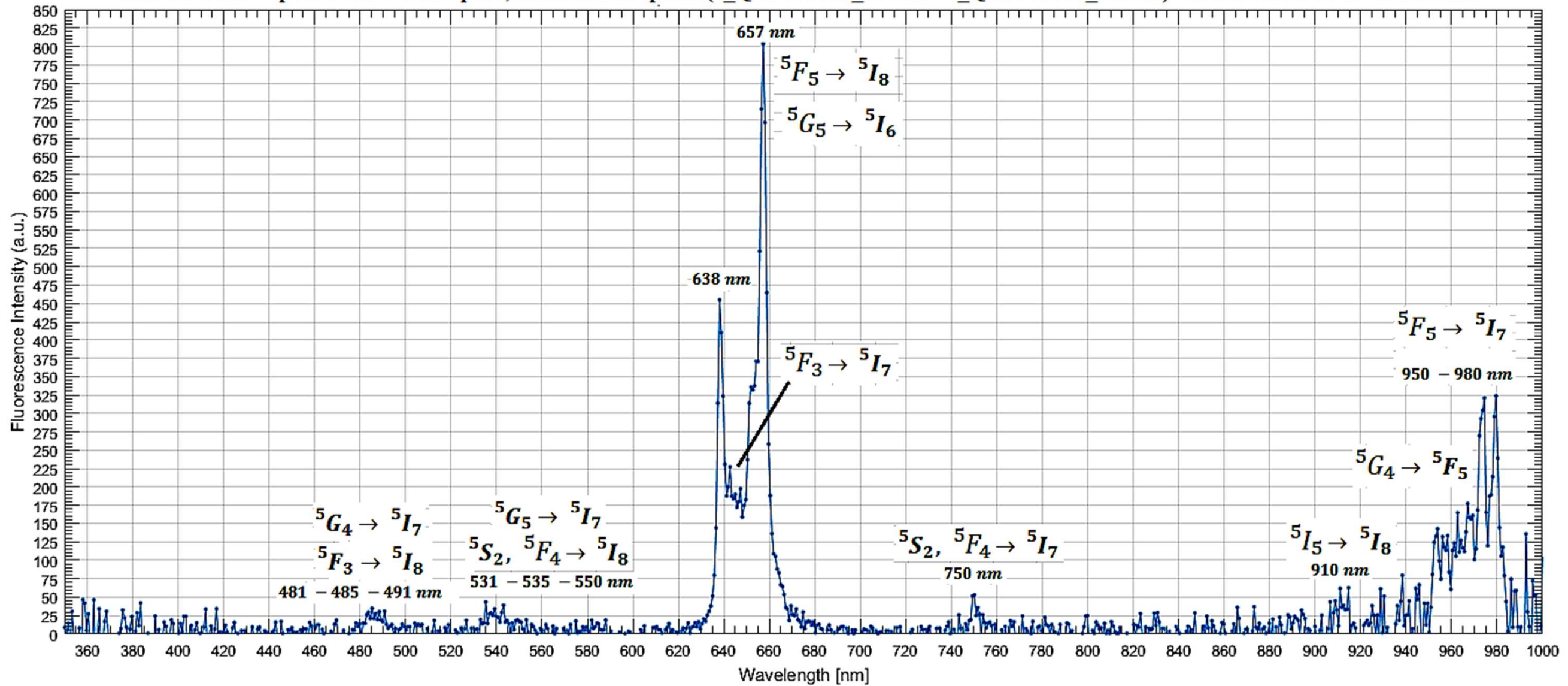
# YLF: Ho 30%



# YLF: Ho 30%



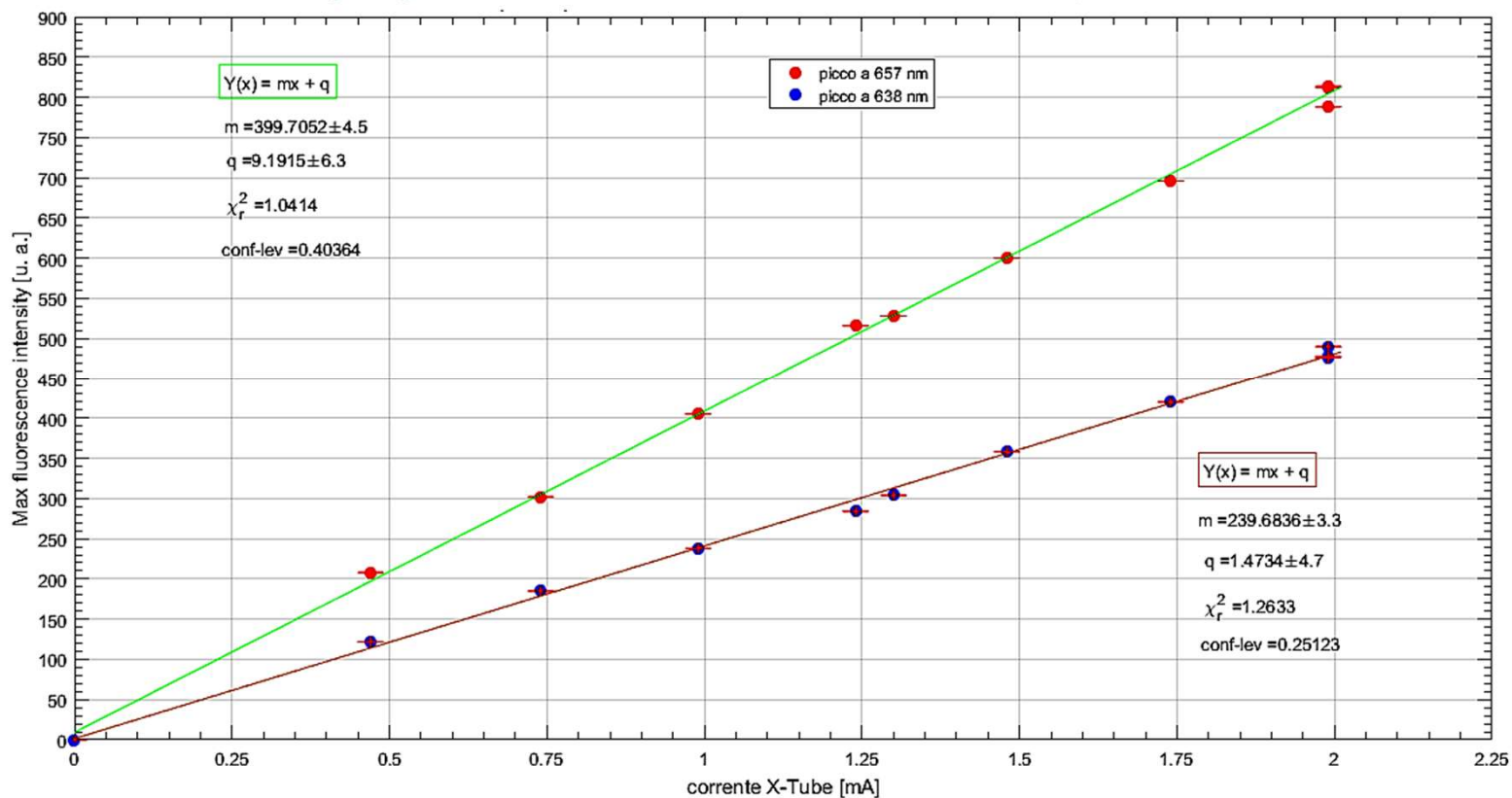
YLF:30% Ho - Spettro con OceanOptics, differenza di spettri (c\_QEP003641\_004.txt - c\_QEP003641\_003.txt) - con X-tube a 50 kV e 1.99 mA



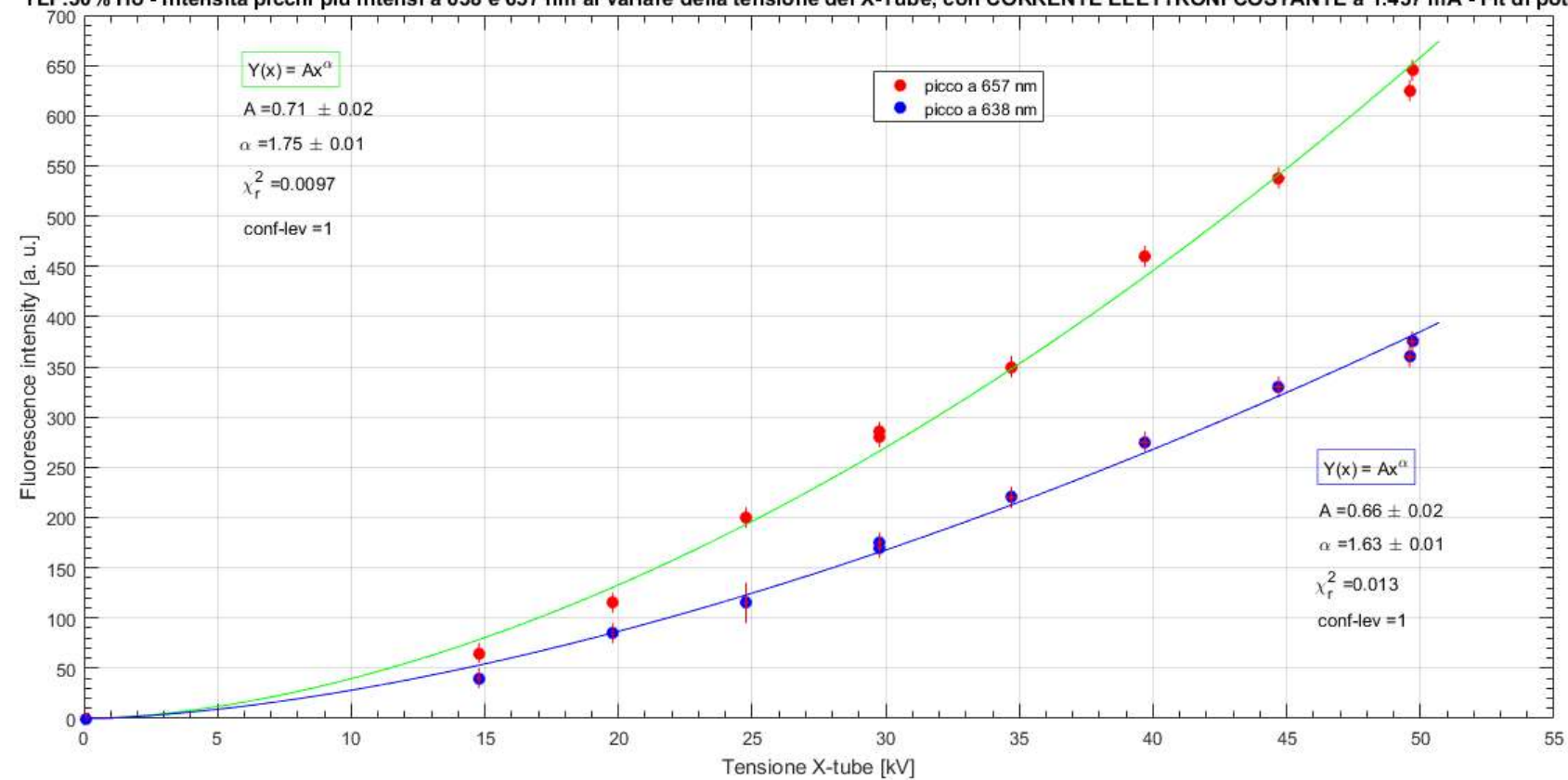


# YLF: Ho 30%

YLF:30% Ho - Intensità dei picchi più intensi a 638 e 657 nm al variare della corrente del X-tube, con tensione fissa a 49.7 kV - Fit lineare



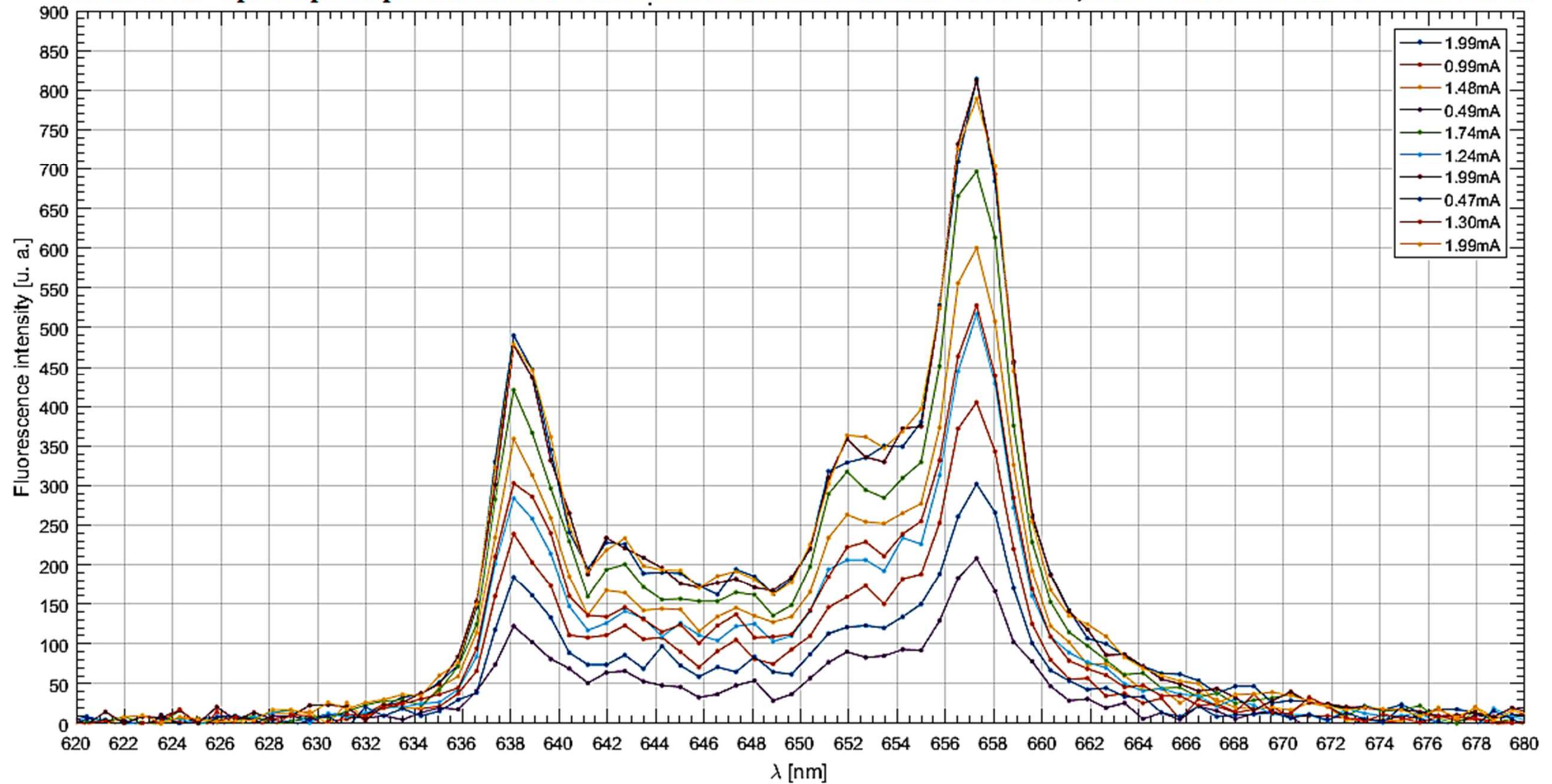
YLF:30% Ho - Intensità picchi più intensi a 638 e 657 nm al variare della tensione del X-Tube, con CORRENTE ELETTRONICA COSTANTE a 1.457 mA - Fit di potenza



# YLF: Ho 30%



YLF:30% Ho - Spettro picchi più intensi a 638 e 657 nm al variare della corrente del X-Tube, con TENSIONE COSTANTE a 49.7 kV



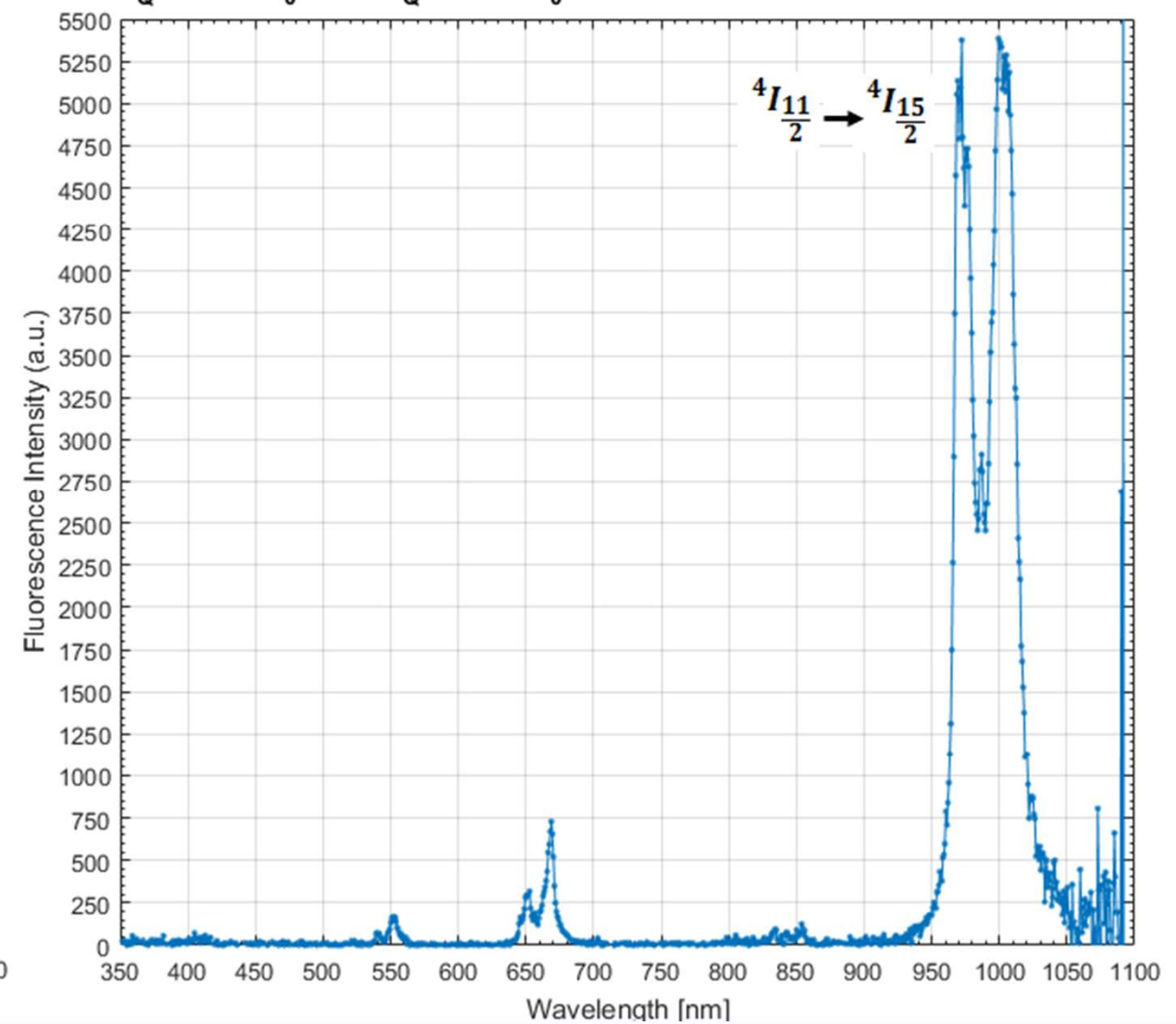
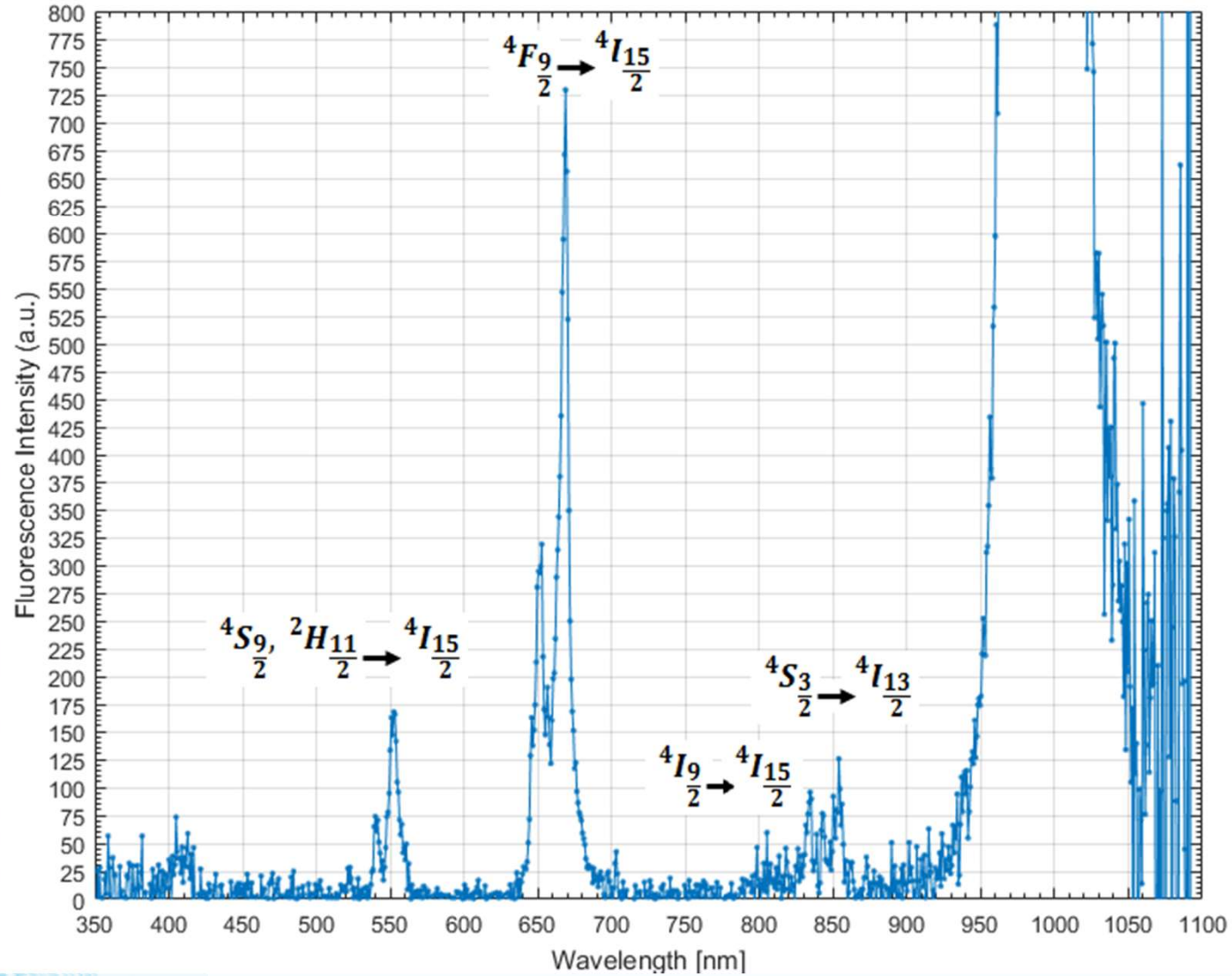




# BYF: Er 30%

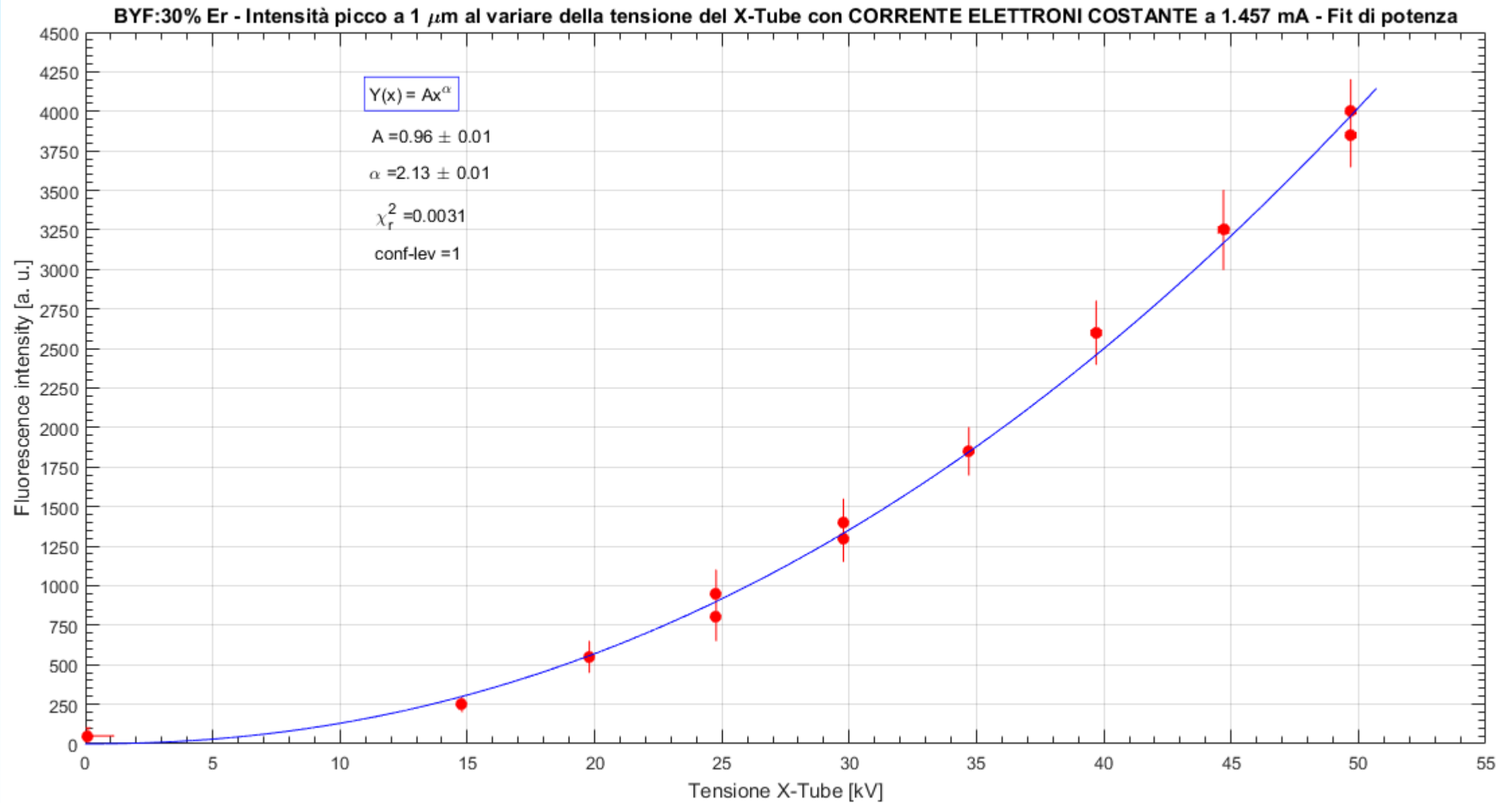


Misure con OceanOptics con lente BYF:30%Er<sup>3+</sup> - integration time 10 s - spettro differenza(f<sub>Q</sub>EP003641<sub>0</sub>20.txt - f<sub>Q</sub>EP003641<sub>0</sub>19.txt) X-Tube a 50 kV e 1.99 mA

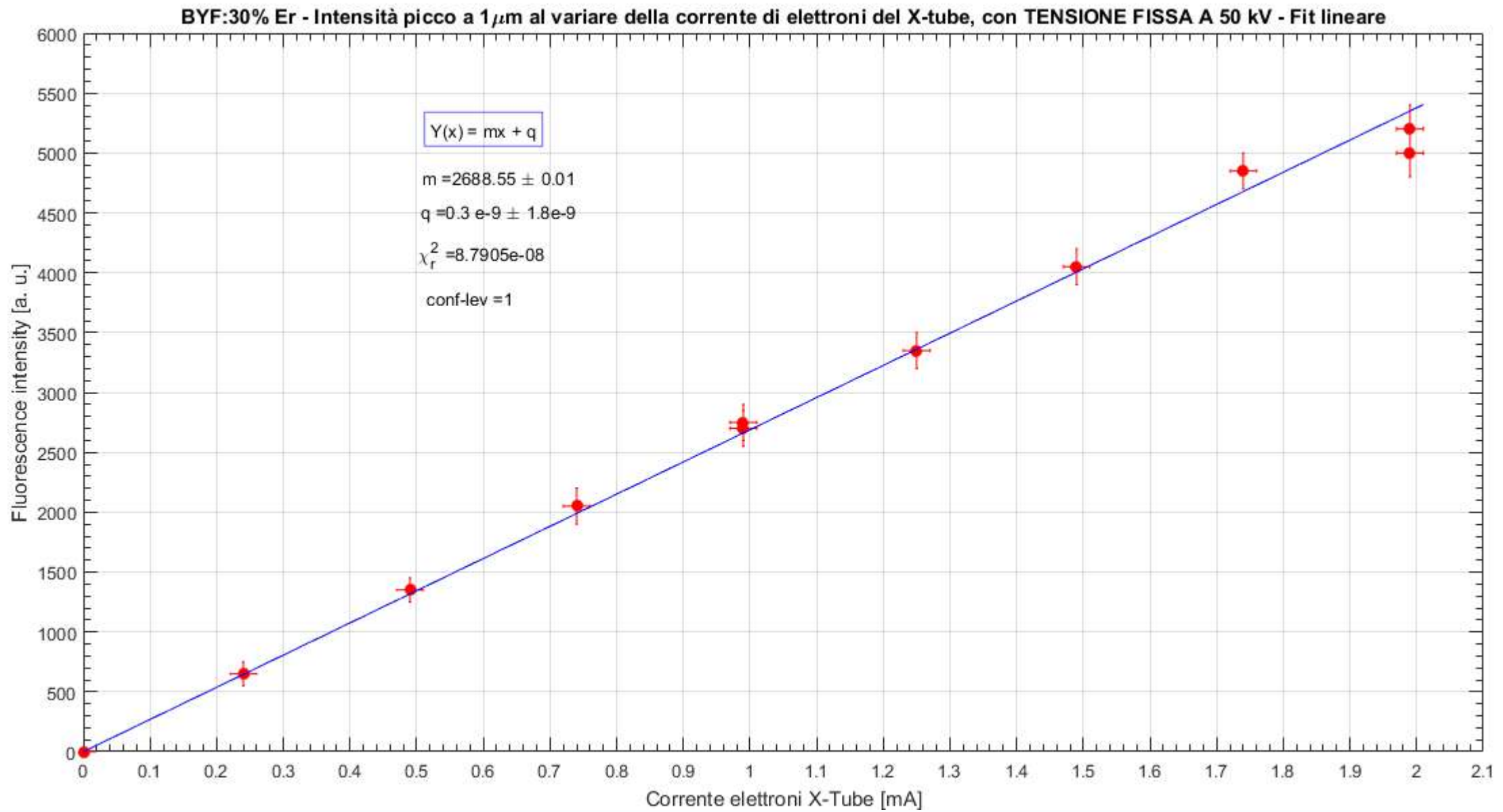


**BaY<sub>2</sub>F<sub>8</sub>: 30% Er<sup>3+</sup>,**

# BYF: Er 30%



# BYF: Er 30%



# BYF: Er 30%

