



SKAN-X RADIOLOGY DEVICES SRL

X-ray tubes manufacturing





WHO WE ARE

- Specialists since 60 years in designing, manufacturing and marketing stationary anode X-ray tubes
- Our aim is to be a partner of choice to our customers, and offer customized solutions with best technical performance at competitive prices



CEI History

- **1956** Engg. Bottonelli founds CEI in Bologna producing cathode x-ray tubes for kinescope
- **1978** The company specializes in x-ray tubes for the dental industry
- **1981** The Company starts producing medical x-ray tubes
- **1997** CEI is purchased by the Villa family, owning numerous companies in the medical sector
- **1999** ISO EN 9001 quality system is implemented and the company obtains CE mark
- **2004** The company is purchased by a consortium of investors. The company is equipped with a SAP management system for the administrative and production control.
- **2006** Collaboration with the physics department of the University of Bologna begins aimed at improving the production processes and performances of the tubes.
- **2014** Complete business, assets and employees of the Company acquired by Skanray technologies
- **2015** Investments exceeding EUR 500k in machinery for automations and cost reduction, quality & safety improvement, replacement of old machineries.
- **2016** Development of mini-focus and beryllium window tubes
- **2019-2020** 160 kV tubes. Development of high insulation cathode side tube and research on innovative cold cathode emission tube. Development of micro focus tube
- **2020-2021** Development of high voltage tube for industrial application

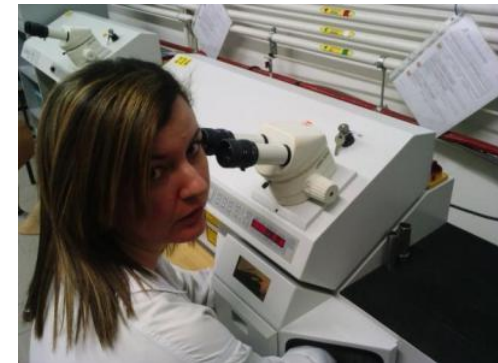


PRODUCTION FACILITY

Degassing/Pumping department



Cathode assembly department

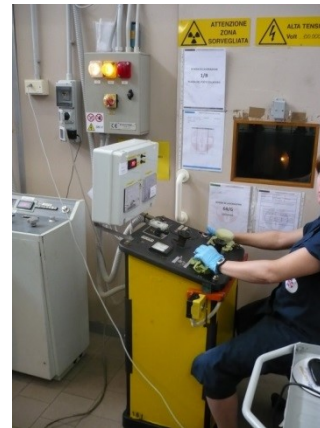




PRODUCTION FACILITY (CONT'D)

Testing & Seasoning department

Glass Blowing department



Chemical department





PRODUCTS

Small/Dental tubes

Medical tubes Mobile application

3D & CBCT

Bi-focal tubes

OX/70-P



OX/70-5



OPX/105



OPX/95



OPX/105-12



OX/110-15



OCX/65-G



OX/70-4



OX/105-2



OPX/105-4



OCX/100



OX/110-5



OX/70



OX/90



OX/110-1



OCX/105-4



OX/100



OX/110



OCX/70-G



OCX/70-G16



OX/125-M5



OX/125-M15



OX/125-M





Minifocus tubes



0.1, 0.2 Focal spot tube

70/80kV 2-8mA

Small size power tubes



Mobile application

Grounded anode, inside cooled long fluoro mode tubes



Long high power fluoro mode

Small size tubes



Small size, small focal spot tube

NEW PRODUCTS

High kV tubes



150 – 160kV



MEDICAL

CUSTOMERS

Carestream

PALODEX GROUP

SKANRAY

SIEMENS

SOREDEX

cefla

**VILLA
SISTEMI
MEDICALI**

Vertex
Vertex Medical Pvt. Ltd.

ind
International Medical Devices I.P.C.

ARDET

TECHNIX

Allengers

FONA

X-RAY UNITS

INDUSTRIAL

VJ GROUP
CONFIDENCE DELIVERED

BOSELLO
HIGH TECHNOLOGY
INDUSTRIAL X-RAY



**TELEDYNE
TECHNOLOGIES**
Everywhere you look™

Si Serel industrie



CEI TEAM- KEY PERSONNEL

	Carlo Dalla Val	CEO	- Master in Engineering, More than 20 years of experience in engineering MNCs. 15 years experience in x-ray business
	Lorenzo Giuliani	R&D Manager	- Bachelor's degree in Physics - 11 years of specialised experience in X-ray tube design
	Sergio Comito	Technical office	- Working in CEI for the last 17 years
	Gerardo Illustrazione	Production Manager	- Working in CEI for the last 17 years
	Stefano Piana	Sourcing Manager	- Working in CEI for the last 23 years
	Barbara Barbieri	Customer Care and sales	- Working in CEI for the last 23 years
	Pier Francesco Docci	Finance & Admin. Manager	- Over 20 years of industry experience
	Francesco Mariotti	R&D	-Degree in Physics with focus on x-ray interaction - 4 years experience in tube design
	Morena Benini	HR	- Working in CEI for the last 18 years



ACADEMIC COLLABORATIONS FOR RESEARCH

Prof. GIUSEPPE LEVI

- Decades of experience in UHV for space application
- Author of several research papers in the field of molecular physics

COOPERATION IN DEVELOPING CLEAN VACUUM PROCESS

Prof. GIAN FRANCO CAMPARI

- PhD in Physics from Bologna University in 1992
- Associate professor in Physics from 2001 at Bologna University
- Research interests: Superconductivity, Physics of metals, measure of gravitational constant (G)

COOPERATION IN COLD CATHODE EMISSION TUBE

Prof. GIOVANNI CARUGNO

- PhD, professor and researcher in Physics in Padova University
- Team leader for project of power conduction in high voltage in the Italian National Institute of Nuclear Physics

COOPERATION IN HIGH INSULATING PHOTOEMITTING CATHODE TUBES



CEI's strength points

- **Top quality at affordable price due to high level of automation**
- **Ability to develop quickly customised tubes**
- **High flexibility in delivery: Kanban, Consignment stock.**
- **Delivery of small batches**
- **Dedicated and customised products even in small quantity**
- **Technical support to customers for tubes application**
- **Technical support for HV generator development**



BENCHMARKING MEDICAL

	CEI	TOSHIBA	others
QUALITY	Consistency of quality proven over many years	Consistency of quality proven over many years	Not consistent, due to too high turnover and lower quality perception.
PRICE	Price lower than big players at the same quality. Price reduction planned through investments in automation and new developments and not with labour intensive or currency benefit.	Aligned to CEI only because of the exchange rate USDvsJYN. Normal price much higher. Price level is not consistent. Product is more expensive than CEI	Low because of low quality materials and machining. Also labour intensive.



BENCHMARKING MEDICAL

	CEI	TOSHIBA	others
TECHNCIAL SUPPORT	TOTALLY ORIENTED TO SUPPORTING CUSTOMER IN DEVELOPMENT. NEW SUPPORT FROM SKANRAY CAN BRING BENEFIT ALSO IN GENERATOR DESIGN. FULL CONTACT AT ANY TIME.	POOR SUPPORT DUE TO LONG DISTANCE AND COMPANY RIGIDITY. NO DIRECT CONTACT TO HEADQUARTER.	LOW NUMBER OF ENGINEERS ABLE TO DEAL WITH CUSTOMER. TIME DIFFERENCE MAKES IT EVEN MORE COMPLICATED.
LOGISTIC	HUGE FLEXIBILITY DEMONSTRATED IN ALL SCHEDULE VARIATIONS DURING THOSE YEARS. KANBAN AND CONSEIGNEMENT STOCK ARE AVAILABLE	REDUCED FLEXIBILITY DUE TO LONG SOURCING PROCESS.	SHIPMENT FROM CHINA ARE MORE COMPLICATED. COMPANY PROCESS VERY RIGID.



BENCHMARKING MEDICAL

	CEI	TOSHIBA	others
RANGE OF PRODUCT	FULL RANGE OF PRODUCTS FOR DENTAL. MANY MODELS AVAILBLE FOR DEDICATED APPLCIATION. ABILITY TO DEVELOP CUSTOMISED SOLUTION IN FEW WEEKS.	VERY RIGID ON TUBE SPECS. VERY LONG TIME FOR NEW DEVELOPMENTS.	ALL MODEL BASED ON COPYING LEADING PLAYERS.
PRODUCT CUSTOMIZATION	THE TUBE CAN BE FULLY CUSOTMIZED LIKE SHOWN IN THOSE YEARS: HARNESS (pcb+capacitor+wires+connector), SHANK, SHAPE, PERFORMANCES, BAR CODE, FOCAL SPOT MEASUREMENT , PACKAGING	LOW POSSIBILITY TO CUSTOMISE THE TUBE.	LOW ABILITY TO PROPOSE AND MAKE CUSTOMISED PRODUCT DUE TO COMPANY AVAILABILITY OF RESOURCES.



BENCHMARKING INDUSTRIAL/NDT

	CEI	LOHMANN	others
QUALITY	Consistency of quality proven over many years in medical field where standard are more stringent.	Consistency of quality proven over many years in industrial field	Not consistent, due to too high turnover and low standardized procedures
PRICE	Price lower than big players at the same quality. Price reduction planned through investments in automation and new developments and not with labour intensive or currency benefit.	Much higher than CEI. CEI can benefit of many automation for mass production, extended to industrial tubes.	Low because of low quality materials and machining. Also labour intensive.



BENCHMARKING INDUSTRIAL/NDT

	CEI	LOHMANN	others
LOGISTIC	HUGE FLEXIBILITY DEMONSTRATED IN ALL SCHEDULE VARIATIONS DURING THOSE YEARS. KANBAN AND CONSIGNMENT STOCK ARE AVAILABLE	REDUCED FLEXIBILITY DUE TO NOT TOO DEMANDING MARKET.	SHIPMENTS FROM CHINA OR OUT OF EUROPE ARE MORE COMPLICATED.



SYNERGIES DUE TO SKANRAY ACQUISITION

- A total investment of 2.000.000€
- New investments of 600.000€ in Technology for expanding the range of products and for reducing tubes costs.
- SkanRay offers the development of new generation x-ray machines in order to reduce engineering costs associated to new developments.
- SkanRay offers to customers the possibility to buy OEM top quality generators.