PRODUCT CATALOG

# X-RAY SCANNERS

## ELEKTRON



ELEKTRONIK SYSTEM®



**www.detektorymetali.com**

# NEW FACTORY OUR COMPANY

Here, in Elektronik System, we have been producing detection systems for all metals and other foreign bodies in food, knitting and industrial products since 1995. Many years of experience and improvements inspired by our clients have allowed us to implement user-friendly and intuitive systems over the years. The highest level of detection, reliability and stability of metal detectors and X-Ray scanners is appreciated by our customers around the world. Our machines replace human work and do not require complicated handling. In our metal detectors, we have introduced a non-contact auto-learning system and an auto-calibration system - unparalleled in other detectors. 10-year warranty on metal detector heads proves the highest quality of our products. X-Ray scanners using state-of-the-art solutions in the field of ionizing radiation are at the forefront of world leaders.

# COMPANIES THAT TRUST US

SuperDrob

STANISŁAWÓW
ZAKŁADY MIĘSNE

WIPASZ jest nasz!

Pomerania

HILDING ANDERS

Kwalita

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FRUCT FRESH

Mniam Mniam

ROLMEX

KaMos

BIZON

CARUMO POLSMAK

BAKALIE Laro PREMIUM

Polskie Jagody
Grupa Producentów Owoców „Polskie Jagody" Sp. z o.o.

ARNICA
CZTERY STRONY SMAKU

APACK
COPACKING
JAKOŚĆ I TERMINOWOŚĆ

KOSIEK
PIEKARNIA CUKIERNIA

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ŚRODA WIELKOPOLSKA
ZAKŁAD PRZETWÓRSTWA OWOCOWO-WARZYWNEGO

Kartofelek

MAKO

Rizoma

1998
malmon
powody do wypieków

## APPLICATION

X-Ray scanners **ELEKTRON-SXRF** are designed for the detection of foreign bodies in loose and packed products, in particular in metallized, aluminum, glass and metal-closed packaging and in metal cans.

## RANGE OF DETECTION

X-Ray scanners are distinguished by the highest sensitivity and stability of work. The highest efficiency in the elimination of foreign bodies ensures the highest quality of products.
Our X-Ray scanners detect:
SUS - ø 0.3mm, SUS wire 0.2x1mm,
glass - ø1mm, ceramics - ø1mm, stone - ø1mm
using a high power lamp and LED receiver - 0.4mm.

## PRINCIPLE OF OPERATION

The X-Ray scanner detects any foreign bodies which density and specific gravity is higher than water (any body that sinks immediately in the water). For such foreign bodies mainly metals, stones, glass, bones or hard plastic.The DUAL ENERGY device raises the level detection of lower density contaminants, e.g. small bones, rubber, plastic.

## MAIN FEATURE

- The highest level of detection,
- Compliant with CE, FDA, CSA directives and standards,
- Warranty for the scanner for 24 months,
- 24h technical support - WAN,
- Easy and intuitive user interface,
- Visual information system with X-rays on,
- Matched contaminated product separation systems to the type, size and weight of the product,
- Testing the product with and without packaging,
- Changing the conveyor belt in 30 seconds,
- Built-in weight controller- X-Ray scanner eliminates products with incorrect weight as low as 1-5 grams depending on the type of product.
- Detection of defective products with detriment (deformed product, crumpled can, missing product or defective product)
- Automatic diagnostics and security control system (detection of open inspection door in immediate device stop and shutdown X-ray lamp radiation).

## ADDITIONAL ADVANTAGES

- System levels password protected for several levels,
- Possibility of individual adjustment of the device to the production line with high accuracy,
- Modernization of devices in accordance with the requirements and expectations of our customers.
- All our scanners are certified by the National Atomic Energy Agency No. D-17869,
- Marking the X-Ray scanner in accordance with the requirements of the strategic recipient,
- Technical drawings in the form of DWG at the stage of detailing,
- Central control of additional devices, e.g. dirt separators, feeding and receiving conveyors and return conveyors.

## „FROST" SYSTEM

The X-Ray scanner can be equipped with an unparalleled in other devices, the **"FROST" system** with a built-in intelligent heating and thermostat system, inside the control panel, which protects the internal electronics against moisture and cold. This is the only protection against sudden temperature changes when washing cold machines with hot water, this system prevents moisture absorption inside closed chambers with electronics and electrics. "FROST" is irreplaceable especially in the meat and fish industry, and especially for frozen food.

## LIST OF COMPONENTS

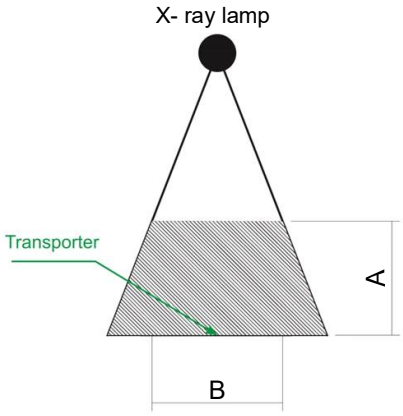
| FUNCTION | NAME | PRODUCER |
|---|---|---|
| X-Ray source | X-Ray generator | VJ USA |
| X-Ray receiver | X-Ray detector | DT FINLANDIA |
| Device management | 17 "touch monitor | iEi |
| Data processing | Industrial computer | DFI |
| Temperature and wetness control | Air conditioner | PFANNENBERG |
| Conveyor belt drive | Engine with gear | ORIENTAL MOTOR |
| Speed regulation | Enginr controller | ORIENTAL MOTOR |
| Electric protection | Miniature circuit breakers | SCHNEIDER ELECTRIC /ABB |
| Connection between devices | Military connectors | PLT |
| Safety management | Limit switches | OMRON |
| Automation management | PLC driver | SCHNEIDER ELECTRIC |
| Warning information | Optical-acoustic signaller | WERMA |

# I LAPM X-RAY SCANNER ELEKTRON-SXRF

- Based on the highest technical achievements,
- The only software that lets you scan asymmetric and drifting products unique position,
- Intuitive and very simple operation,
- The oversized lamp power range provides much longer life than other scanners available on the market.


| Model | ELEKTRON-SXRF |
|---|---|
| Specification | **4080, 5080, 6080, 8040** |
| Maximum height of the test product | 220 mm, 250 mm,<br>300 mm, 400 mm |
| Maximum width of the test product | 400 mm, 500 mm<br>600 mm, 795 mm |
| X-Ray Lamp | MAX. 80 kV, 210/350/480 W |
| Smallest detectable testers possible | St / st ball from 0.3 mm, wire from 0.2x1 mm<br>Glass / Ceramic ball from 1.0 mm |
| Belt speed | Adjustable in the range of 0-60 m / min |
| Connection | LAN port, USB port |
| Product management | Automatic saving of the parameters of the tested product |
| Image management | Automatic image saving and analysis |
| Display | 17 ”touch screen |
| Cooling | Industrial air conditioner |
| Separator | Pneumatic separator, 2-track (option) |
| Radiation protection | Protective tunnel and security system |
| External radiation | < 1µSu/h |
| Working temperature | from -10˚C to 40 ˚C |
| Working humidity | 30-90% non-condensing steam |
| Supply voltage | 230 VAC |
| Power | 1200 W |
| IP class | IP65 |
| Air pressure | 6-8 bar |
| Main material | Glass-blasted stainless steel |

# X-RAY SCANNER SELECTION




The type and type of the X-Ray scanner are selected according to the customer's requirements. The product dimension must be entered in the detection cone according to the table below.

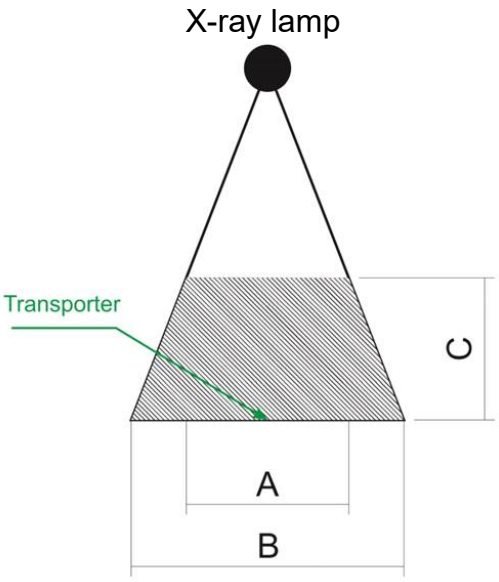
| Model | SXRF-4080 | SXRF-5080 | SXRF-6080 | SXRF-8040 |
|---|---|---|---|---|
| Height **(C)** | Width **(B)** | | | |
| 0 mm | 400 mm | 500 mm | 600 mm | 795 mm |
| 10 mm | 390 mm | 489 mm | 589 mm | 785 mm |
| 20 mm | 380 mm | 477 mm | 576 mm | 777 mm |
| 30 mm | 371 mm | 466 mm | 564 mm | 768 mm |
| 40 mm | 361 mm | 455 mm | 552 mm | 759 mm |
| 50 mm | 351 mm | 443 mm | 540 mm | 750 mm |
| 60 mm | 341 mm | 432 mm | 528 mm | 742 mm |
| 70 mm | 331 mm | 420 mm | 515 mm | 733 mm |
| 80 mm | 322 mm | 409 mm | 503 mm | 724 mm |
| 90 mm | 312 mm | 398 mm | 490 mm | 716 mm |
| 100 mm | 302 mm | 386 mm | 478 mm | 707 mm |
| 110 mm | 292 mm | 375 mm | 466 mm | - |
| 120 mm | 282 mm | 363 mm | 454 mm | - |
| 130 mm | 272 mm | 352 mm | 441 mm | - |
| 140 mm | 263 mm | 340 mm | 429 mm | - |
| 150 mm | 253 mm | 329 mm | 417 mm | 663 mm |
| 160 mm | 244 mm | 218 mm | 405 mm | - |
| 170 mm | 234 mm | 307 mm | 393 mm | - |
| 180 mm | 224 mm | 295 mm | 380 mm | - |
| 190 mm | 214 mm | 284 mm | 368 mm | - |
| 200 mm | 204 mm | 272 mm | 356 mm | 619 mm |
| 210 mm | 194 mm | 261 mm | 344 mm | - |
| 220 mm | 185 mm | 250 mm | 331 mm | - |
| 230 mm | - | 239 mm | 319 mm | - |
| 240 mm | - | 227 mm | 307 mm | - |
| 250 mm | - | 216 mm | 295 mm | 576 mm |
| 260 mm | - | - | 282 mm | - |
| 280 mm | - | - | 258 mm | - |
| 300 mm | - | - | 233 mm | 532 mm |
| 350 mm | - | - | - | 488 mm |
| 400 mm | - | - | - | 445 mm |

# X-RAY SCANNER ELEKTRON-SXRF-2480

- Perfect for any research products packed in metallised foils, aluminum trays, flat metal cans.
- Quick and intuitive tape removal for washing and disinfection working chamber.
- Work safety - radiation "X" is less than 1 microsievert thanks why the device meets European standards CE and US FDA.


| Model | ELEKTRON-SXRF-2480 |
|---|---|
| Maximum height of the test product | 160mm |
| Maximum width of the test product | 240mm |
| X-ray lamp | Max. 80KV 100W, 210W, 350W |
| The smallest possible detectable testers | St/st ball from 0.3 mm, wire from 0.2x2 mm<br>Glass/Ceramic ball from 1.0 mm |
| Tape speed | Adjustable in the range of 10-60 m/min |
| Connection | LAN port, USB port |
| Product management | Automatic recording of the parameters of the tested product |
| Image management | Automatic image saving and analysis |
| display | 17” touch screen |
| Cooling | PFANNENBERG industrial air conditioner |
| Recoil type | Pneumatic separator |
| Radiation protection | Protective tunnel and security system |
| External radiation | < 1µSu/h |
| Working temperature | from 0˚C to 40˚C |
| Working humidity | 30-90% non-condensing water vapor |
| Supply voltage | 230VAC |
| Power consumption | 1200W |
| Tightness class | IP65 |
| Material | Glass-blasted stainless steel |

## SELECTING AN X-RAY SCANNER

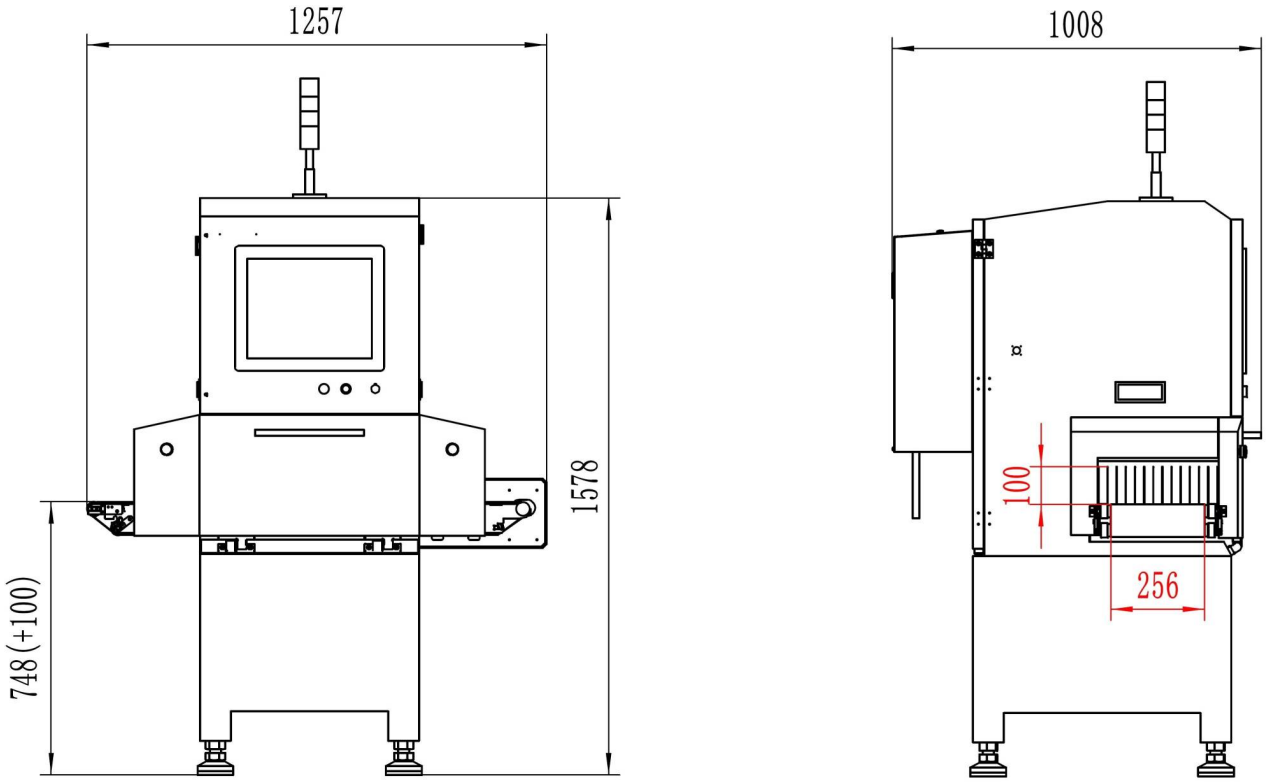



| | |
|---|---|
| A | 180 mm |
| B | 240 mm |
| C | 160 mm |

The type and type of the X-Ray scanner are selected according to the customer's requirements. The product dimension must be entered in the detection cone according to the table below.

| Product height(A) | Product width (B) |
|---|---|
| 0 mm | 240 mm |
| 10 mm | 236 mm |
| 20 mm | 233 mm |
| 30 mm | 229 mm |
| 40 mm | 225 mm |
| 50 mm | 221 mm |
| 60 mm | 217 mm |
| 70 mm | 214 mm |
| 80 mm | 210 mm |
| 90 mm | 206 mm |
| 100 mm | 202 mm |
| 110 mm | 198 mm |
| 120 mm | 194 mm |
| 130 mm | 191 mm |
| 140 mm | 188 mm |
| 150 mm | 184 mm |
| 160 mm | 180 mm |

## ELEKTRON-SXRF-2480 X-RAY SCANNER DIMENSIONS



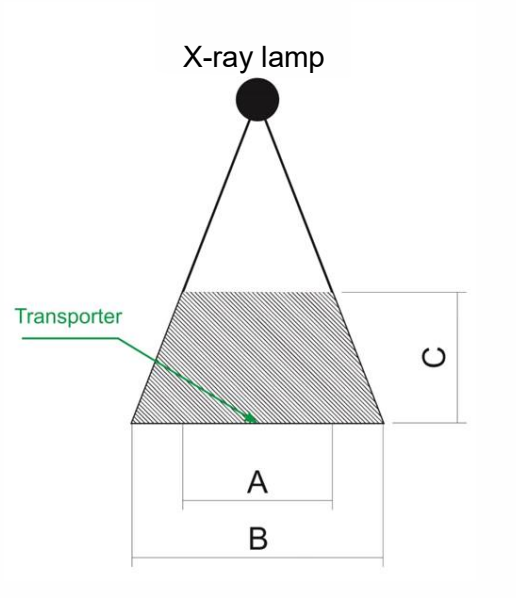
# MINI X-RAY SCANNER ELEKTRON-SXRF-1820 2820

- Offer of small and cheap X-Ray scanners for testing products in cardboard packaging, plastic, PET, PE, vaccum, with metallization, aluminum, glass, in bottles, in low jars with a metal cap and in metal jars flat cans.
- High vigilance and work stability - the highest achievable at the highest radiation penetration through product.
- Work safety - "X" radiation is less than 1 microsievert, thanks to which the device meets European CE and American FDA standards.


| Model | ELEKTRON-SXRF 1820 2820 |
|---|---|
| X-ray lamp | MAX. 65kV, 150W |
| Detector | 0.4mm |
| Maximum product height | 150mm |
| Maximum product width | 193mm 290mm |
| Maximum belt load | 10kg |
| Tape speed | Adjustable in the range of 10-80 m/min |
| Connection | LAN port, USB port |
| Product management | Automatic recording of the parameters of the tested product |
| Image management | Automatic image saving and analysis |
| Parameter adjustment | Automatic self-learning |
| display | 15” touch screen |
| Operating system | Windows |
| Cooling | Industrial air conditioner |
| Radiation protection | Protective curtains |
| External radiation | < 1µSu/h |
| Working temperature | from -10˚C to 40˚C |
| Working humidity | 30-90% non-condensing water vapor |
| Supply voltage | 230VAC |
| Power consumption | 1200W |
| Tightness class | IP65 |
| Machine cleaning level | Easy |
| Material | Glass-blasted stainless steel |

# LAMP SETTINGS SCHEME

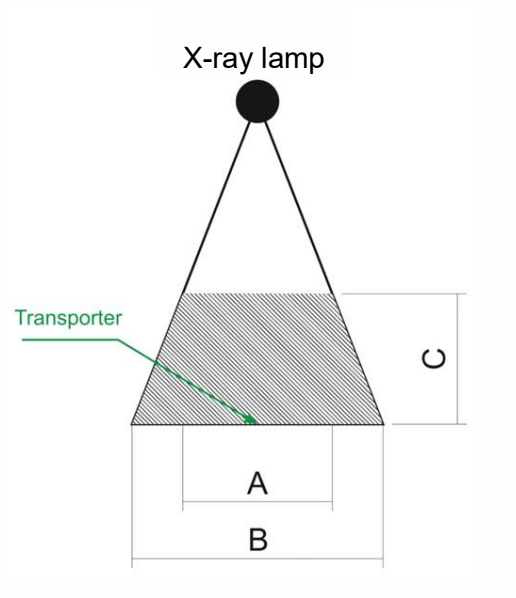
## ELEKTRON-SXRF-1820




| | |
|---|---|
| A | 114 |
| B | 193 |
| C | 150 |

| Product height (C) | Product width (A) |
|---|---|
| 0 mm | 193 mm |
| 10 mm | 188 mm |
| 20 mm | 183 mm |
| 30 mm | 178 mm |
| 40 mm | 173 mm |
| 50 mm | 167 mm |
| 60 mm | 162 mm |
| 70 mm | 156 mm |
| 80 mm | 151 mm |
| 90 mm | 146 mm |
| 100 mm | 140 mm |
| 110 mm | 135 mm |
| 120 mm | 130 mm |
| 130 mm | 125 mm |
| 140 mm | 119 mm |
| 150 mm | 114 mm |

## ELEKTRON-SXRF-2820




| | |
|---|---|
| A | 176 |
| B | 290 |
| C | 150 |

| Product height (C) | Product width (A) |
|---|---|
| 0 mm | 290 mm |
| 10 mm | 282 mm |
| 20 mm | 274 mm |
| 30 mm | 267 mm |
| 40 mm | 260 mm |
| 50 mm | 251 mm |
| 60 mm | 243 mm |
| 70 mm | 237 mm |
| 80 mm | 228 mm |
| 90 mm | 220 mm |
| 100 mm | 213 mm |
| 110 mm | 205 mm |
| 120 mm | 197 mm |
| 130 mm | 190 mm |
| 140 mm | 182 mm |
| 150 mm | 176 mm |

# DUAL ENERGY X-RAY SCANNER ELEKTRON-SXRF-4080DE

This X-Ray scanner has the highest detection level among X-Ray scanners, especially intended for elimination bones and bones, as well as to other bodies foreign i.e. glass, rubber, plastic. This is due to the latest technology so-called **DUAL ENERGY.**


| Model | ELEKTRON-SXRF |
|---|---|
| Specification | 4080DE |
| Maximum height of the test product | 100 mm |
| Maximum width of the test product | 400 mm |
| X-Ray Lamp | MAX. 80 kV, 350W |
| Smallest detectable testers possible | St/st ball from 0.3 mm, wire from 0.2x2 mm<br>Glass/Ceramic ball from 1.0 mm |
| Belt speed | Adjustable in the range of 10-40 m / min |
| Operating system | Windows 7 |
| Display | 17” touch screen |
| Cooling | Industrial air conditioner |
| Kind of kickback | Pneumatic separator |
| Radiation protection | Protective tunnel and security system |
| External radiation | < 1µSu/h |
| Working temperature | from -10˚C to 40 ˚C |
| Working humidity | 30-90% non-condensing steam |
| Supply voltage | 230 VAC |
| Power consumption | 1200 W |
| Tightness class | IP67 |
| Air pressure | 0.8 Mpa |
| Material | Glass-blasted stainless steel |

## X- RAY SCANNER WITH DUAL ENERGY

The ELEKTRON-SXRF-4080DE X-Ray scanner uses two-energy beams different levels. The first beam of ionizing radiation goes to the damping receiver. This effect occurs when the beam is filtered on part of the receiving circuit. Then the scanner generates a second beam energy to the second part of the receiver, analyzes the scanned object and compares it image. The high and low energy signals obtained by the dual energy system are sent to computer, which are calculated on the basis of processed data and values related to the equivalent the atomic number of the substance. The software automatically compares high and low energy images, analyzes whether there is a difference in the atomic number of the stored standard and the foreign body using an algorithm hierarchical.

# I LAMP X-RAY SCANNER ELEKTRON-4080S-FLAP ASG

- The scanner is particularly dedicated to the examination of frozen fruits and vegetables.
- Single beam scanning technology product with a single directed lamp from top to bottom.
- Auto sensitivity function - makes it possible to reduce the sensitivity for the box aluminum and an increase for its content.
- Built-in air conditioner - allows the device to work in all temperature conditions.


FROST

| Model | ELEKTRON-SXRF | |
|---|---|---|
| Specification | 4080 | |
| Maximum height of the test product | 110 mm | |
| Maximum width of the test product | 400 mm | |
| X-Ray Lamp | MAX. 80 kV, 350W | |
| Smallest detectable testers possible | Steel ball from 0.3 mm, steel wire from 0.2x2 mm, Glass / Ceramic ball from 1.0 mm | |
| Belt speed adjustable in the range | 0-60 m/min | 10-120 m/min |
| Recoil mode | Air separator consisting of 32 independent channel repeller nozzles. Possibility to divide into 4/2/1 channels | Air separator consisting of 48 independent channel repeller nozzles. Possibility to divide into 4/2/1 channels |
| Operating system | Windows 7 | |
| Connection | LAN port, USB port | |
| Product management | Automatic recording of the parameters of the tested product | |
| Image management | Automatic image saving and analysis | |
| Display | Touch screen | |
| Cooling | Industrial air conditioner | |
| Radiation protection | Protective tunnel and security system | |
| External radiation | < 1µSu/h | |
| Working temperature | from -10˚C to 40 ˚C | |
| Working humidity | 30-90% non-condensing steam | |
| Supply voltage | 230 VAC | |
| Power consumption | 1500 W | |
| Tightness class | IP65 | |
| Air pressure | 0.8 Mpa | |
| Material | Glass-blasted stainless steel | |

# I LAMP X-RAY SCANNER ELEKTRON-SXRF-1630I

- The X-Ray scanner is designed for thorough examination of products in a standing position packed in bottles, jars with a screw cap, tall metal cans.
- High level of detection and stable operation when scanning products fed linearly and, wich is unprecedented in other scanners, also for products entering adrift.
- Single beam technology scanning the product with a lamp sideways to the test product in a standing position.
- The device has been equipped with a fast pneumatic separator.

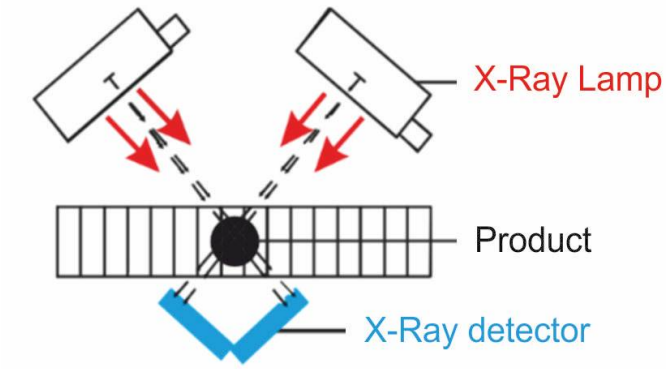
| Model | ELEKTRON-SXRF |
|---|---|
| Maximum height of the test product | 300mm |
| Maximum width of the test product | 160mm |
| X-ray lamp | 380-480W/ 120kV |
| The smallest possible detectable testers | St/st ball from 0.5 mm, wire from 0.3x2 mm<br>Glass/Ceramic ball from 1.5 mm |
| Belt speed adjustable in the range | 10-60m/min |
| Operating system | Windows 7 |
| Connection | LAN port, USB port |
| Product management | Automatic recording of the parameters of the tested product |
| Image management | Automatic image saving and analysis |
| display | 17” touch screen |
| Cooling | Industrial air conditioner |
| Radiation protection | Protective tunnel and security system |
| External radiation | <0.5µSu/h |
| Working temperature | from -10˚C to 40˚C |
| Working humidity | 30-90% non-condensing water vapor |
| Power | 3.5 kW |
| Tightness class | IP66 |
| Air pressure | 0.8Mpa |
| Material | Glass-blasted stainless steel |

# II LAMP X-RAY SCANNER ELEKTRON-SXRF-2080II

- Dual-beam product scanning technology using two lamps aimed at an angle. Designed for products in jars, cans, bottles, etc., among others.
- By screening the product from two different angles, the system eliminates dead spots that occur on the irregular edges of packagingsuch as a glass jar or bottle.
- Ability to create several independent detection areasfor selected product zones (e.g., top, middle or bottom of the product).


| Model | ELEKTRON-SXRF |
|---|---|
| Two X-Ray lamps | MAX. 480W/120kV |
| Maximum width of the test product | 200 mm |
| Maximum height of the test product | 250 mm |
| Smallest detectable testers possible | Steel ball from 0.5 mm<br>Steel wire from 0.3*2mm<br>Glass / Ceramic ball from 1.5 mm |
| Transporter speed | 10-60 m/min |
| Operating system | Windows 7 |
| Radiation protection | Protective tunnel |
| External radiation | < 0,5 µSv/h |
| Tightness class | IP66 |
| Working temperature | from -10 to +40 °C |
| Working humidity | 30 ~ 90 % |
| Cooling | Industrial air conditioner |
| Recoil system | Pusher |
| Air pressure | 0,6-0.8 Mpa |
| Power | 3.5 kW |
| Material | Glass-blasted stainless steel |

# LAMP SETTING




The technological connection of two beams examining the product ensures a high level of detection.

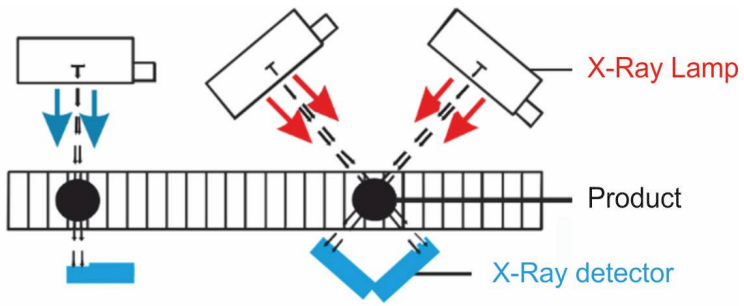
# III LAMP X-RAY SCANNER ELEKTRON-SXRF-2025III

- Three-beam product scanning technology.
- Advanced analysis system using three image sources ensures the highest level of quality in the production process. Designed for products in jars, cans, bottles, etc., among others.
- Irregular shape and defects in packagingof the product do not affect the detection level.
- The built-in air conditioner allows the device to work in all conditions.


- By screening the product from three different angles, the system eliminates as many of the dead spots as possible, which are most often found at the bottom of jars or bottles.

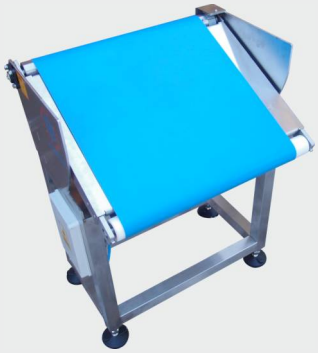
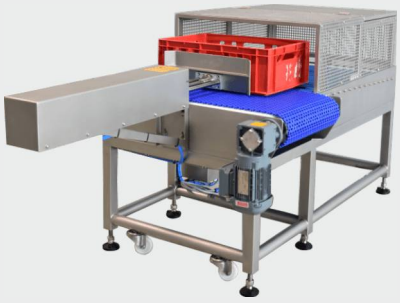
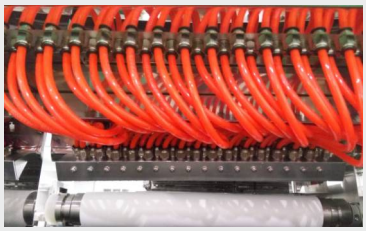
| Model | ELEKTRON-SXRF |
|---|---|
| Three X-Ray lamps | MAX. 480W/120kV |
| Maximum width of the test product | 200 mm |
| Maximum height of the test product | 250 mm |
| Smallest detectable testers possible | Steel ball from 0.5 mm<br>Steel wire from 0.4*2mm<br>Glass / Ceramic ball from 1.5 mm |
| Transporter speed | 10-50 m/min |
| Operating system | Windows 7 |
| Radiation protection | Protective tunnel |
| External radiation | < 1 µSv/h |
| Tightness class | IP66 |
| Working temperature | from -10 to +40 °C |
| Working humidity | 30 ~ 90 % |
| Cooling | Industrial air conditioner |
| Recoil system | Pusher |
| Air pressure | 0.6 Mpa |
| Power | 3.5 kW |
| Material | Glass-blasted stainless steel |

# LAMP SETTING




The technology of combining three beams that examine the product, provides the highest level of detection.

# TYPES OF SEPARATORS

| | | |
|---|---|---|
| **Single separator**<br><br>Separator in the form of a mobile trap door for rejecting loose products in one row. |  |  |
| **Double separator**<br><br>Separator in the form of two movable chutes for the discharge of products fed in two rows independently. |  |  |
| **Separator in the form of a falling conveyor**<br><br>Separator in the form of a descending conveyor for the discharge of loose products in one row, with a closed zone and a lockable container. |  |  |
| **Pusher**<br><br>Separator in the form of a pusher for the rejection of E1, E2 boxes and large and heavy bags and cartons. |  |  |
| **ASG (air shotgun ) - separator**<br><br>The X-Ray scanner divides the conveyor belt into 8 independent channels, with 34 or 48 air nozzles for precise rejection of foreign objects with a small amount of product. |  |  |

# EXAMPLE STRUCTURES



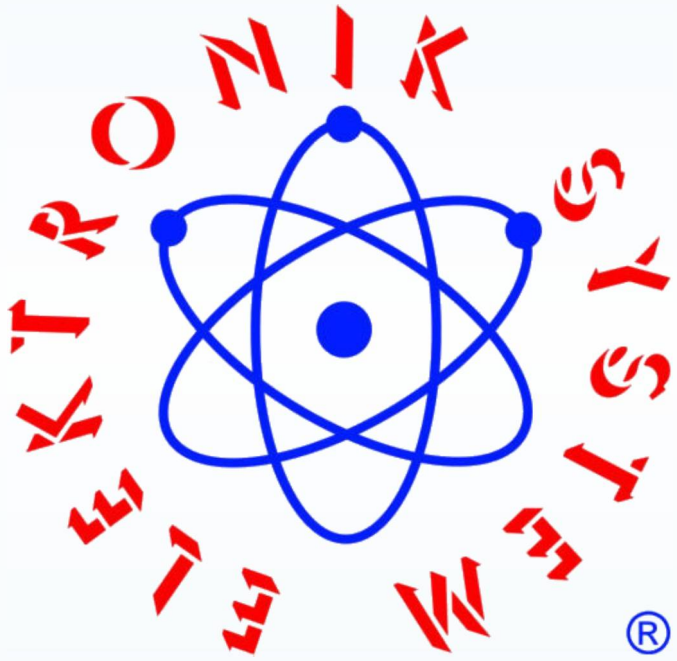


# EXAMPLE STRUCTURES





# www.detektorymetali.com

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