

# YXLON PRODUCT CATALOG

Portable and mobile X-ray systems

**YXLON**  
Technology with Passion



reddot award 2015  
best of the best

# MEET THE FUTURE

Creating a new product usually starts with a dream; a dream that is often compromised by the design limitations of materials, technology or resources. At YXLON Copenhagen, we don't compromise on our dreams. By combining our years of experience and knowhow with the latest in design thinking, we've created the most uncompromising product range yet. Meet SMART EVO; the future of portable X-ray equipment.

## AN UNCOMPROMISING APPROACH

"When we started the EVO project, our ambition was to create a portable product range with high X-ray performance and a state-of-the-art interface between the operator and the equipment," explains Product Manager Jan Bressendorff, one of the minds behind the SMART EVO series.

"When constructing portable equipment, it's crucial to find the right balance. The trick is to make products that are light-weight and still robust with high performance. Usually, this results in a trade-off – but not with the SMART EVO series, where we've succeeded in making the range even more robust and light-weight, while improving the thermal performance."

## THE HEART OF THE SYSTEM

The control unit, CONTROL EVO, has catapulted portable X-ray equipment into the 21st century. Combined with the redesigned SMART EVO tube head, it's a system that sets the standard for many years to come.

A powerful computer with an intuitive user interface is the core of CONTROL EVO. With direct access to basic

and advanced functions and features such as exposure calculations and exposure profiles, the unit simplifies and speeds up both fieldwork and diagnostics.

An advanced exposure calculator allows users to define input for film type profiles, material type, thickness and density, distance to the object and the required kilovolt. It also calculates the optimal mA setting and exposure in real-time. User support is also provided for all film types and digital imaging.

"When you're out on field inspection, you're not wearing kid gloves"

## BUILT FOR EXTREMES

"Part of the brief for the design of the new EVO series was that it should be extremely robust and work anywhere in the world – even in the harshest and most remote environments," says Jan Bressendorff.

"One of the real-life challenges faced by our customers around the world is an inconsistent or differing electrical power supply. That's why we equipped the new CONTROL EVO with a Power Factor Correction module that can handle voltage input from 85 to 264 VAC. Now, you can be fully operational on every global power grid and insensitive to unstable grid voltages," he adds. "We also know, first-hand, the treatment our products have to withstand. It's a tough job." He smiles. "When you're out on field inspection, you're not wearing kid gloves, and the knocks, drops and scrapes from regular use have to be taken into SMART EVO's stride," says Jan.

With its smart robust design, improved ergonomics for better handling, and integrated protective bumpers, the SMART EVO series is built to last. And with IP65 protection standard, it's fully operational in dusty and wet conditions, with the cabinet protecting all vital parts.



“We’ve succeeded in making the range even more robust and light-weight, while improving the thermal performance”

## LOOKING BACK AND MOVING FORWARD SAFELY

“Knowing how long-lasting and robust your existing YXLON products are, we designed the CONTROL EVO to be retro-compatible – with support for all product specific cables. With our new design, we were very much aware that our customers needed to maximize the value of all their existing equipment and to make fleet management flexible and efficient,” says Jan Bressendorff.

“And safe operation is a given,” he adds. “The SMART EVO series complies with all international radiation leakage standards and the European machinery directive. It doesn’t get safer than that.”

## EXCELLENT IMAGE QUALITY WITH DIGITAL TECHNOLOGY

By introducing the small 1.0 mm focal spot we also significantly improve the quality by reducing unsharpness, making the output resolution higher and the ability to detect defects or see small details greater, generating much sharper image output.

It ensures superior digital detector based inspection, and major advantages when using conventional film, optimizing the exposure time and making radiography inspection more efficient.



## reddot award 2015 best of the best

### WINNER OF THE RED DOT AWARD

SMART EVO is an award-winning top achievement after being presented with the prestigious Red Dot Award; Best of the Best in Product Design 2015.

SMART EVO won over the 38-member jury of the Red Dot Award and proved its design excellence in this respected global competition. Out of 4,928 participants, SMART EVO stood out and was awarded the Red Dot: Best of the Best for top quality and innovative product design.

Statement by the jury: “The design of SMART EVO impressively combines the innovative technology of the CONTROL EVO unit with a portable system for non-destructive testing. As such, this system sets new standards for the future. It fascinates with a highly user-friendly operation, which allows it to be perfectly adjusted to various workflows even under the most extreme conditions. It is compact and ergonomically well thought-through.”



# MAKING THE SMART EVO UNIQUE

## BUILT TO LAST

Designed and built in Denmark; the SMART EVO systems are comprised of the best components and assembled with the utmost care – making them reliable, long lasting and a sound investment. They are fitted with a high quality metal ceramic X-ray tube and the robust composite casing now protects all vital parts even better. The systems meet the IP65 standard, making them fully operational in dusty and wet conditions.

## SMARTER WORKFLOW

The ergonomic design and the low weight makes the SMART EVO systems easy to handle and re-position. A broad temperature range from -20°C to +50°C makes the EVO systems reliable and ensures smooth operation even in extreme environments. The intuitive interface allows for a smarter workflow.

## HIGH PERFORMANCE

Built to meet the highest international safety standards, each unit is individually tested and measured for safety and accuracy. The SMART EVO systems feature focal spots from 1.0 mm to 3.0 mm and ranges from 750 W to 900 W constant potential X-ray power ensuring high performance, shorter exposure times and high resolution results.

# SMART EVO INTEGRATION

## ORIGINAL EQUIPMENT MANUFACTURER

X-ray solutions from YXLON Copenhagen have been integrated as X-ray source into numerous customer systems during the past decades, covering a broad range of industries from food inspection, luggage inspection, to pipeline crawlers. Our many years of experience enable us to support the entire project cycle from idea and proof-of-concept into regular industrialization and operation.

## RELIABLE X-RAY SOURCE

The SMART EVO series covers a kV range from 20 kV to 300 kV with 750 W or 900 W high X-ray power, highly suitable for most applications. The metal ceramic X-ray insert ensures extended lifetime and the X-ray tube heads are available in both air- and water-cooled variants, supporting nearly any user pattern within a broad temperature range. The IP65 classification of the X-ray tube head protects it against dust and water and makes it a reliable choice even in tough environments.

## FLEXIBLE SYSTEM INTEGRATION

A standard CONTROL EVO or a solution based on raw modules? The most suitable solution for controlling the X-ray tube head will be defined together with the customer. The EVO protocol interface ensures efficient remote control, monitoring of operational parameters and access to diagnostic information - and it allows the customer to integrate X-ray operation into his user interface. The compact size and low weight of the entire X-ray system also supports integration into confined spaces.



# THE SMART EVO SERIES

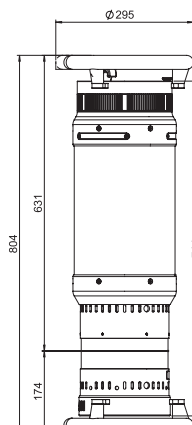
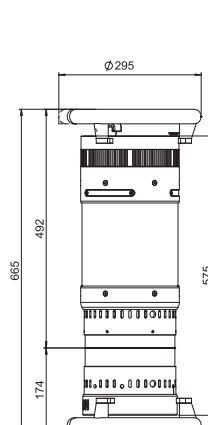
## PORTABLE X-RAY GENERATORS

YXLON Copenhagen systems are light, of high quality and have been designed for flexible field inspection, in all types of industrial environments. The combination of our new SMART EVO tube heads and CONTROL EVO is the key to a significantly improved workflow.



## SPECIFICATIONS

	SMART EVO 200P	SMART EVO 300P
WEIGHT	28 kg	36 kg
HEIGHT	665 mm	804 mm
FOCAL SPOT SIZE EN 12543	0.4 x 4.0 mm	0.5 x 5.5 mm
HIGH VOLTAGE ADJUSTMENT	30 – 200 kV	50 – 300 kV
mA ADJUSTMENT	0.5 – 6.0 mA	0.5 – 4.5 mA
MAX X-RAY POWER	750 W	750 W
BEAM ANGLE	38° x 360°	38° x 360°
LEAKAGE RADIATION	Max. 2.0 mSv/h	Max. 5.0 mSv/h
ENVIRONMENT	IP65	IP65
TEMPERATURE RANGE	-20°C to +50°C	-20°C to +50°C
CONT. EXPOSURE 35°C, MAX kV, MAX mA	Min. 1 hour	Min. 1 hour





SMART EVO  
160D

SMART EVO  
200D

SMART EVO  
225D/DS

SMART EVO  
300D/DS

22 kg

23 kg

26 kg

29 kg

611 mm

635 mm

708 mm

774 mm

1.0 mm

1.0 mm

3.0 / 1.0 mm

3.0 / 1.0 mm

20 – 160 kV

30 – 200 kV

40 – 225 kV

50 – 300 kV

0.5 – 7.0 mA

0.5 – 6.0 mA

0.5 – 5.5 mA

0.5 – 4.5 mA

750 W

750 W

900 W

900 W

40° x 60°

40° x 60°

40° x 60° / 30° x 60°

40° x 60° / 30° x 60°

Max. 2.0 mSv/h

Max. 2.0 mSv/h

Max. 5.0 mSv/h

Max. 5.0 mSv/h

IP65

IP65

IP65

IP65

-20°C to +50°C

-20°C to +50°C

-20°C to +50°C

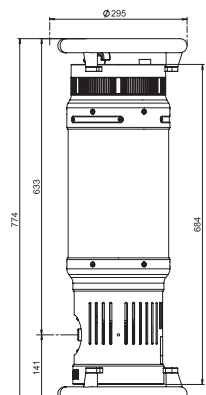
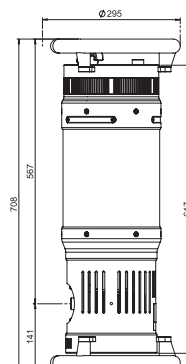
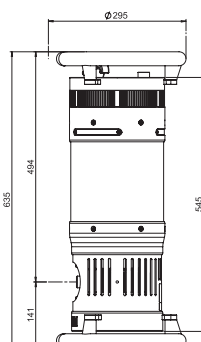
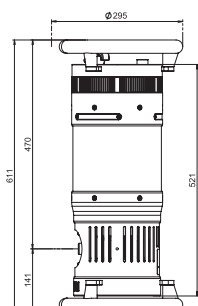
-20°C to +50°C

Min. 1 hour

Min. 1 hour

Min. 1 hour

Min. 1 hour





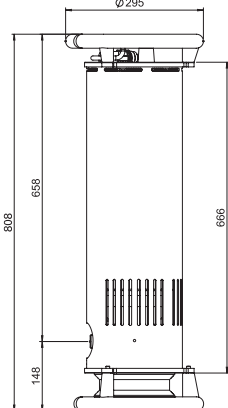
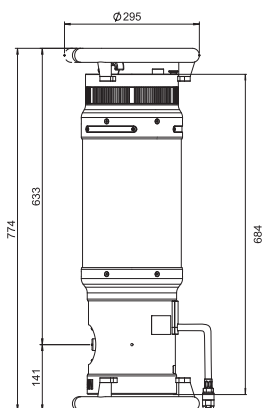
**SMART EVO  
300DW**

**XPO EVO  
225D**

31 kg	28 kg
774 mm	808 mm
3.0 mm	3.0 mm
50 – 300 kV	25 – 225 kV
0.5 – 4.5 mA	0.5 – 10 mA
900 W	1200 W
40° x 60°	40° x 60°
Max. 5.0 mSv/h	Max. 5.0 mSv/h
IP65	IP65
-20°C to +50°C	-20°C to +50°C
Continuous *	1 hour **

\* 30°C

\*\* 30°C, 225 kV / 4.4 mA



## SMART EVO CRAWLER PACKAGE

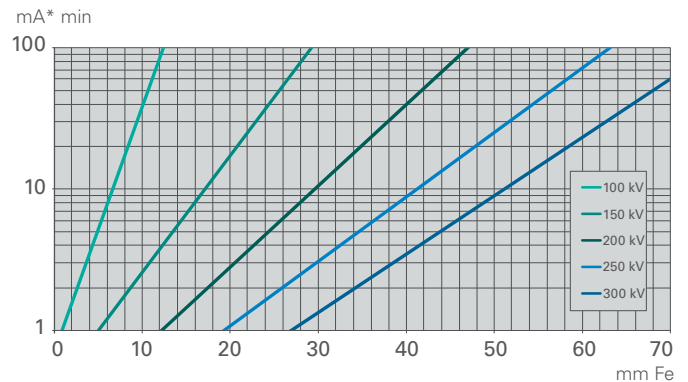
The SMART EVO 200P & 300P tube heads are designed for inline inspections of pipes and vessels. YXLON offers a crawler package for system integration with pipeline crawlers. The package includes a DC/DC converter, controller board, support and documentation, ensuring complete integration.

## SMART EVO WATER-COOLED

Special inspection jobs, like in confined spaces or with 24/7 operation in extreme temperatures, may require special solutions. All SMART EVO directional tube heads and the CONTROL EVO are available in reliable water-cooled versions to cover nearly any possible application.

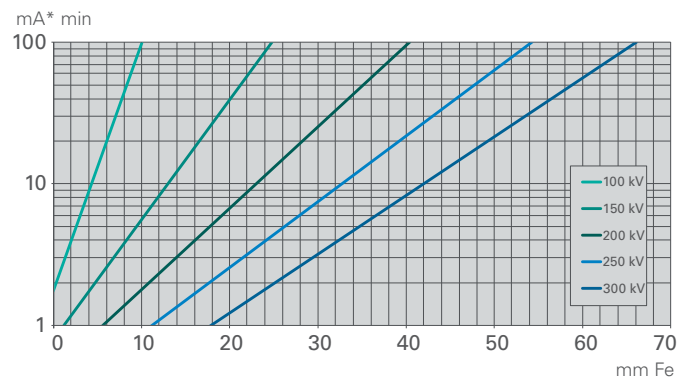
## DIRECTIONAL Fe EXPOSURE DIAGRAM

700 mm FFD / D7-type + Pb / D = 2,0



## PANORAMIC Fe EXPOSURE DIAGRAM

700 mm FFD / D7-type + Pb / D = 2,0





# CONTROL EVO



## COMPATIBLE

The CONTROL EVO is backward compatible with the Y.SMART and Y.XPO portable X-ray systems. It has an Ethernet interface allowing for remote diagnostics and software updates. The USB interface facilitates control of the system via a USB-to-Serial converter, saving diagnostics reports and can also be used for software updates in the field. It even has Bluetooth™ for future applications. All of these make the EVO system smart and future-proof.

## CONTROL EVO

WEIGHT	13 kg
DISPLAY	6.5" LCD Color
MAX X-RAY POWER	1200 W*
HIGH VOLTAGE ADJUSTMENT / 1 kV RES.	10 – 300 kV*
mA ADJUSTMENT / 0.1 mA RES.	0.5 – 10 mA*
EXPOSURE TIME	1 sec. - 60 min. or ∞*
INTERFACES	Ethernet, Bluetooth and USB
NUMBER OF EXPOSURE PROFILES	100
EXPOSURE HISTORY	Last 100 exposures
ENVIRONMENT	IP66
TEMPERATURE RANGE	-20°C to +50°C

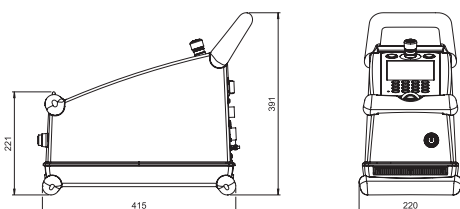
\* DEPENDS ON TUBE HEAD TYPE

## EXPOSURE CALCULATOR

The advanced built-in exposure calculator ensures fast exposure calculations and uniform results. It can calculate the minimum required film focus distance optimising the exposure time. It accommodates the use of a wide range of films, materials and settings.

## POWER SUPPLY

The AC-mains voltage range spans from 85 to 264 VAC and from 45 to 65 Hz, supporting global operation. The power factor correction module ensures stable operation, where AC-mains are unstable.



# SMART SERVICE

You need equipment you can rely on, day in day out. Built in Denmark to stringent specifications with the highest quality components, our products are both built to last and operate accurately even under the harshest situations.

These initiatives have been tailored to increase operational excellence and support your production flow in the best possible way, maximizing production uptime.

## REBUILD PACKAGE



The rebuild package will extend the overall lifetime of your portable X-ray system and thereby maximize the system's uptime, thus eliminating potential and costly production stoppages.

## SERVICE CHECK



The service check ensures that your portable and mobile X-ray system is in optimal condition. Your system will undergo a systematic evaluation of its performance level and overall condition, and will be serviced with a preventative exchange of basic wearing parts.

## CALIBRATION PACKAGE



By calibrating your portable and mobile X-ray system regularly, you will fulfill both internal and external requirements for quality assurance as well as to ensure that your X-ray system performs in accordance with the system's specifications.

# SMART SOLUTIONS

It's a competitive market and even the smallest advantages can prove to be the tipping point in hard fought tenders. As the leading global provider of X-ray inspection equipment for industrial applications, we have the right solution to match nearly every application.

To further strengthen your position, we have designed three initiatives that we trust will support your business and provide you with better customer service.

## RENTAL PROGRAM



Alleviate cash flow issues with our rental program. Customers have the opportunity to rent portable X-ray systems, with a signed rental agreement, including a specified time frame, terms, and price.

## EXCHANGE PROGRAM



Customers with functional Y.SMART or Y.XPO equipment, have the opportunity to return the equipment as a part of an exchange program, where a specified amount will be deducted from the customer's new equipment purchased in exchange for the trade-in.

## EXTENDED WARRANTY



An extended 12-month or 24-month full product warranty is available at the time of purchase for portable and mobile X-ray systems of all variants. This option will add to the overall level of customer comfort by eliminating unexpected extra costs in case of product downtime.

# SMART ACCESSORIES

In our world, time is everything. The smarter we help you and your people work, the faster and better you'll get the job done. Working smart means accuracy, safety and reliability, and most important, it means avoiding costly disruptions to your workflow.

A broad range of high-quality accessories is available for the SMART EVO and XPO EVO series. These various accessories enable a smarter workflow and support multiple applications in all environments.

Our range of accessories makes the use of portable X-ray equipment safer, more efficient and convenient when challenging working conditions has to be solved.

The accessories are not only designed to be used in rough conditions but also to be agile and user-friendly for customers when using portable X-ray systems.

1. 4-Legged Tube Stand\*
2. 3-Legged Tube Stand\*
3. Light-Weight Tube Stand
4. Mobile Tube Stand\*
5. Flight Case EVO Tube Heads\*
6. Flight Case CONTROL EVO
7. Lead Cone Package\*
8. External Lamp, Ultra-Bright
9. Lamp Tower with Siren
10. Warning Lamps
11. Water Cooler
12. Revolving Hand Ring (only for XPO EVO)
13. Double Door Contact
14. Door and Lamp Cables

\* Only for directionals X-ray systems



# THE Y.XMB SERIES

## SMARTER WORKFLOW

The mobile Y.XMB X-ray system from YXLON Copenhagen is easy to handle and perfectly designed for dealing with challenging inspection jobs at power plants, on aircraft structures and in the petrochemical industry. Our mobile X-ray solution supports high voltage cables with lengths up to 20 meters, and combined with a compact metal ceramic X-ray tube mounted on the flexible high voltage cable, it performs excellently in challenging environments in narrow and hard-to-reach areas.



## SPECIFICATIONS

	Y.XMB 100	Y.XMB 160	Y.XMB 225
WEIGHT	approx. 180 kg	approx. 184 kg	approx. 190 kg
HEIGHT x DEPTH	1630 x 980 mm	1630 x 980 mm	1630 x 980 mm
WIDTH OF AXIS	600 mm	600 mm	600 mm
HIGH VOLTAGE ADJUSTMENT	7.5 – 100 kV	7.5 – 160 kV	10 – 225 kV
mA ADJUSTMENT	0 – 20 mA	0 – 20 mA	0 – 15 mA
MAX X-RAY POWER	1500 W	2250 W	2250 W
CABLE LENGTH	10, 15 or 20 m	10, 15 or 20 m	10, 15 or 20 m

## VERSATILE

The constant potential Y.XMB X-ray system supports a wide range of high quality X-ray tubes, both directional and panoramic variants, with different sizes of focal spots. The modular design of the mobile system means it can be easily adapted to deal with diverse inspection jobs in confined spaces, just by changing the X-ray tube. The Y.XMB is fully compatible with both film and digital imaging and can be used for a large range of difficult tasks without compromising your workflow.

## HIGH PERFORMANCE

The Y.XMB is available in 100, 160 and 225 kV variants, and is operative from 7.5 kV up to a maximum of 225 kV, with an extremely high X-ray power of up to 2.25 kW. The system features a broad mA range from 0–20 mA depending on the chosen system and X-ray tube. The versatile Y.XMB high-performance system will give you the competitive edge by reducing exposure time and creating a smarter workflow.

A man wearing a blue hard hat with several logos and a name tag that reads "PER K ANDERSEN". He is also wearing a high-visibility yellow safety vest over a dark blue long-sleeved shirt. He is holding a large, circular, metallic industrial component, likely a gas compressor station part, in front of him. The background shows an industrial site with various structures and equipment.

# BUILT TO LAST

## GAS COMPRESSOR STATION NEAR EGTVED, DENMARK.

Per Kopperup Andersen has been an NDT Inspector with FORCE Technology for the past four years, working with YXLON Copenhagen's portable products. FORCE Technology is the largest inspection company in Scandinavia. They were founded more than 70 years ago - and operate worldwide from America to Asia.

FORCE Technology has inspected weld seams on pipelines, for ELnet Danmark, during the construction of the new gas compressor station near Egtved in Denmark. Per Kopperup and his colleague Lars are conducting the inspections. Once up and running, the gas compressor station will increase the capacity of the gas transmission network in Denmark.

For this inspection job, Per is using the SMART EVO 225D, which is made by YXLON Copenhagen. "Relying on your equipment is of paramount importance. The equipment has to withstand all the stress and rough handling that comes with field operation. When you bring a tube head on site to do an inspection job, it has to work".

**"The EVO 225D is  
reliable and robust"**

"The SMART EVO is like the Y.SMART - it just works. The EVO 225D is reliable and robust. Over the past four years I have not experienced one single breakdown, and even though I have dropped them a couple of times they continue to function just fine".

The EVO series is robust and built to endure rough handling, and it is also light-weight for easy positioning.

# QUALITY

You need equipment you can rely on, day in day out. Built in Denmark to stringent specifications with the highest quality components, our products are both built to last and operate accurately even under the harshest situations. For us, the highest priority is placed on quality: the quality of our X-ray equipment and, as a result, the quality of your products.

# TRUST

You work in unpredictable challenging environments and sometimes things don't go as planned. That's when it's good to know that we've got your back. With our comprehensive support and local service and repair network, you can trust us to keep downtime to a minimum.

# EXPERIENCE

With YXLON, you're in good company. As the leading global provider of X-ray inspection equipment for industrial applications, we have the right solution to match nearly every application. Our years of experience have enabled us to gain the confidence and trust of some of the world's top companies in a wide range of demanding business areas. We'd like to think that your company is next.

**YXLON**

Technology with Passion

YXLON International A/S

a company of the COMET Group

Helgeshøj Alle 38, 2630 Taastrup, Denmark

T +45 72 40 77 00, VAT DK 18 21 52 33

[yxlon@cph.yxlon.com](mailto:yxlon@cph.yxlon.com), [www.yxlon-portables.com](http://www.yxlon-portables.com)