



Industrial X-Ray

Unipolar Metal Ceramic Tubes Overview

Unipolar Metal Ceramic Tubes

Overview and Configuration Information

About Unipolar Metal Ceramic X-Ray Tubes

The COMET Unipolar Metal Ceramic tubes are designed for use in demanding industrial applications like Non-Destructive Testing, Food Inspection and Thickness Gauging. The tube assembly consists of an Unipolar X-Ray tube with cooled anode at ground potential and a high voltage receptacle socket. The X-Ray proof tube housing has fittings for water hose connections. The main advantages are high power, small dimensions, low weight and rugged mechanical design.

“One Stop Shop” for Industrial X-Ray Sources: COMET’s XRS Subsystems

COMET is pleased to offer all of the necessary components for a customized X-Ray Source: The new XRS Subsystems each contain a COMET X-Ray tube, high voltage generator with cables and coolers designed for easy integration that will optimize system performance. All XRS subsystems are factory prepared and tested for hassle free installation and operation.

This novel solution demonstrates COMET’s continuous commitment and investment in delivering real added value to our worldwide customer base.

About the Business Unit Industrial X-Ray

COMET Industrial X-Ray is an experienced supplier of components and modules for industrial X-Ray applications and is proud of its reputation as the preferred engineering partner in terms of innovation potential, know how, flexibility and speed. Our product range features X-Ray tubes and sources with small focal spot resolution ($< 1 \mu\text{m}$) up to 6 kW in output for more power demanding requirements. From the smallest footprint for use in portable units to 450 kV fixed gantry systems that are suitable for cargo screening.

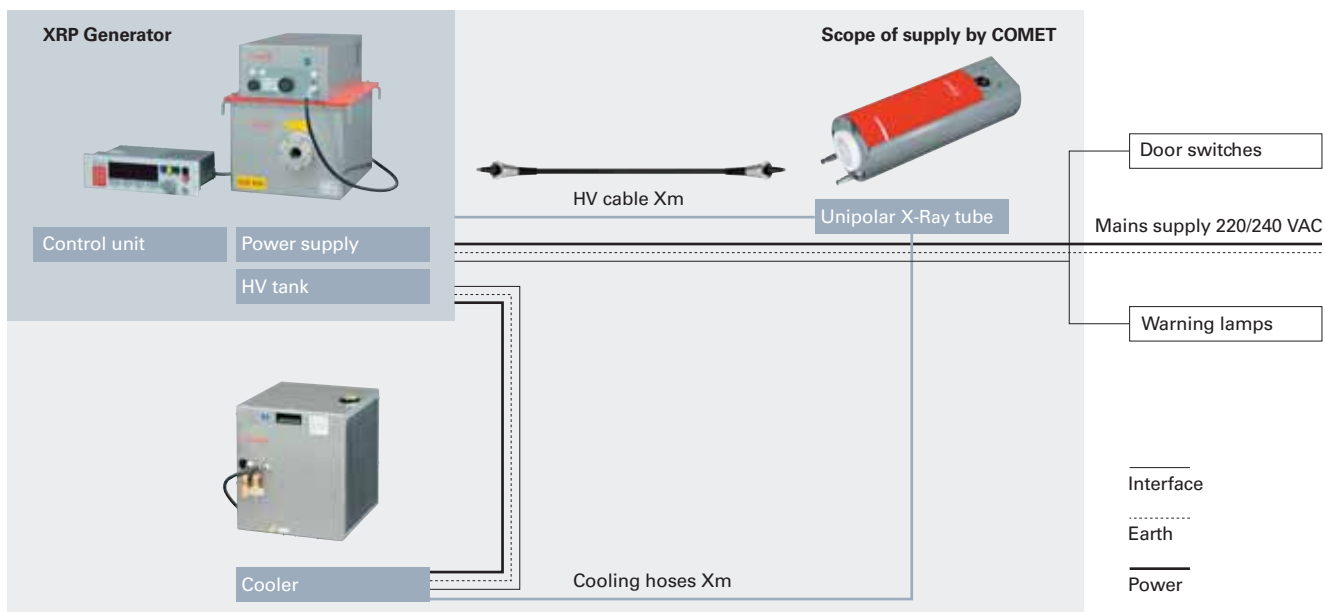
Unipolar Metal Ceramic Tubes – Configuration Information

Overview of tubes and fitting system components; high voltage generator, high voltage cable and cooler.

XRS Module	Generator							Tube
	Type	Ordering No.	Voltage range (kV)	Current range (mA)	Max. power (W)	Output connector	Ordering No. flange	Tube type example
XRS-100	XRP-100/2250/2	10008861	5–100	0–22.5	2250	R24	651136	MXR-101
	XRP-100/2250/2	10008861	5–100	0–22.5	2250	R24	651136	MXR-160HP/11
	XRP-100/2250/2	10008861	5–100	0–22.5	2250	R24	651136	MXR-160/20
	XRP-100/4500/2	10008862	5–100	0–45	4500	R24	651136	MXR-160/22
XRS-160	XRP-160/2250/2	10008863	7.5–160	0–22.5	2250	R24	651136	MXR-160/20
	XRP-160/2250/2	10008863	7.5–160	0–22.5	2250	R24	651136	MXR-160HP/11
	XRP-160/2250/2	10008863	7.5–160	0–22.5	2250	R24	651136	MXRP-160C
	XRP-160/4500/2	10006465	7.5–160	0–45	4500	R24	651136	MXR-160/22
XRS-225	XRP-225/2250/2	10008864	10–225	0–15	2250	R28	10001710	MXR-225HP/11
	XRP-225/2250/2	10008864	10–225	0–15	2250	R28	10001710	MXR-225/21
	XRP-225/4500/2	10006466	10–225	0–30	4500	R28	10001710	MXR-225/21
	XRP-225/4500/2	10006466	10–225	0–30	4500	R28	10001710	MXR-225/22

Unipolar X-Ray Source

Diagram of a Unipolar X-Ray Source XRS and its environment.



Ordering No.	Focal spots (EN 12543)	Terminal type	Ordering No. flange
915343.51	5.5	R10	651142
915370.51	0.4/1.0	R24	10001756
915317.51	1.0/1.0	R24	10001756
915301.51	1.0/5.5	R24	10001756
915317.51	1.0/1.0	R24	10001756
915370.51	0.4/1.0	R24	10001756
915311.51	0.4x4.0 (lxw)	R24	10001756
915301.51	1.0/5.5	R24	10001756
915371.51	0.4/1.0	R24	10001756
915325.51	0.4/1.1	R24	10001756
915325.51	1.0/3.0	R24	10001756
915326.51	1.0/5.5	R24	10001756

Cable		Cooler	
Type	Ordering No.	Type	Ordering No.
U3/100-R24-R10-Xm		XRC-3001-WA	10008640
N3/160-R24-R24-Xm		XRC-3001-WA	10008640
N3/160-R24-R24-Xm		XRC-3001-WA	10008640
N3/160-R24-R24-Xm		XRC-3001-WW	10008641
N3/160-R24-R24-Xm		XRC-3001-WA	10008640
N3/160-R24-R24-Xm		XRC-3001-WA	10008640
N3/160-R24-R24-Xm		XRC-3001-WA	10008640
N3/160-R24-R24-Xm		XRC-3001-WW	10008641
P3/250-R28-R24-Xm		XRC-3001-WA	10008640
P3/250-R28-R24-Xm		XRC-3001-WA	10008640
P3/250-R28-R24-Xm		XRC-3001-WA	10008640
P3/250-R28-R24-Xm		XRC-3001-WW	10008641

Unipolar Metal Ceramic Tubes

Technical Data



MXR-101

915343.51

Ordering No.	915343.51
Nominal tube voltage	100 kV
Continuous rating	1000 W
Focal spot acc. EN 12543	d = 5.5 mm
Filament current, max.	4.2 A
Filament voltage, typical	7.5 V
Inherent filtration	0.8 mm Be
Target material	W
Target angle	30°
Radiation coverage	40°
Leakage radiation, max.	–
Cooling medium	Water
Cooling medium flow, min.	4 l/min
Temperature at inlet, max.	40° C
Weight	3.5 kg
Terminal type	R10

MXR-160HP/FB

915359.51

Nominal tube voltage	160 kV
Continuous rating	1000 W
Focal spot	d = 1.0 mm
Filament current, max.	4.1 A
Filament voltage, typical	3.0 V
Inherent filtration	0.8 mm Be
Target material	W
Target angle	20°
Radiation coverage	60° x 25°
Leakage radiation, max.	2.5 mSv/h
Cooling medium	Water
Cooling medium flow, min.	4 l/min
Temperature at inlet, max.	35° C
Weight	8 kg
Terminal type	R24

MXR-160HP/11

915370.51

Nominal tube voltage	160 kV
Continuous rating	800 W / 1800 W
Focal spot	d = 0.4 mm* / d = 1.0 mm
Filament current, max.	4.1 A / 4.1 A
Filament voltage, typical	2.9 V / 7.3 V
Inherent filtration	0.8 mm Be
Target material	W
Target angle	11°
Radiation coverage	40° x 30°
Leakage radiation, max.	2.5 mSv/h
Cooling medium	Water
Cooling medium flow, min.	4 l/min
Temperature at inlet, max.	35° C
Weight	8 kg
Terminal type	R24

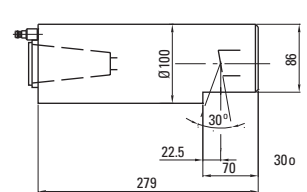
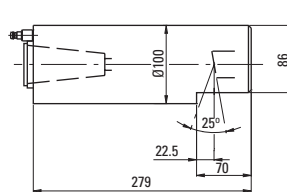
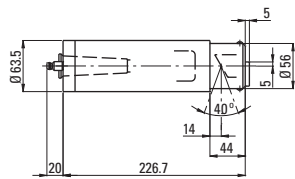
Mounting flange
Locking device

651142
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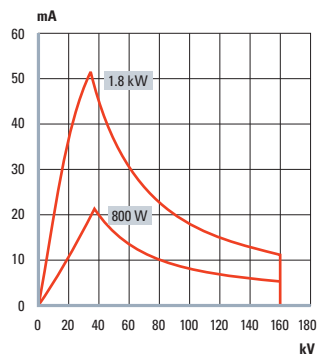
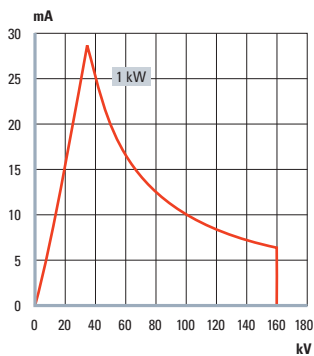
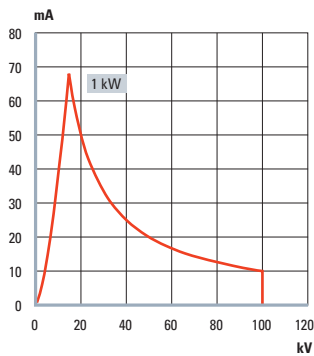
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* Threshold: 30%

Outline drawing



Tube diagram

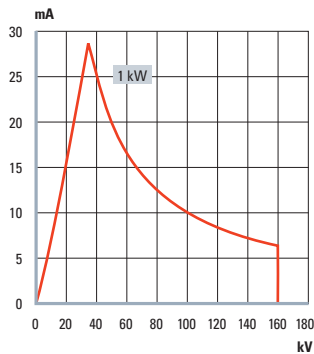
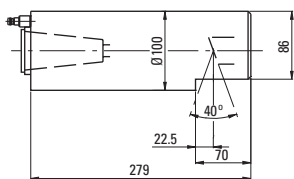




MXR-160HP/20

91535751
160 kV
1000 W / 1000 W
d = 1.0 mm / d = 1.0 mm
4.1 A / 4.1 A
4.2 V / 4.2 V
0.8 mm Be
W
20°
40°
2.5 mSv/h
Water
4 l/min
35° C
8 kg
R24

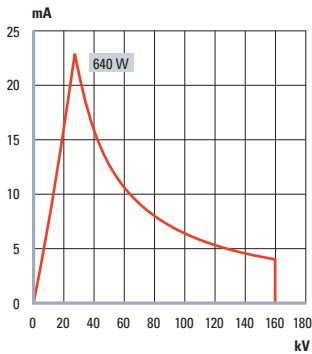
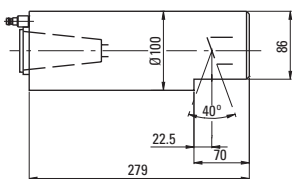
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MXR-160/20

91531751
160 kV
640 W / 640 W
d = 1.0 mm / d = 1.0 mm
4.1 A / 4.1 A
4.2 V / 4.2 V
0.8 mm Be
W
20°
40°
2.5 mSv/h
Water
4 l/min
35° C
8 kg
R24

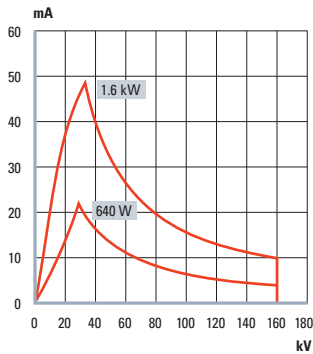
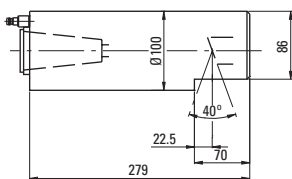
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MXR-160/21

915302.51
160 kV
640 W / 1600 W
d = 1.0 mm / d = 3.0 mm
4.1 A / 4.2 A
4.2 V / 5.5 V
0.8 mm Be
W
20°
40°
2.5 mSv/h
Water
4 l/min
35° C
8 kg
R24

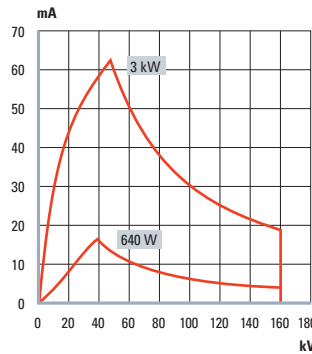
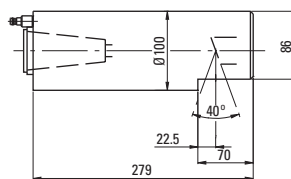
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MXR-160/22

915301.51
160 kV
640 W / 3000 W
d = 1.0 mm / d = 5.5 mm
4.1 A / 4.2 A
3.0 V / 5.5 V
0.8 mm Be
W
20°
40°
2.5 mSv/h
Water
4 l/min
35° C
8 kg
R24

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Ordering No.
Nominal tube voltage
Continuous rating
Focal spot acc. EN 12543
Filament current, max.
Filament voltage, typical
Inherent filtration
Target material
Target angle
Radiation coverage
Leakage radiation, max.
Cooling medium
Cooling medium flow, min.
Temperature at inlet, max.
Weight
Terminal type

MXR-161
915305.51
160 kV
3000 W
d = 7.5 mm
4.2 A
5.5 V
0.8 mm Be
W
30°
40°
1 mSv/h
Water
4 l/min
35° C
8 kg
R24

MXRP-160C
915311.51
160 kV
1000 W
l = 0.4 mm / w = 4.0 mm
4.2 A
2.7 V
0.5 mm Ti + 2.0 mm H ₂ O + 2.0 mm Al
W
22°
360° x 40°
2.5 mSv/h
Water
4 l/min
35° C
8 kg
R24

MXR-165
915356.51
160 kV
6000 W
d = 5.5 mm
4.2 A
5.5 V
4 mm Be
W
30°
45°
2.5 mSv/h
Water
5 l/min
30° C
9.4 kg
R24

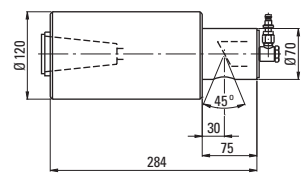
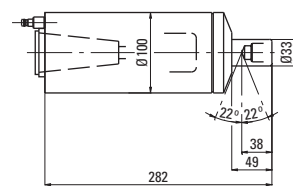
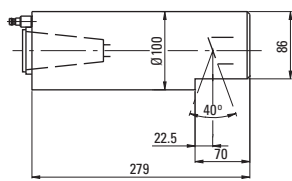
Mounting flange
Locking device

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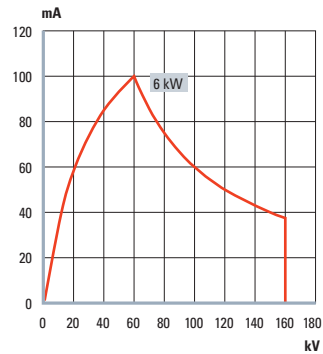
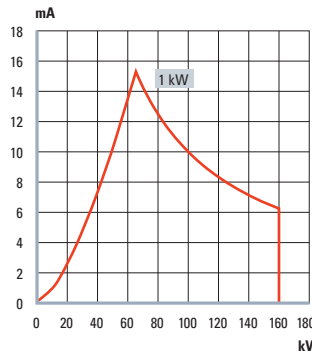
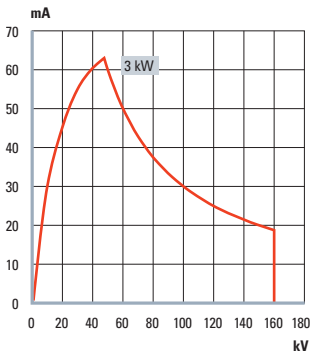
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Outline drawing



Tube diagram



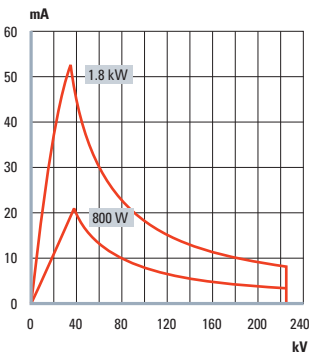
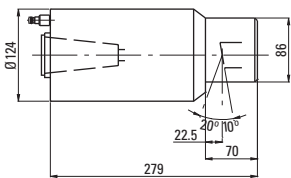


MXR-225HP/11

915371.51
225 kV
800 W / 1800 W
d = 0.4 mm* / d = 1.0 mm
4.1 A / 4.1 A
2.9 V / 7.3 V
0.8 mm Be
W
11°
40° x 30°
5 mSv/h
Water
4 l/min
35° C
11 kg
R24

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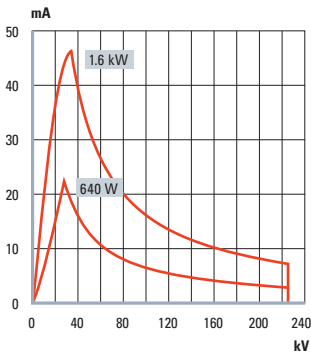
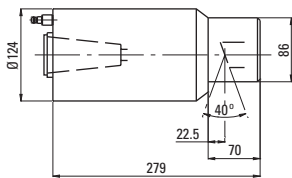
* Threshold: 30%



MXR-225/21

915325.51
225 kV
640 W / 1600 W
d = 1.0 mm / d = 3.0 mm
4.1 A / 4.2 A
4.2 V / 5.5 V
0.8 mm Be
W
20°
40°
10 mSv/h
Water
4 l/min
35° C
11 kg
R24

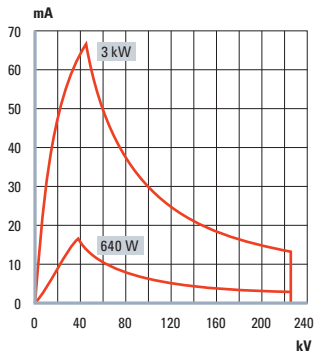
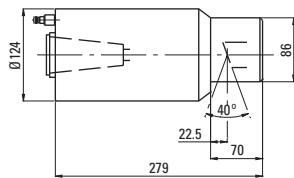
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MXR-225/22

915326.51
225 kV
640 W / 3000 W
d = 1.0 mm / d = 5.5 mm
4.1 A / 4.2 A
3.0 V / 5.5 V
0.8 mm Be
W
20°
40°
10 mSv/h
Water
4 l/min
35° C
11 kg
R24

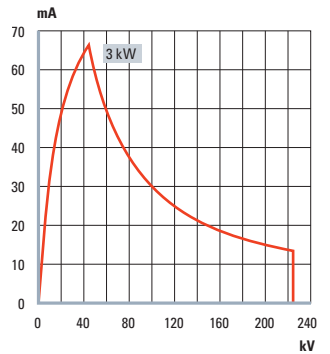
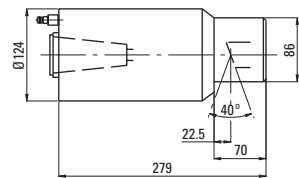
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MXR-226

915332.51
225 kV
3000 W
d = 7.5 mm
4.2 A
5.5 V
0.8 mm Be
W
30°
40°
10 mSv/h
Water
4 l/min
35° C
11 kg
R24

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COMET is a successful international technology company in the growth markets of security, inspection, electronics and communication. As an expert in the field of applied physics, COMET provides a complete and highly flexible portfolio of components, modules, systems and services from a single source.

COMET Industrial X-Ray is an experienced supplier of components and modules for industrial X-Ray applications and is proud of its reputation as the preferred engineering partner in terms of innovation potential, know how, flexibility and speed.

COMET – The X-perts for security, inspection, electronics and communication



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