

Unipolar Metal Ceramic Tubes

Industrial X-Ray

Overview







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 Modules

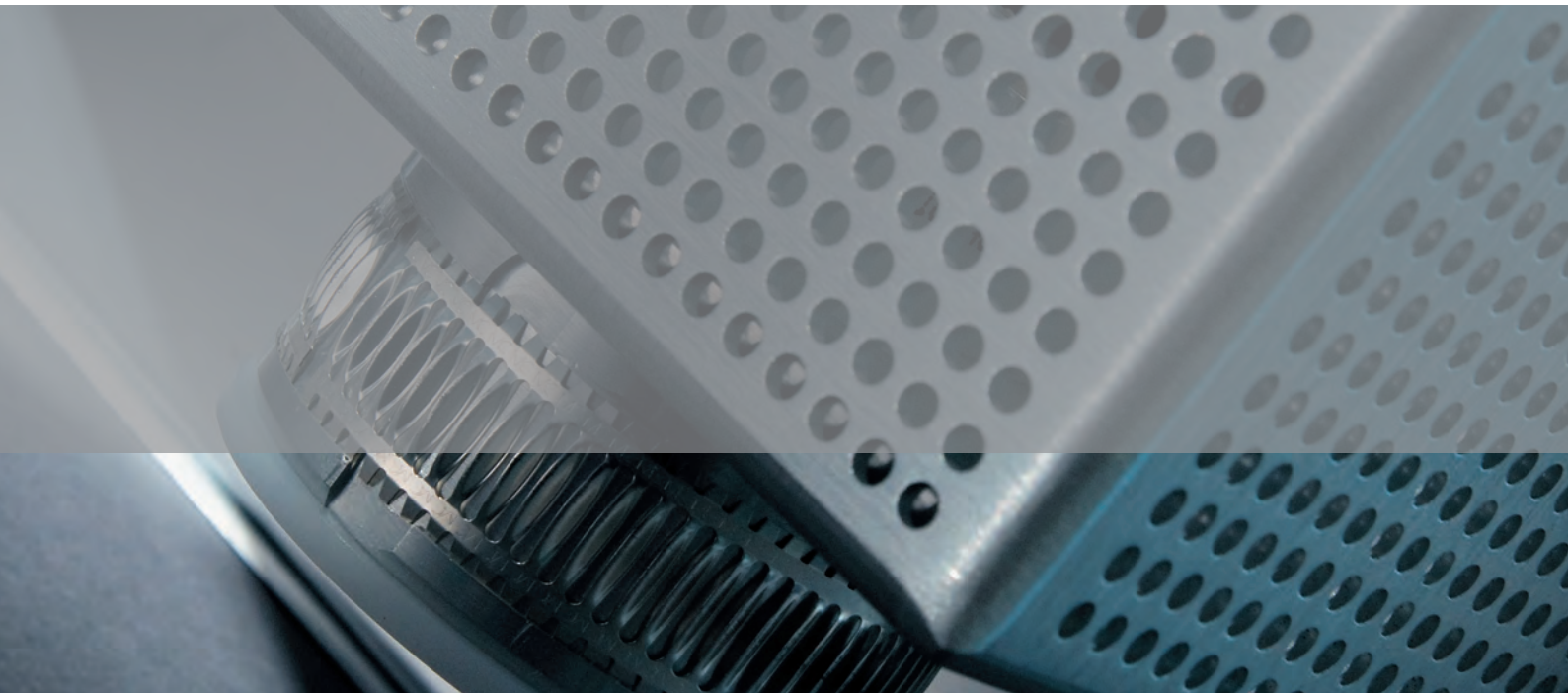
COMET is pleased to offer all of the necessary components for a customized X-Ray Source: The new XRS Modules each contain a COMET X-Ray tube, high voltage generator with cables and coolers designed for easy integration

that will optimize system performance. All XRS Modules 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 600 kV fixed gantry systems that are suitable for cargo screening we offer a solution.

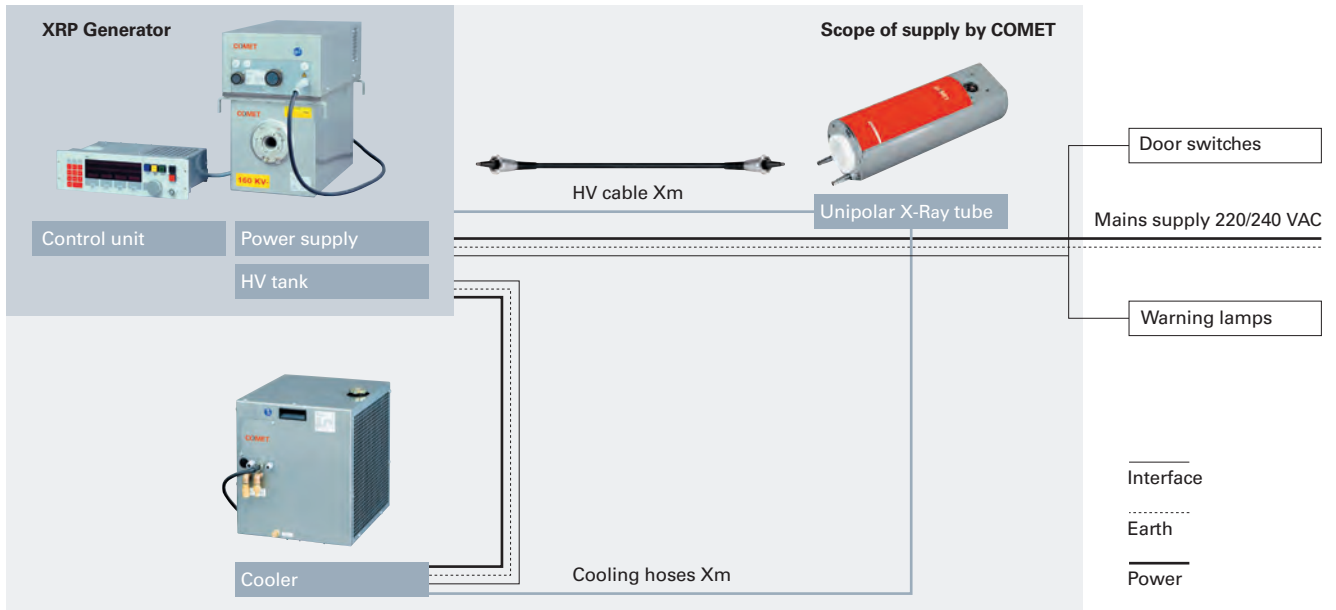


Unipolar Metal Ceramic Tubes – Configuration Information

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

GENERATOR						
XRS Module	Type	Voltage range (kV)	Current range (mA)	Max. power (W)	Output connector	Ordering No. flange
XRS-75	XRP-75/1000/1	5–75	0–17.5	1000	CA11	–
	XRP-75/1000/1	5–75	0–17.5	1000	CA11	–
	XRP-75/1000/1	5–75	0–17.5	1000	CA11	–
XRS-160	XRP-160/2250/2	7.5 – 160	0 – 22.5	2250	R24	4512-104-87101
	XRP-160/2250/2	7.5 – 160	0 – 22.5	2250	R24	4512-104-87101
	XRP-160/2250/2	7.5 – 160	0 – 22.5	2250	R24	4512-104-87101
	XRP-160/4500/2	7.5 – 160	0 – 45	4500	R24	4512-104-87101
XRS-225	XRP-225/2250/2	10 – 225	0 – 15	2250	R28	4512-104-87111
	XRP-225/2250/2	10 – 225	0 – 15	2250	R28	4512-104-87111
	XRP-225/4500/2	10 – 225	0 – 30	4500	R28	4512-104-87111
	XRP-225/4500/2	10 – 225	0 – 30	4500	R28	4512-104-87111

Unipolar Metal Ceramic Tubes – Configuration Information



TUBE					CABLE		COOLER	
Tube type example	Ordering No.	Focal spots (EN 12543)	Terminal type	Ordering No. flange	Type	Ordering No.	Type	Ordering No.
MXR-75/30	915376.51	5.5	CA11	–	L3/75-CA11-CA11-Xm	20033773	XRC-1001-WA	20033773
MXR-75/HP20	915377.51	1.0	CA11	–	L3/75-CA11-CA11-Xm	20033773	XRC-1001-WA	20033773
MXR-75HP/20 FB	915380.51	1.0	CA11	–	L3/75-CA11-CA11-Xm	20033773	XRC-1001-WA	20033773
MXR-160/20	915317.51	1.0 / 1.0	R24	4512-104-87121	N3/160-R24SL-R24SL-Xm	10008640	XRC-3001-WA	10008640
MXR-160HP/11	915370.51	0.4 / 1.0	R24	4512-104-87121	N3/160-R24SL-R24SL-Xm	10008640	XRC-3001-WA	10008640
MXRP-160C	915311.51	0.4 x 4.0 (l x w)	R24	4512-104-87121	N3/160-R24SL-R24SL-Xm	10008640	XRC-3001-WA	10008640
MXR-160/22	915301.51	1.0 / 5.5	R24	4512-104-87121	N3/160-R24SL-R24SL-Xm	10008641	XRC-3001-WW	10008641
MXR-225HP/11	915371.51	0.4 / 1.0	R24	4512-104-87131	P3/250-R24SL-R28SL-Xm	10008640	XRC-3001-WA	10008640
MXR-225/21	915325.51	0.4 / 1.1	R24	4512-104-87131	P3/250-R24SL-R28SL-Xm	10008640	XRC-3001-WA	10008640
MXR-225/21	915325.51	1.0 / 3.0	R24	4512-104-87131	P3/250-R24SL-R28SL-Xm	10008640	XRC-3001-WA	10008640
MXR-225/22	915326.51	1.0 / 5.5	R24	4512-104-87131	P3/250-R24SL-R28SL-Xm	10008641	XRC-3001-WW	10008641



MXR-75/30

MXR-75HP/20

MXR-75HP/20 FB

Ordering No.	915376.51
Nominal tube voltage	75 kV
Continuous rating	1000 W
Focal spot acc. EN 12543	d = 5.5 mm
Filament current, max.*	3.6 A
Filament voltage, typical	5.3 V
Inherent filtration	0.8mm Be
Target material	W
Target angle	30°
Radiation coverage	40° x 40°
Leakage radiation, max.	1.5 mSv/h
Cooling medium	Water
Cooling medium flow, min.	4 l/min
Temperature at inlet, max.	40°
Weight	2.1 kg
Terminal type	CA11

Ordering No.	915377.51
Nominal tube voltage	75 kV
Continuous rating	1000 W
Focal spot acc. EN 12543	d = 1 mm
Filament current, max.*	3.7 A
Filament voltage, typical	2.8 V
Inherent filtration	0.8 mm Be
Target material	W
Target angle	20°
Radiation coverage	40° x 40°
Leakage radiation, max.	1.5 mSv/h
Cooling medium	Water
Cooling medium flow, min.	4 l/min
Temperature at inlet, max.	40°
Weight	2.1 kg
Terminal type	CA11

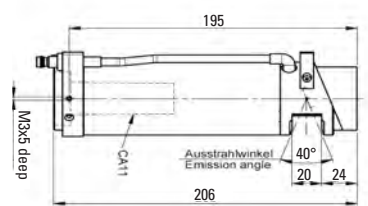
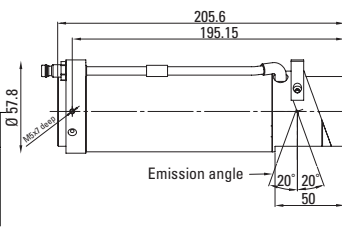
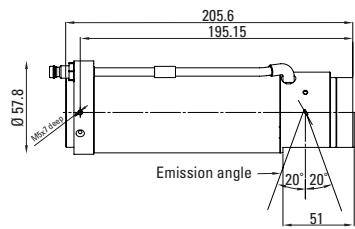
Ordering No.	915380.51
Nominal tube voltage	75 kV
Continuous rating	1000 W
Focal spot acc. EN 12543	d = 1 mm
Filament current, max.*	3.7 A
Filament voltage, typical	2.9 V
Inherent filtration	1.0 mm Be
Target material	W
Target angle	20°
Radiation coverage	40° x 100°
Leakage radiation, max.	1.5 mSv/h
Cooling medium	Water
Cooling medium flow, min.	4 l/min
Temperature at inlet, max.	40° C
Weight	2.1 kg
Terminal type	CA11

Mounting flange	-
Locking device	-

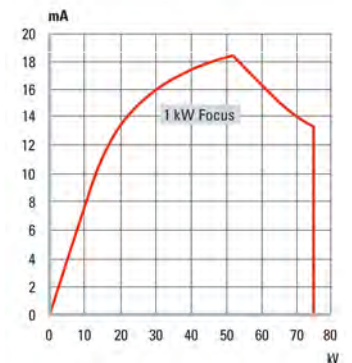
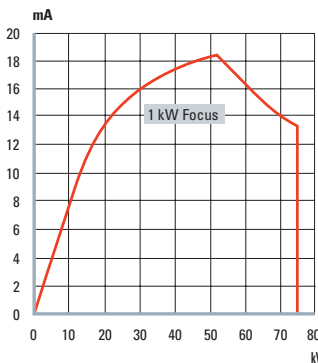
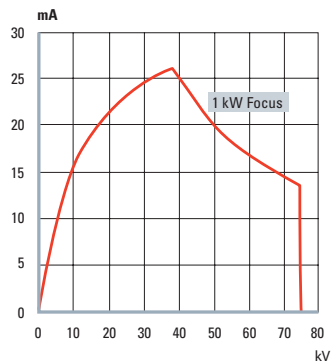
Mounting flange	-
Locking device	-

Mounting flange	-
Locking device	-

Outline drawing



Tube diagram



*Setting the maximum Filament current above 4.0A may reduce the lifetime of the Filament to less than 2000 hours.

**MXR-160HP/FB**

915359.51

160 kV

1000 W

d = 1.0 mm

4.1 A

3.0 V

0.8 mm Be

W

20°

60° x 25°

2.5 mSv/h

Water

4 l/min

35° C

8 kg

R24

4512-104-87121

941002

**MXR-160HP/11**

915370.51

160 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°

2.5 mSv/h

Water

4 l/min

35° C

8 kg

R24

4512-104-87121

941002

*Threshold: 30 %

**MXR-160HP/20**

915357.51

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

4512-104-87121

941002

**MXR-160/20**

915317.51

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

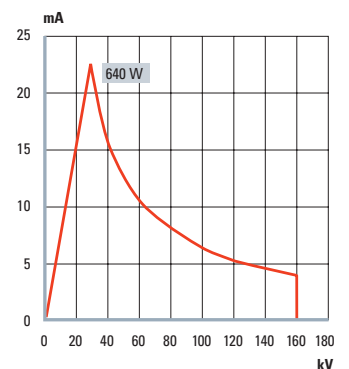
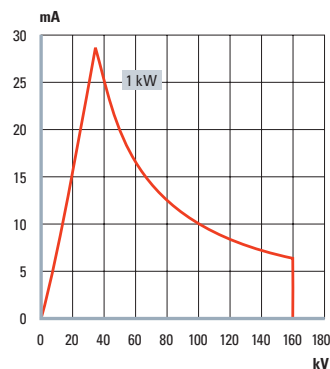
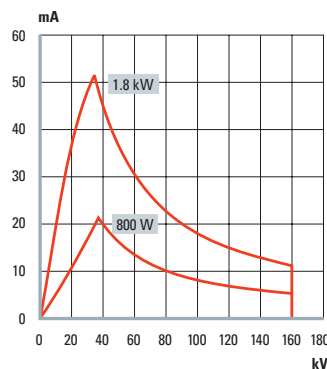
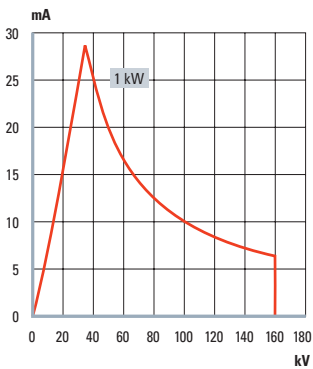
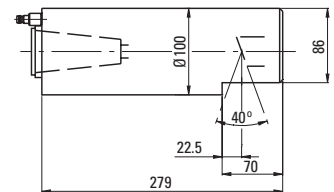
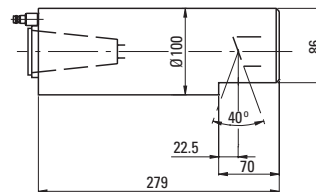
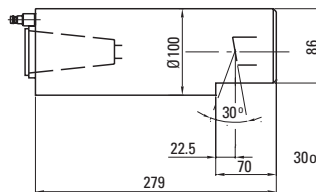
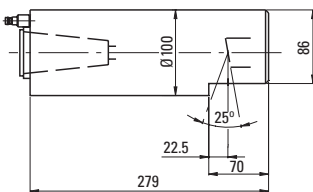
35° C

8 kg

R24

4512-104-87121

941002





MXR-160/21

MXR-160/22

MXR-161

Ordering No.	915302.51
Nominal tube voltage	160 kV
Continuous rating	640 W / 1600 W
Focal spot acc. EN 12543	d = 1.0 mm / d = 3.0 mm
Filament current, max.*	4.1 A / 4.2 A
Filament voltage, typical	4.2 V / 5.5 V
Inherent filtration	0.8 mm Be
Target material	W
Target angle	20°
Radiation coverage	40°
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

Ordering No.	915301.51
Nominal tube voltage	160 kV
Continuous rating	640 W / 3000 W
Focal spot acc. EN 12543	d = 1.0 mm / d = 5.5 mm
Filament current, max.*	4.1 A / 4.2 A
Filament voltage, typical	3.0 V / 5.5 V
Inherent filtration	0.8 mm Be
Target material	W
Target angle	20°
Radiation coverage	40°
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

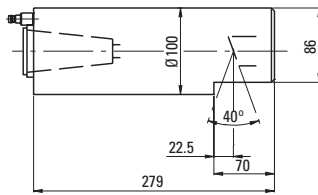
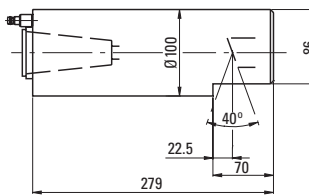
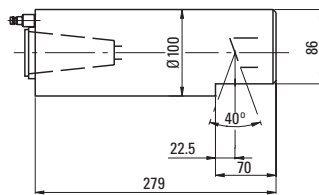
Ordering No.	915305.51
Nominal tube voltage	160 kV
Continuous rating	3000 W
Focal spot acc. EN 12543	d = 7.5 mm
Filament current, max.*	4.2 A
Filament voltage, typical	5.5 V
Inherent filtration	0.8 mm Be
Target material	W
Target angle	30°
Radiation coverage	40°
Leakage radiation, max.	2.5 mSv/h
Cooling medium	Water
Cooling medium flow, min.	4 l/min
Temperature at inlet, max.	35° C
Weight	8 kg
Terminal type	R24

Mounting flange	4512-104-87121
Locking device	941002

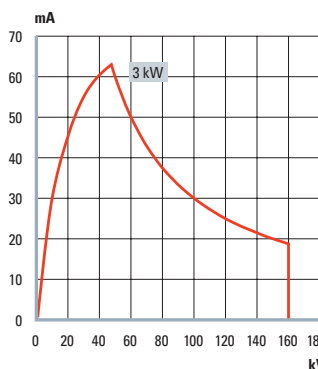
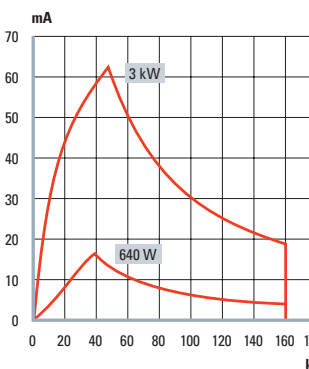
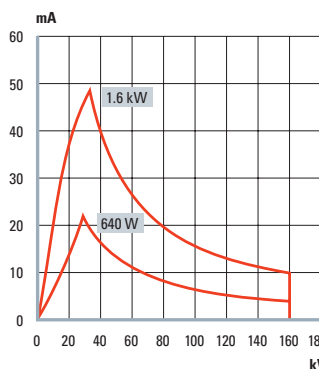
Mounting flange	4512-104-87121
Locking device	941002

Mounting flange	4512-104-87121
Locking device	941002

Outline drawing



Tube diagram



*Setting the maximum Filament current above 4.0A may reduce the lifetime of the Filament to less than 2000 hours.



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

4512-104-87121
941002



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

4512-104-87141
940303



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°
10 mSv/h
Water
4 l/min
35° C
11 kg
R24

4512-104-87131
941002

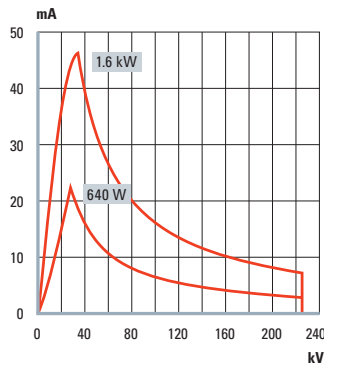
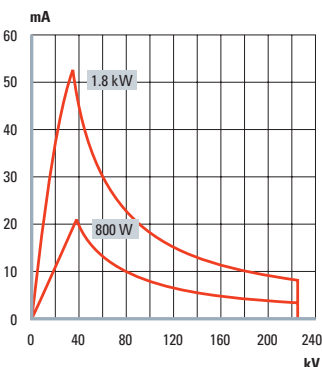
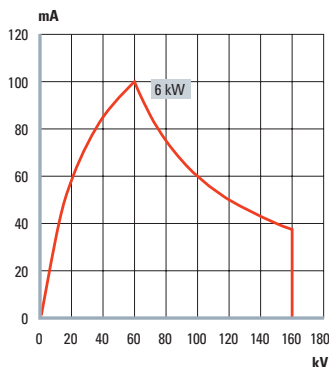
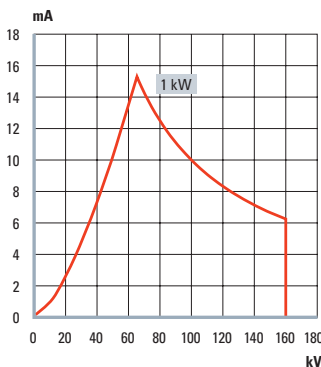
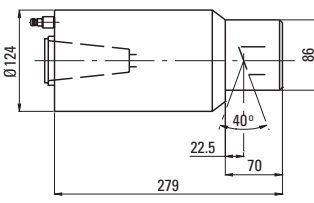
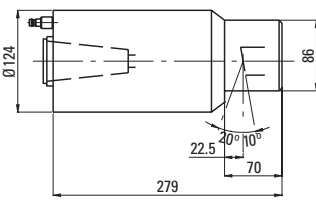
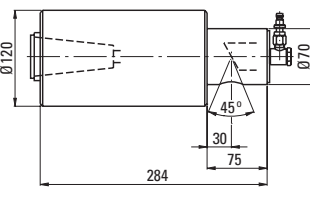
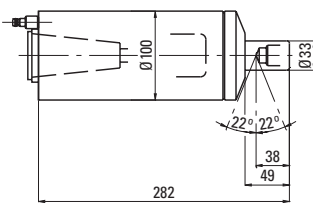
*Threshold: 30 %



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

4512-104-87131
941002



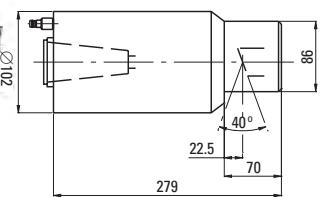
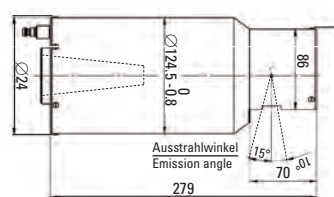
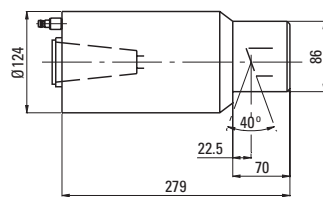


	MXR-225/22	MXR-225HP/11 FB	MXR-226
Ordering No.	915326.51	915362.51	915332.51
Nominal tube voltage	225 kV	225 kV	225 kV
Continuous rating	640 W / 3000 W	800 W / 1800 W	3000 W
Focal spot acc. EN 12543	d = 1.0 mm / d = 5.5 mm	d = 0.4 mm* / d = 1.0 mm	d = 7.5 mm
Filament current, max.*	4.1 A / 4.2 A	4.1 A / 4.1 A	4.2 A
Filament voltage, typical	3.0 V / 5.5 V	2.9 V / 7.3 V	5.5 V
Inherent filtration	0.8 mm Be	1.0 mm Cu	0.8 mm Be
Target material	W	W	W
Target angle	20°	11°	30°
Radiation coverage	40°	90° x 25°	40°
Leakage radiation, max.	10 mSv/h	10 mSv/h	10 mSv/h
Cooling medium	Water	Water	Water
Cooling medium flow, min.	4 l/min	4 l/min	4 l/min
Temperature at inlet, max.	35° C	35° C	35° C
Weight	11 kg	11 kg	11 kg
Terminal type	R24	R24	R24

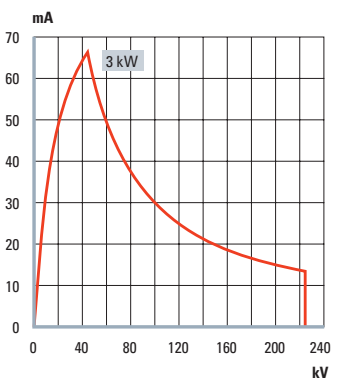
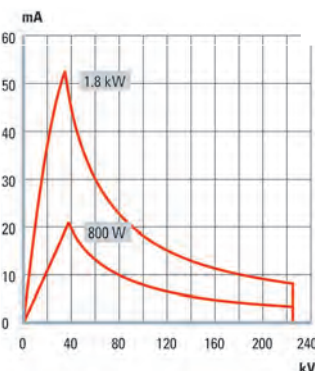
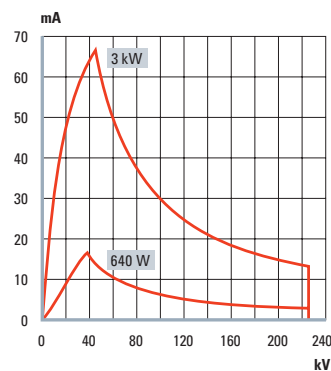
Mounting flange	4512-104-87131	4512-104-87131	4512-104-87131
Locking device	941002	941002	941002

*Threshold: 25 %

Outline drawing



Tube diagram



*Setting the maximum Filament current above 4.0A may reduce the lifetime of the Filament to less than 2000 hours.





10/2011

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Technology with Passion

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