

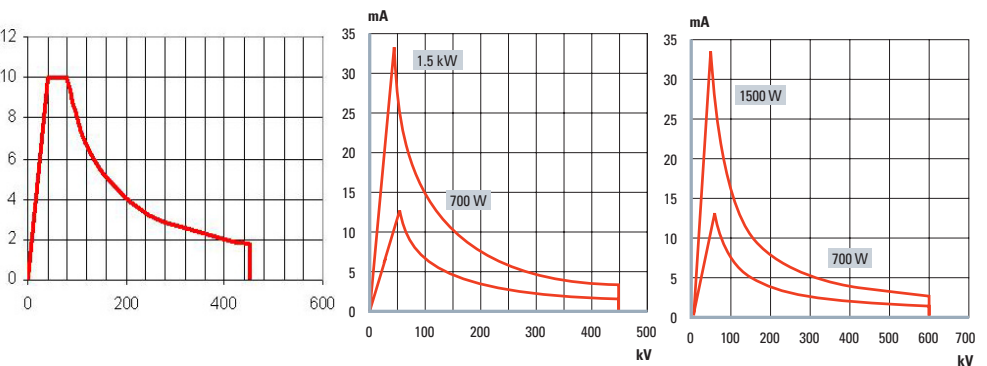
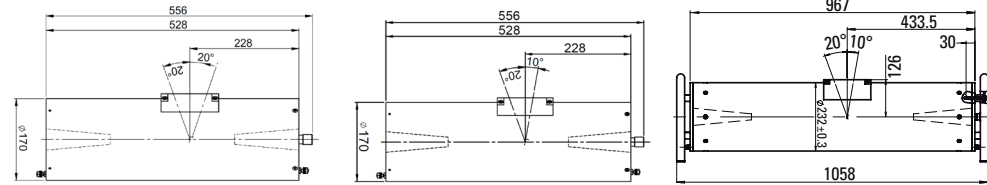
Bipolar Metal Ceramic Tubes



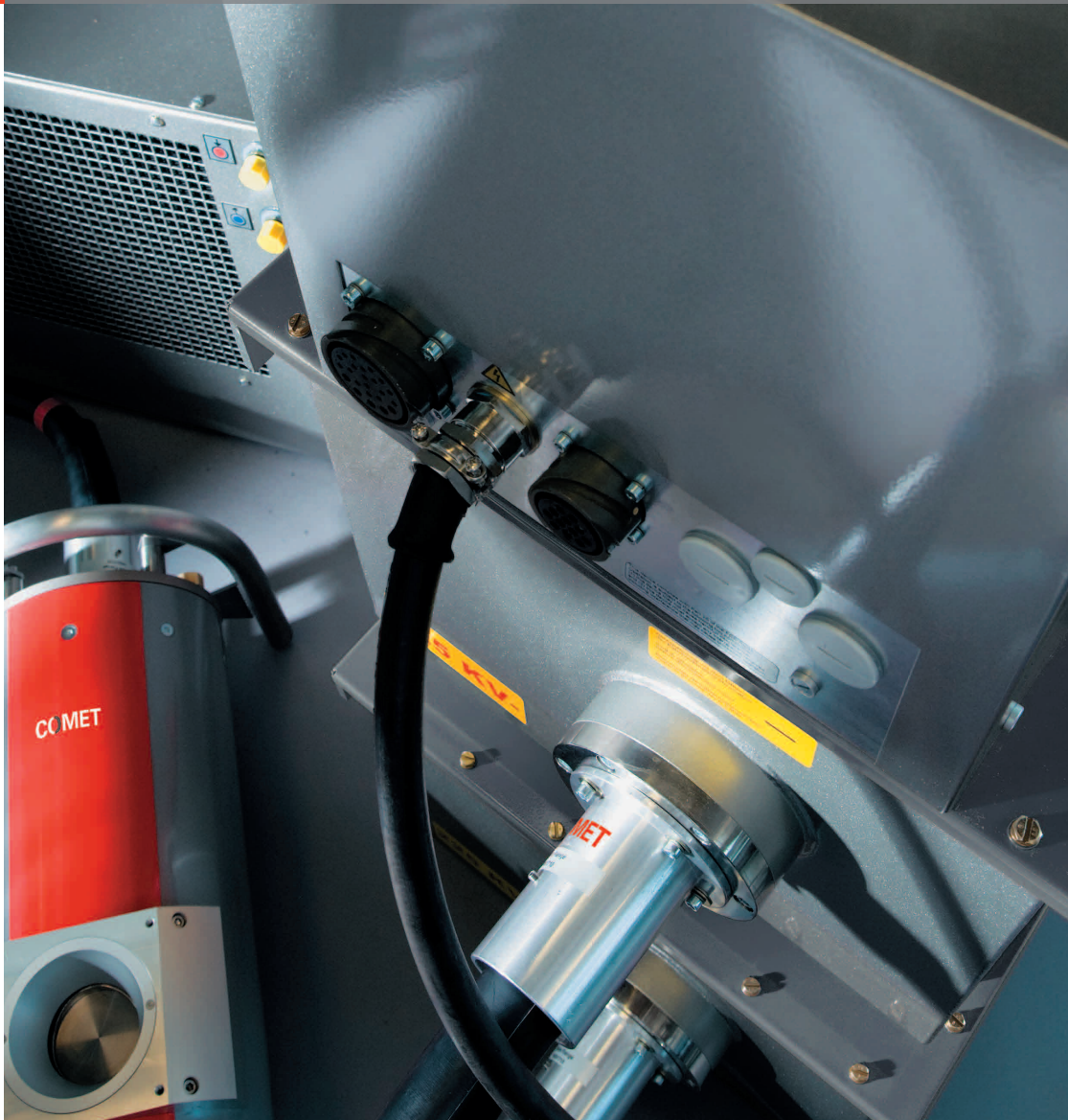
MXC-451	MXC-451HP/11	MXR-600HP/11
915704.51	915705.51	915378.51
—	—	—
450 kV	450 kV	600 kV
800 W	700 W / 1500 W	700 W / 1500 W
d = 7.5 mm	d = 0.4 mm* / d = 1.0 mm	d = 0.4 mm* / d = 1.0 mm
4.6 A	4.1 A / 4.6 A	4.1 A / 4.6 A
6.8 V	2.3 V / 6.8 V	2.3 V / 6.8 V
2 mm Be	3 mm + 2 mm Be	3 mm + 2 mm Be
W	W	W
30°	11°	11°
40°x40°	40°x30°	40° x 30°
5 mSv/h	5 mSv/h	5 mSv/h
Oil	Oil	Oil
7 l/min	14 l/min	14 l/min
50° C	50° C	50° C
49 kg	45 kg	145 kg
R28	R28	R30
20032631	20032631	4512-104-87431
—	—	—

*Threshold: 25 %

*Threshold: 25 %



Overview



05/2012 - V2, specification subject to change without notice

COMET
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**About Bipolar Metal Ceramic X-Ray Tubes**

The COMET Bipolar Metal Ceramic Tubes are designed for use in demanding industrial applications as Security and Non-Destructive Testing.

The tube assembly consists of a Bipolar X-Ray tube and tube housing with two integrated high voltage receptacle sockets. The X-Ray proof housing has an integrated cooling system and is equipped with oil hose connections. The main advantages are high power, small dimensions, low weight and rugged mechanical design.

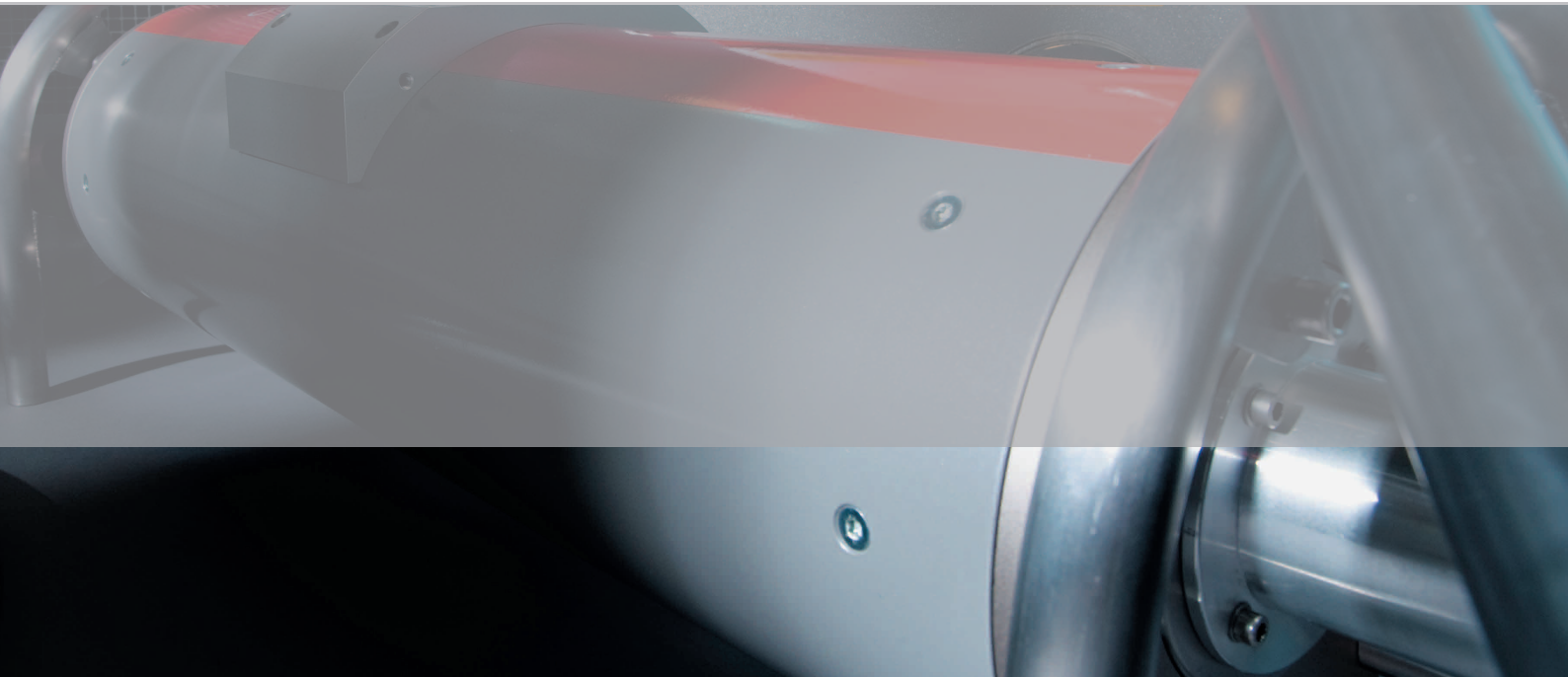
“One Stop Shop” for Industrial X-Ray Sources:**COMET’s XRS Modules**

COMET is pleased to offer all of the necessary components for a customized X-Ray module: The new XRS modules contain a COMET X-Ray tube, XRP Generator, HV-cables, cooler and interconnections designed for easy integration that will optimize system performance. All XRS modules are factory pre-tested for hassle free installation and operation.

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

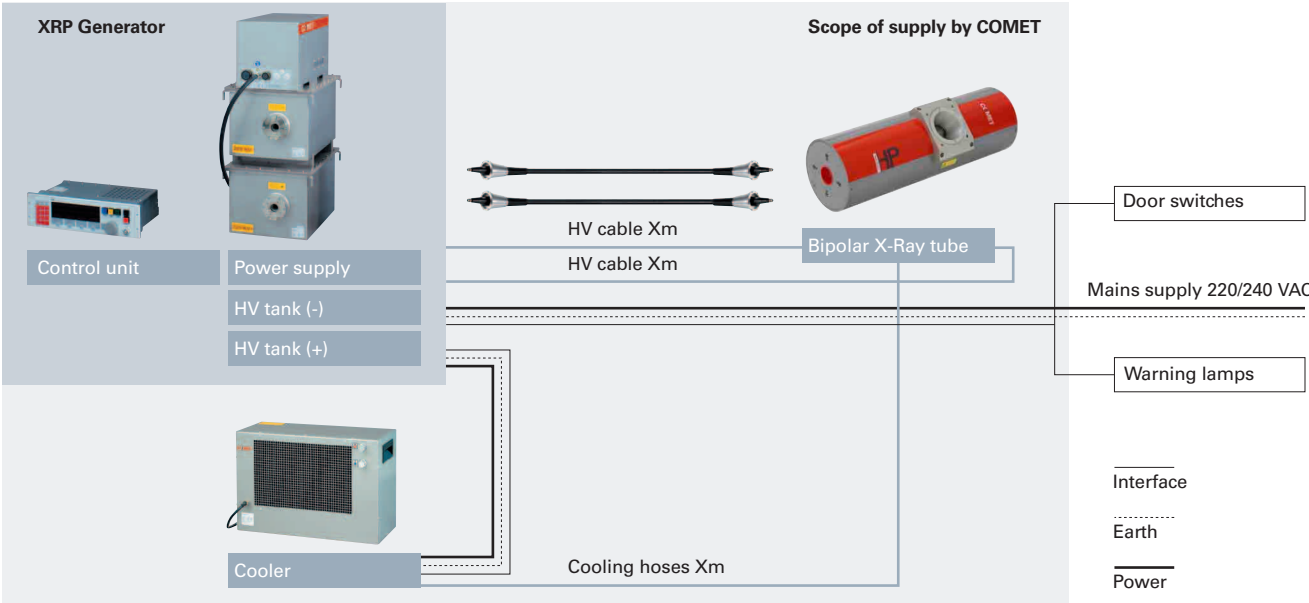
About the Business Unit Industrial X-Ray

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 modules with small focal spot resolution 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.



Bipolar X-Ray Source

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



Bipolar Metal Ceramic Tubes – Configuration Information (examples)

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

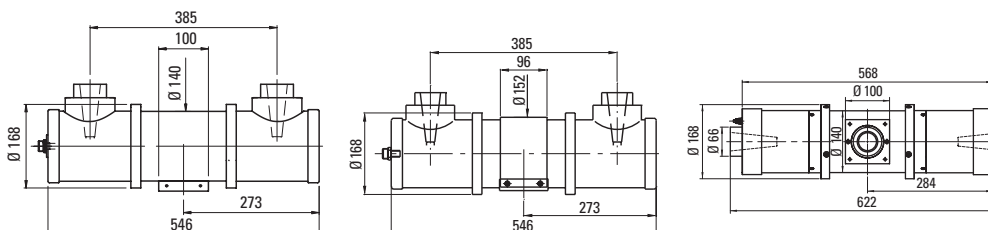
GENERATOR							TUBE				CABLE		COOLER	
XRS Module	Type	Voltage range (kV)	Current range (mA)	Max. power (W)	Output connector	Ordering No. flange	Tube type example	Ordering No.	Focal spots (EN 12543)	Terminal type	Ordering No. flange	Type Ordering No.	Type	Ordering No.
XRS-320	XRP-320/4500/2	15 – 320	0 – 22.5	4500	R24	4512-104-87101	MXR-320/23	915334.51	d=1.9mm/d=3.6mm	R24	4512-104-87141	N3/160-R24SL-R24SL-Xm	XRC-4501-OW	10008643
							MXR-320/26	915358.51	d=3.0mm/d=5.5mm	R24	4512-104-87141	N3/160-R24SL-R24SL-Xm	XRC-4501-OA	10008642
							MXR-320HP/11	915368.51	d=0.4mm*/d=1.0mm	R24	4512-104-87141	N3/160-R24SL-R24SL-Xm	XRC-4501-OW	10008643
							MXR-320HP/11 FB	915388.51	d=0.4mm*/d=1.0mm	R24	4512-104-87141	N3/160-R24SL-R24SL-Xm	XRC-4501-OA	10008642
XRS-420	XRP-450/4500/2	20 – 450	0 – 15	4500	R28	4512-104-87111	MXR-421/26	915366.55	d=2.5mm/d=5.5mm	R28	4512-104-87111	P3/250-R28SL-R28SL-Xm	XRC-4501-OA	10008642
XRS-450	XRP-450/4500/2	20 – 450	0 – 15	4500	R28	4512-104-87111	MXR-451/26	915366.51	d=2.5mm/d=5.5mm	R28	4512-104-87111	P3/250-R28SL-R28SL-Xm	XRC-4501-OW	10008643
							MXC-451	915704.51	d=7.5mm	R28	20032631	P3/250-R28SL-R28SL-Xm	XRC-4501-OW	10008643
							MXR-451HP/11	915369.51	d=0.4mm*/d=1.0mm	R28	4512-104-87111	P3/250-R28SL-R28SL-Xm	XRC-4501-OA	10008642
							MXR-452/Y	915344.55	d=2.5mm/d=5.5mm	R28	4512-104-87111	P3/250-R28SL-R28SL-Xm	XRC-4501-OA	10008642
XRS-600	XRP-600/4500/2	20 – 600	0 – 10	4500	R30	4512-104-87431	MXR-600HP/11	915378.51	d=0.4mm*/d=1.0mm	R30	4512-104-87431	F3/300-R30-R30-Xm	XRC-4501-OA	10008642

*Threshold: 25%

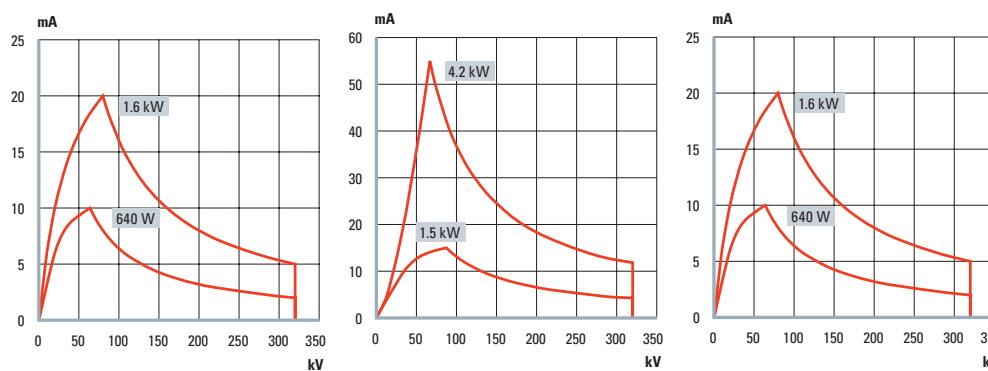


	MXR-320/23	MXR-320/26	MXR-320/23AX
Ordering No.	915334.51	915358.51	915334.58
Ordering No. with 90° housing	915334.56	915358.56	–
Nominal tube voltage	320 kV	320 kV	320 kV
Continuous rating	640 W / 1600 W	1500 W / 4200 W	640 W / 1600 W
Focal spot acc. EN 12543	d = 1.9 mm / d = 3.6 mm	d = 3.0 mm / d = 5.5 mm	d = 1.9 mm / d = 3.6 mm
Filament current, max.	4.9 A / 4.6 A	4.9 A / 4.6 A	4.9 A / 4.6 A
Filament voltage, typical	3.0 V / 6.8 V	2.6 V / 6.4 V	3.0 V / 6.8 V
Inherent filtration	3 mm Be	3 mm Be	3 mm Be
Target material	W	W	W
Target angle	20°	20°	20°
Radiation coverage	40°	40°	40°
Leakage radiation, max.	5 mSv/h	5 mSv/h	5 mSv/h
Cooling medium	Oil	Oil	Oil
Cooling medium flow, min.	14 l/min	14 l/min	14 l/min
Temperature at inlet, max.	50° C	50° C	50° C
Weight	40 kg	40 kg	40 kg
Terminal type	R24	R24	R24
Mounting flange	4512-104-87141	4512-104-87141	4512-104-87141
Locking device	940303	940303	940303

Outline drawing

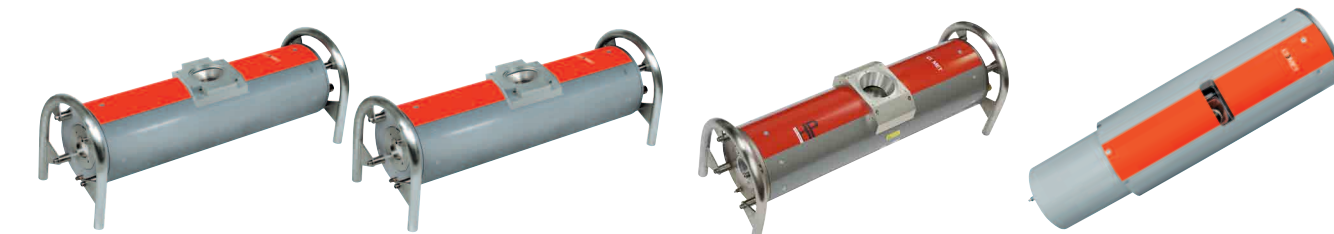
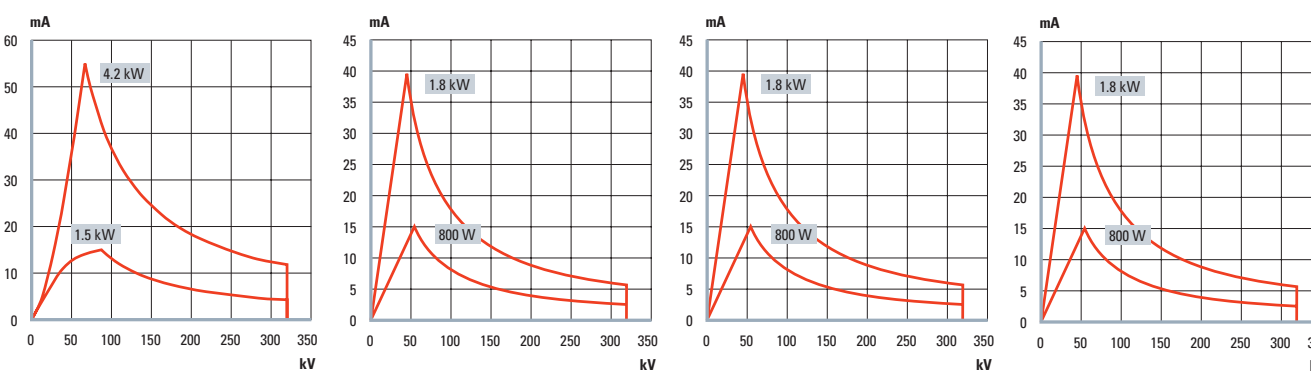
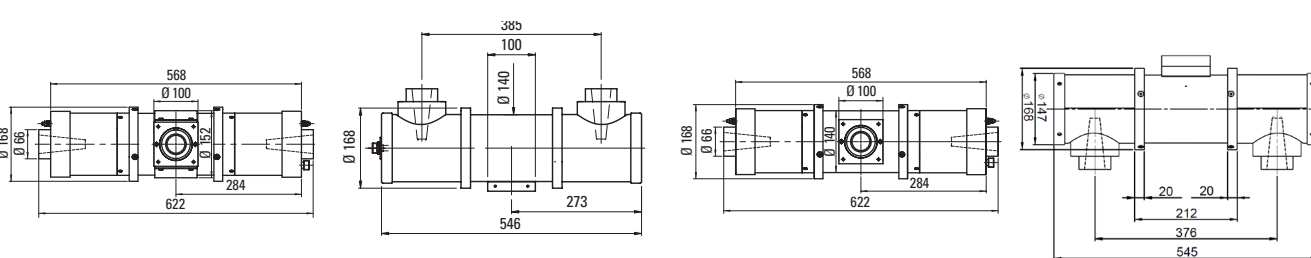


Tube diagram



	MXR-320/26AX	MXR-320HP/11	MXR-320HP/11AX	MXR-320HP/11 FB
	915358.58	915368.51	915368.58	915388.51
	—	—	—	—
	320 kV	320 kV	320 kV	320 kV
	1500 W / 4200 W	800 W / 1800 W	800 W / 1800 W	800 W / 1800 W
	d = 3.0 mm / d = 5.5 mm	d = 0.4 mm* / d = 1.0 mm	d = 0.4 mm* / d = 1.0 mm	d = 0.4 mm* / d = 1.0 mm
	4.9 A / 4.6 A	4.1 A / 4.6 A	4.1 A / 4.6 A	4.1 A / 4.6 A
	2.6 V / 6.4 V	2.3 V / 6.8 V	2.3 V / 6.8 V	2.3 V / 6.8 V
	3 mm Be	3 mm Be	3 mm Be	0.5 mm Fe + 0.5 mm Ti
	W	W	W	W
	20°	11°	11°	11°
	40°	40° x 30°	40° x 30°	80° x 11°
	5 mSv/h	5 mSv/h	5 mSv/h	5 mSv/h
	Oil	Oil	Oil	Oil
	14 l/min	14 l/min	14 l/min	14 l/min
	50° C	50° C	50° C	50° C
	40 kg	40 kg	40 kg	40 kg
	R24	R24	R24	R24
	4512-104-87141	4512-104-87141	4512-104-87141	4512-104-87141
	940303	940303	940303	940303

*Threshold: 25 % *Threshold: 25 % *Threshold: 25 %



MXR-421/26	MXR-451/26	MXR-451HP/11	MXR-452/Y
915366.55	915366.51	915369.51	915344.55
–	–	–	–
420 kV	450 kV	450 kV	450 kV
900 W / 4500 W	900 W / 4500 W	700 W / 1500 W	900 W / 4500 W
d = 2.5 mm / d = 5.5 mm	d = 2.5 mm / d = 5.5 mm	d = 0.4 mm* / d = 1.0 mm	d = 2.5 mm / d = 5.5 mm
4.9 A / 4.6 A	4.9 A / 4.6 A	4.1 A / 4.6 A	4.9 A / 4.6 A
3.0 V / 6.8 V	3.0 V / 6.8 V	2.3 V / 6.8 V	3.0 V / 6.8 V
3 mm + 2 mm Be	3 mm + 2 mm Be	3 mm + 2 mm Be	2.3 mm Fe + 1.0 mm Cu
W	W	W	W
30°	30°	11°	30°
40°	40°	40° x 30°	90° x 20°
10 mSv/h	10 mSv/h	5 mSv/h	10 mSv/h
Oil	Oil	Oil	Oil
14 l/min	14 l/min	14 l/min	14 l/min
50° C	50° C	50° C	50° C
95 kg	95 kg	95 kg	95 kg
R28	R28	R28	R28
4512-104-87111	4512-104-87111	4512-104-87111	4512-104-87111
–	–	–	–

*Threshold: 25 %

