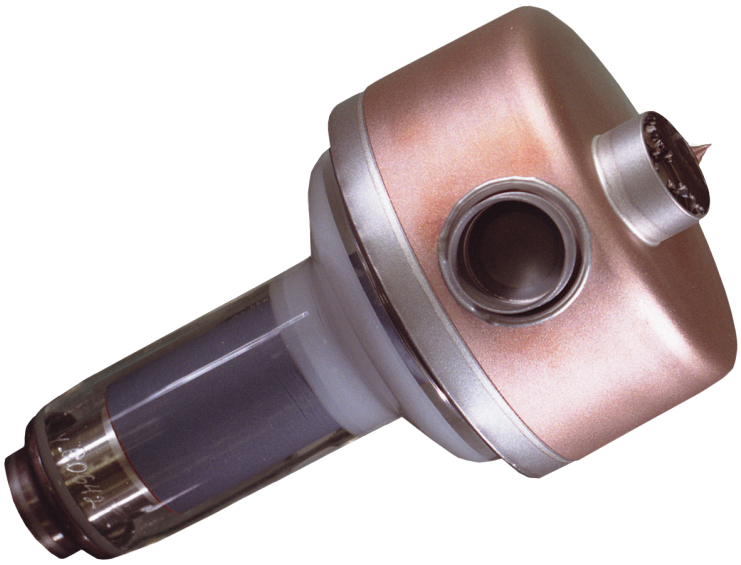
VAREX IMAGING

M-103T

Rotating Anode X-Ray Tube
旋转阳极 X 射线管



Note: Document originally drafted in the English language.
注释：文件最初用英语起草。

Product Description

The M-103T is a 3.0” (77 mm) 49 kV, 222 kJ (300 kHU) maximum anode heat content, rotating anode insert. This insert is specifically designed for use in Mammography systems. The insert features a 10° and 16° biangular rhenium tungsten molybdenum target and is available with the following nominal focal spots:

0.1 (10°) - 0.3 (16°)
IEC 60336

Loading Factor for Resolution:
Small - 25 kV, 30 mA
Large - 25 kV, 100 mA

Continuous Anode Input
Power: 714 Watts

Nominal Anode Input Power:
Small - 2.5 kW IEC 60613
Large - 9.9 kW IEC 60613
For the equivalent anode input power of 60 Watts

产品说明

M-103T是一款具有 3.0” (77 mm) 靶盘, 49 kV, 222 kJ (300 kHU)最大阳极热容量的旋转阳极X线管芯。此管芯经专门设计，适用于乳腺放射成像系统。该管芯的靶盘结构为10°和16°靶角，铼钨钼合金靶材，并可与下列标称焦点一起使用：

0.1 (10°) - 0.3 (16°)
IEC 60336

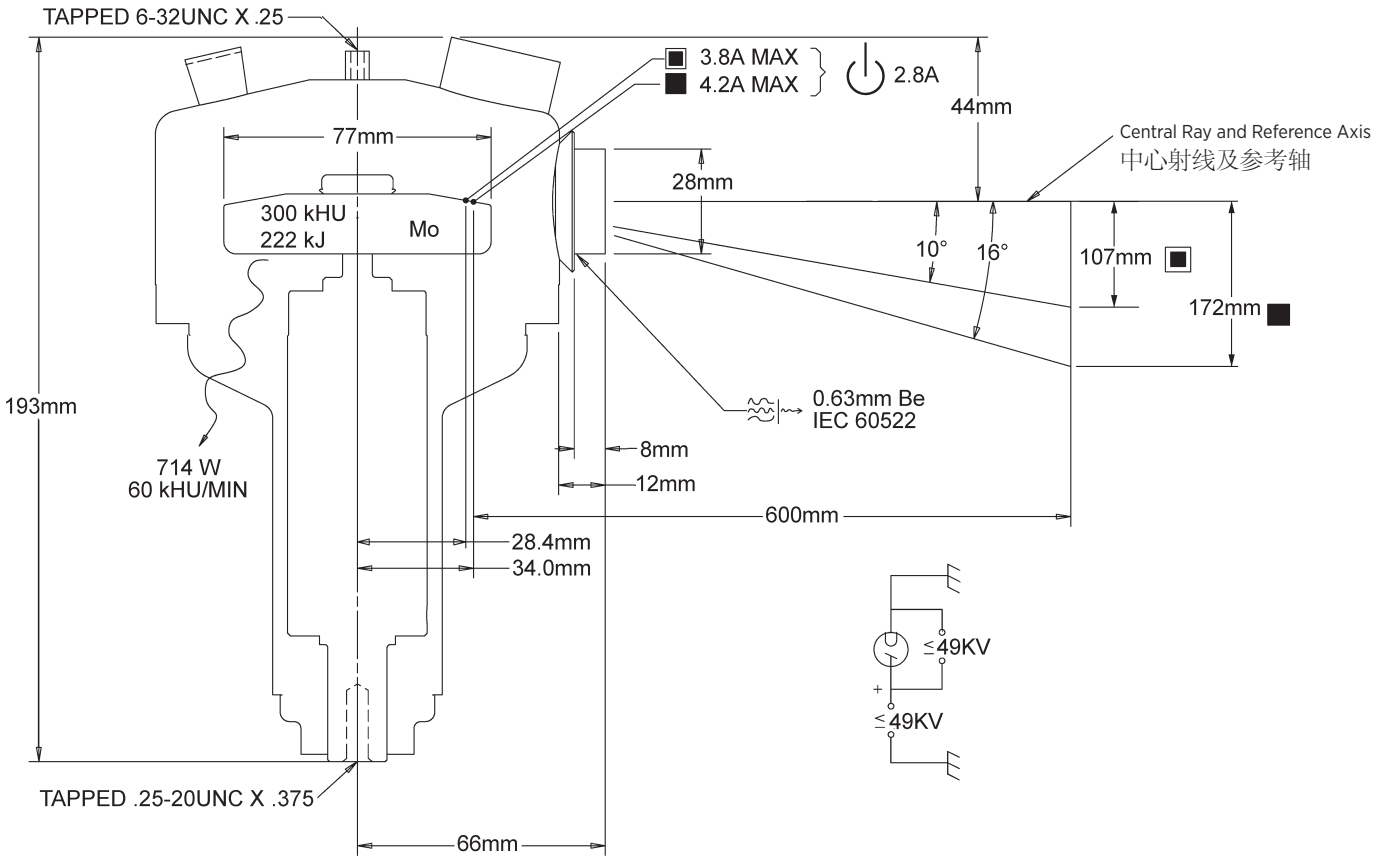
狭缝焦点测试条件：
小焦点 - 25 kV, 30 mA
大焦点 - 25 kV, 100 mA

标称阳极输入功率：
小焦点 - 2.5 kW IEC 60613
大焦点 - 9.9 kW IEC 60613
适用于60瓦的等效阳极输入功率

133835-004 Rev C 05/2024

Tube Outline Drawing
射线管轮廓图

Dimensions are for Reference only
尺寸仅供参考



Small -White
小焦点 – 白

Large - Black
大焦点 – 黑

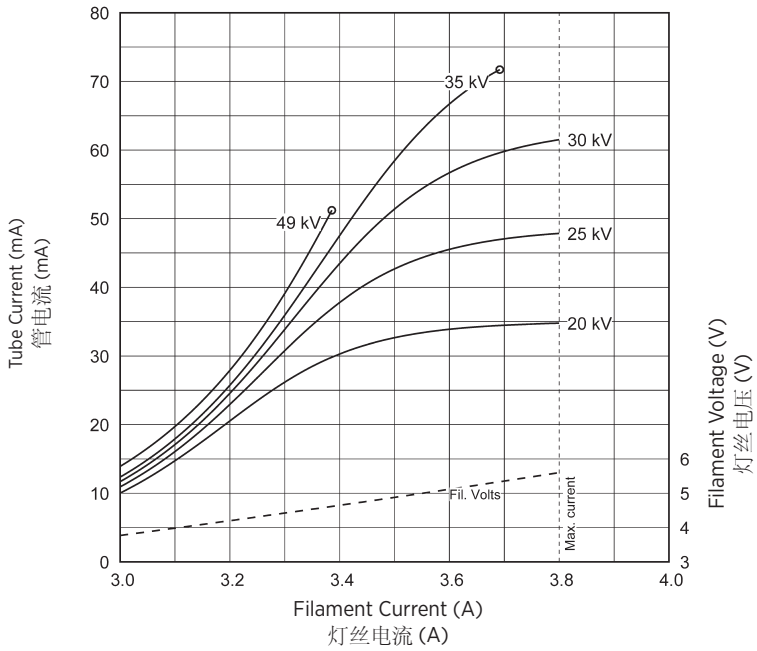
Stand - By
备用

Frame or Chasis
框架或底盘

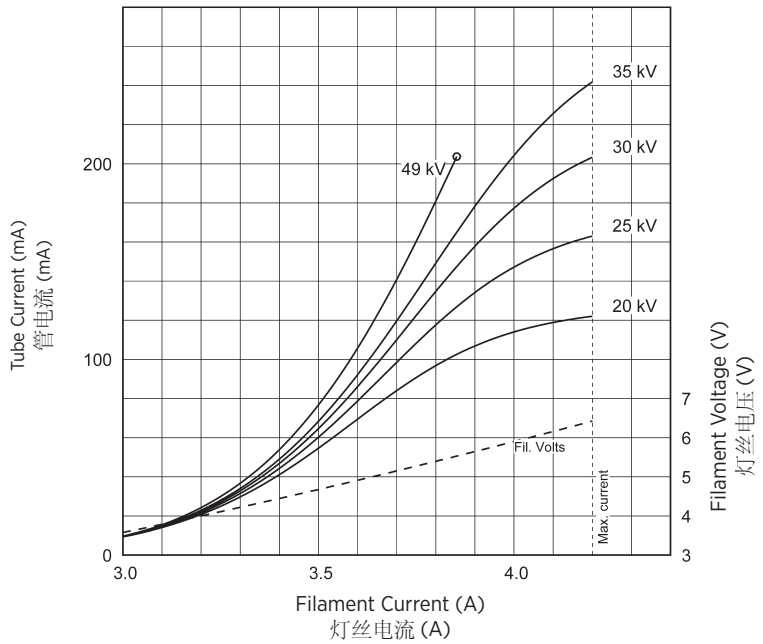
X-Ray Tube
X 射线管

Radiation Filter or Filtration
辐射过滤器或过滤

3 Ø 全波



THREE PHASE EMISSION (± .15 A)
三相发射 (± .15 A)
0.1



THREE PHASE EMISSION (± .15 A)
三相发射 (± .15 A)
0.3

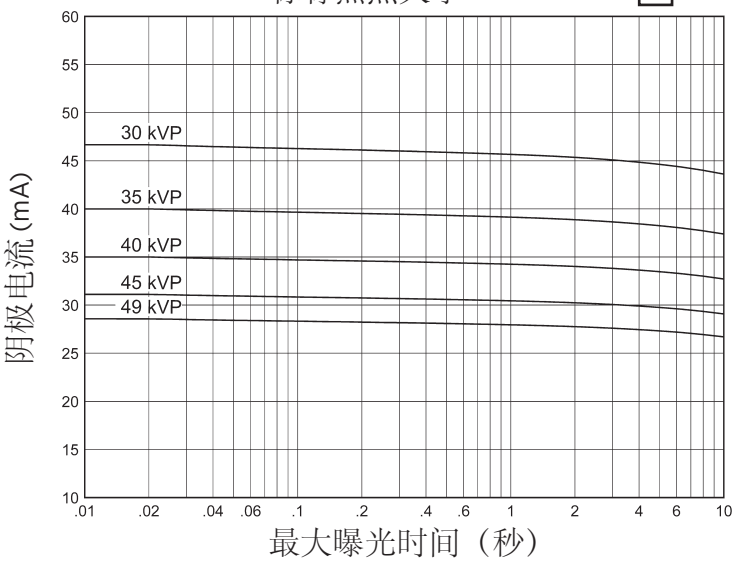
Note:
When using these emission curves for trial exposures, refer to the power rating curves shown for maximum kV, tube emission, filament current, exposure time, and target speed.

注释：
当为试验曝光使用这些辐射曲线时，请同时参考额定功率曲线中与最大管电压、管电流、灯丝电流、曝光时间和阳极靶转速相关的限制条件。

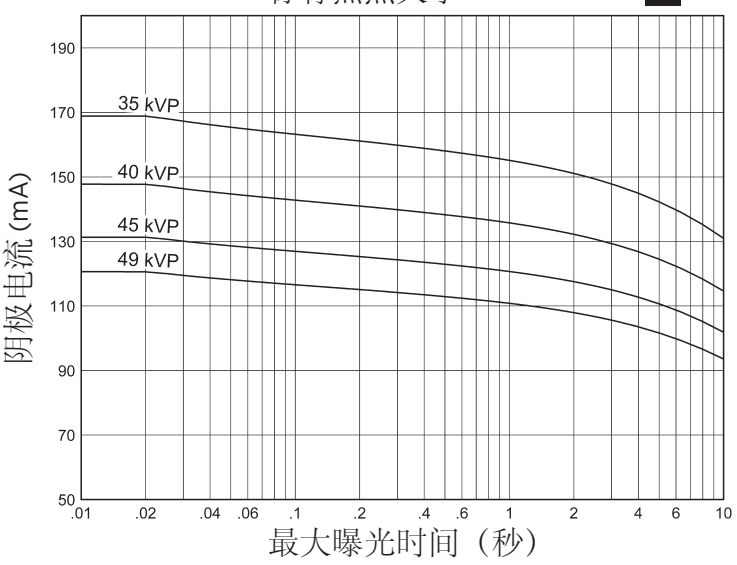
3 Ø 恒定电压 ⎓

50 Hz

标称焦点大小 – 0.1

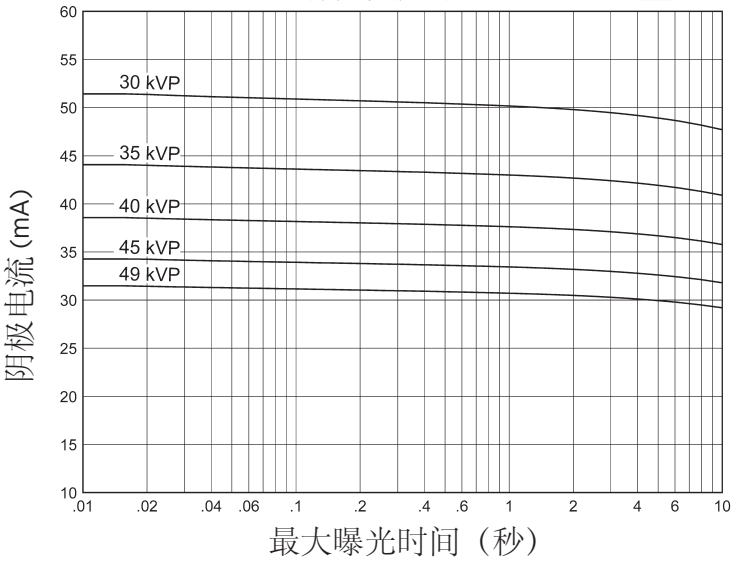


标称焦点大小 – 0.3

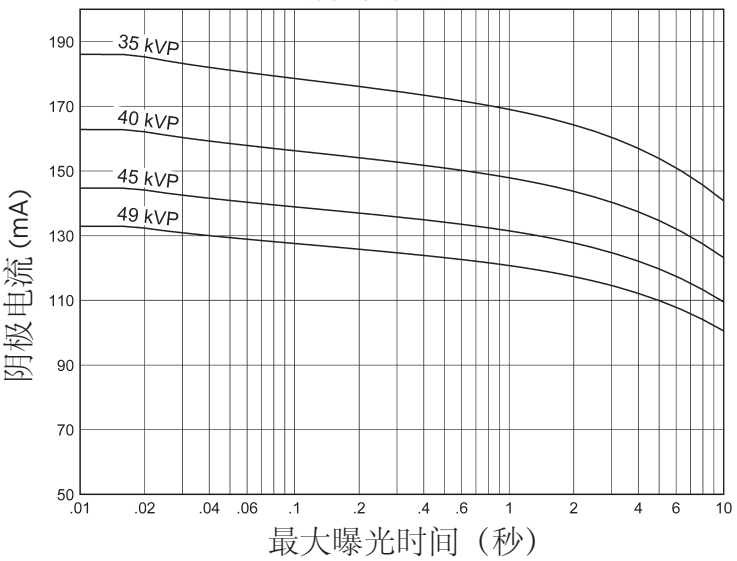


60 Hz

标称焦点大小 – 0.1



标称焦点大小 – 0.3



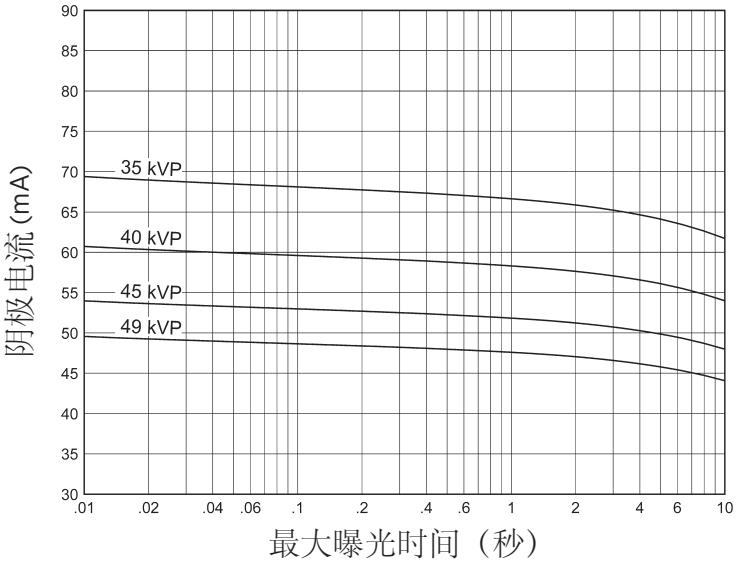
Nominal anode input power for the anode heat content 40%. IEC 60613

注释
额定值表反映最大管性能。管的工作状况最终受系统软件的限制。

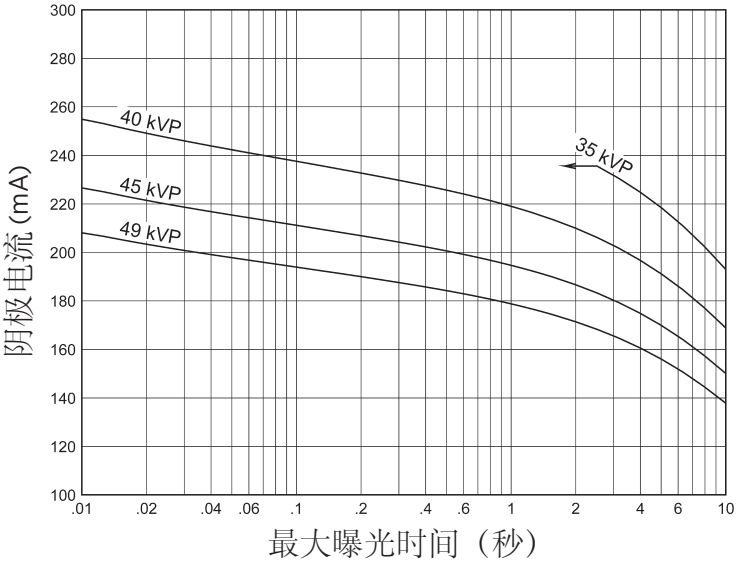
3 Ø 恒定电压 ⎓

150 Hz

标称焦点大小 – 0.1 ■

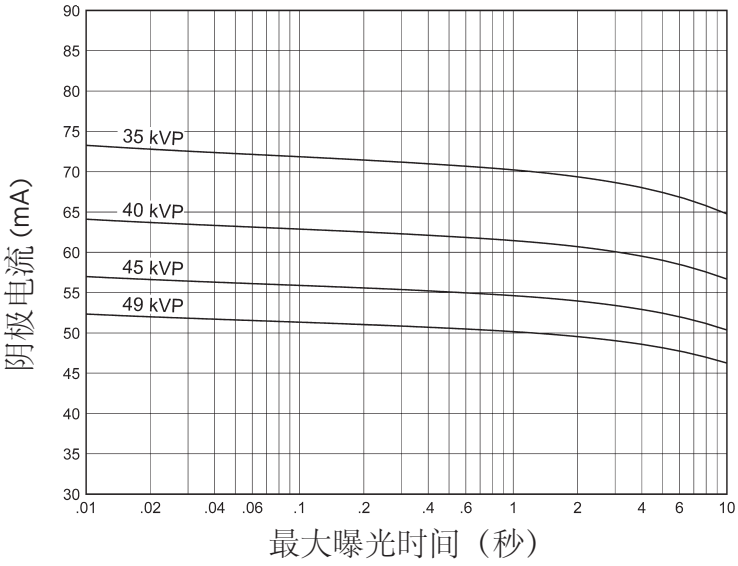


标称焦点大小 – 0.3 ■

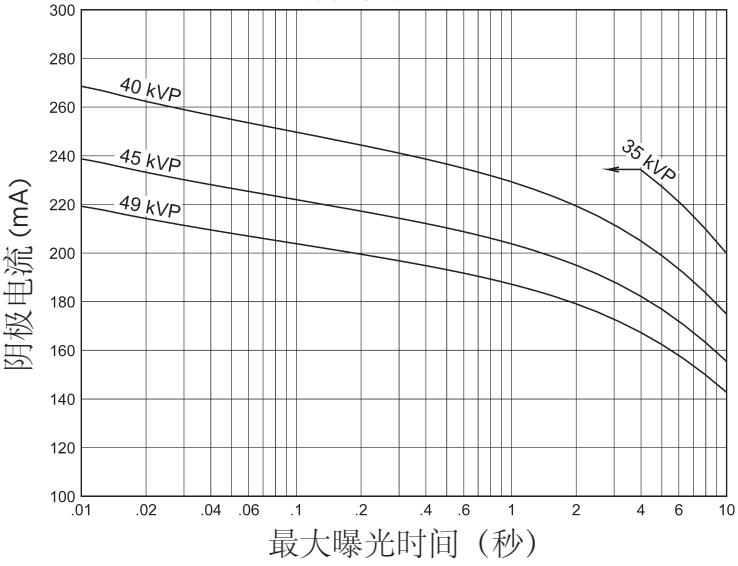


180 Hz

标称焦点大小 – 0.1 ■



标称焦点大小 – 0.3 ■



Nominal anode input power for the anode heat content 40%. IEC 60613

注释
额定值表反映最大管性能。管的工作状况最终受系统软件的限制。

VOLUMETRIC/HELICAL SCAN RATING CHART

M-103T FOCAL SPOT: 0.1 10 Degrees 3 PHASE 2800 RPM

Volume scan time (seconds)	Maximum allowed tube current (mA) as a function of the following starting heat storage and tube voltages								
	Starting heat storage = 20 %			Starting heat storage = 40 %			Starting heat storage = 60 %		
	25 kV	30 kV	35 kV	25 kV	30 kV	35 kV	25 kV	30 kV	35 kV
1	30 (c)	30	20	30 (c)	30	20	30 (c)	30	20
2	30 (c)	30	20	30 (c)	30	20	30 (c)	30	20
3	30 (c)	30	20	30 (c)	30	20	30 (c)	30	20
4	30 (c)	30	20	30 (c)	30	20	30 (c)	30	20
5	30 (c)	30	20	30 (c)	30	20	30 (c)	30	20
6	30 (c)	30	20	30 (c)	30	20	30 (c)	30	20
8	30 (c)	30	20	30 (c)	30	20	30 (c)	30	20
10	30 (c)	30	20	30 (c)	30	20	30 (c)	30	20
15	30 (c)	30	20	30 (c)	30	20	30 (c)	30	20
20	30 (c)	30	20	30 (c)	30	20	30 (c)	30	20

NOTES
1. *(kW) of scan equals mA x kVp ÷ 1000*
   For example – 70 kV x 300 mA = 21 kW
2. *Limits are based on maximum track rating except for the following codes:*
   (a) – limited by available heat storage
   (b) – limited by window heating
   (c) – limited by filament emission

Thu Mar 14 12:26:58 2024

VOLUMETRIC/HELICAL SCAN RATING CHART

M-103T FOCAL SPOT: 0.1 10 Degrees 3 PHASE 3400 RPM

Volume scan time (seconds)	Maximum allowed tube current (mA) as a function of the following starting heat storage and tube voltages								
	Starting heat storage = 20 %			Starting heat storage = 40 %			Starting heat storage = 60 %		
	25 kV	30 kV	35 kV	25 kV	30 kV	35 kV	25 kV	30 kV	35 kV
1	30 (c)	30	30	30 (c)	30	30	30 (c)	30	30
2	30 (c)	30	30	30 (c)	30	30	30 (c)	30	30
3	30 (c)	30	30	30 (c)	30	30	30 (c)	30	30
4	30 (c)	30	30	30 (c)	30	30	30 (c)	30	30
5	30 (c)	30	30	30 (c)	30	30	30 (c)	30	30
6	30 (c)	30	30	30 (c)	30	30	30 (c)	30	30
8	30 (c)	30	30	30 (c)	30	30	30 (c)	30	30
10	30 (c)	30	30	30 (c)	30	30	30 (c)	30	30
15	30 (c)	30	30	30 (c)	30	30	30 (c)	30	30
20	30 (c)	30	30	30 (c)	30	30	30 (c)	30	30

NOTES
1. *(kW) of scan equals mA x kVp ÷ 1000*
   For example – 70 kV x 300 mA = 21 kW
2. *Limits are based on maximum track rating except for the following codes:*
   (a) – limited by available heat storage
   (b) – limited by window heating
   (c) – limited by filament emission

Thu Mar 14 12:28:03 2024

VOLUMETRIC/HELICAL SCAN RATING CHART

M-103T FOCAL SPOT: 0.1 10 Degrees 3 PHASE 8500 RPM

Volume scan time (seconds)	Maximum allowed tube current (mA) as a function of the following starting heat storage and tube voltages								
	Starting heat storage = 20 %			Starting heat storage = 40 %			Starting heat storage = 60 %		
	25 kV	30 kV	35 kV	25 kV	30 kV	35 kV	25 kV	30 kV	35 kV
1	30 (c)	50 (c)	40	30 (c)	50 (c)	40	30 (c)	50 (c)	40
2	30 (c)	50 (c)	40	30 (c)	50 (c)	40	30 (c)	50 (c)	40
3	30 (c)	50 (c)	40	30 (c)	50 (c)	40	30 (c)	50 (c)	40
4	30 (c)	50 (c)	40	30 (c)	50 (c)	40	30 (c)	50 (c)	40
5	30 (c)	50 (c)	40	30 (c)	50 (c)	40	30 (c)	50 (c)	40
6	30 (c)	50 (c)	40	30 (c)	50 (c)	40	30 (c)	50 (c)	40
8	30 (c)	50 (c)	40	30 (c)	50 (c)	40	30 (c)	50 (c)	40
10	30 (c)	50 (c)	40	30 (c)	50 (c)	40	30 (c)	50 (c)	40
15	30 (c)	50 (c)	40	30 (c)	50 (c)	40	30 (c)	50 (c)	40
20	30 (c)	50 (c)	40	30 (c)	50 (c)	40	30 (c)	50 (c)	40

NOTES
1. *(kW) of scan equals mA x kVp ÷ 1000*
   For example – 70 kV x 300 mA = 21 kW
2. *Limits are based on maximum track rating except for the following codes:*
   (a) – limited by available heat storage
   (b) – limited by window heating
   (c) – limited by filament emission

Thu Mar 14 12:28:32 2024

VOLUMETRIC/HELICAL SCAN RATING CHART

M-103T FOCAL SPOT: 0.1 10 Degrees 3 PHASE 9600 RPM

Volume scan time (seconds)	Maximum allowed tube current (mA) as a function of the following starting heat storage and tube voltages								
	Starting heat storage = 20 %			Starting heat storage = 40 %			Starting heat storage = 60 %		
	25 kV	30 kV	35 kV	25 kV	30 kV	35 kV	25 kV	30 kV	35 kV
1	30 (c)	50 (c)	40	30 (c)	50 (c)	40	30 (c)	50 (c)	40
2	30 (c)	50 (c)	40	30 (c)	50 (c)	40	30 (c)	50 (c)	40
3	30 (c)	50 (c)	40	30 (c)	50 (c)	40	30 (c)	50 (c)	40
4	30 (c)	50 (c)	40	30 (c)	50 (c)	40	30 (c)	50 (c)	40
5	30 (c)	50 (c)	40	30 (c)	50 (c)	40	30 (c)	50 (c)	40
6	30 (c)	50 (c)	40	30 (c)	50 (c)	40	30 (c)	50 (c)	40
8	30 (c)	50 (c)	40	30 (c)	50 (c)	40	30 (c)	50 (c)	40
10	30 (c)	50 (c)	40	30 (c)	50 (c)	40	30 (c)	50 (c)	40
15	30 (c)	50 (c)	40	30 (c)	50 (c)	40	30 (c)	50 (c)	40
20	30 (c)	50 (c)	40	30 (c)	50 (c)	40	30 (c)	50 (c)	40

NOTES
1. *(kW) of scan equals mA x kVp ÷ 1000*
   For example – 70 kV x 300 mA = 21 kW
2. *Limits are based on maximum track rating except for the following codes:*
   (a) – limited by available heat storage
   (b) – limited by window heating
   (c) – limited by filament emission

Thu Mar 14 12:29:09 2024

VOLUMETRIC/HELICAL SCAN RATING CHART

M-103T FOCAL SPOT: 0.3 16 Degrees 3 PHASE 2800 RPM

Volume scan time (seconds)	Maximum allowed tube current (mA) as a function of the following starting heat storage and tube voltages								
	Starting heat storage = 20 %			Starting heat storage = 40 %			Starting heat storage = 60 %		
	25 kV	30 kV	35 kV	25 kV	30 kV	35 kV	25 kV	30 kV	35 kV
1	150	130	110	150	130	110	150	130	110
2	150	130	110	150	130	110	150	130	110
3	150	130	110	150	130	110	150	130	110
4	150	130	110	150	130	110	150	130	110
5	150	130	110	150	130	110	150	130	110
6	150	130	110	150	130	110	150	130	110
8	150	130	110	150	130	110	150	130	110
10	150	130	110	150	130	110	150	130	110
15	150	130	110	150	130	110	140 (a)	120 (a)	100 (a)
20	150	130	110	150	130	110	110 (a)	90 (a)	80 (a)

NOTES
1. *(kW) of scan equals mA x kVp ÷ 1000*
   For example – 70 kV x 300 mA = 21 kW
2. *Limits are based on maximum track rating except for the following codes:*
   (a) – limited by available heat storage
   (b) – limited by window heating
   (c) – limited by filament emission

Thu Mar 14 12:34:37 2024

VOLUMETRIC/HELICAL SCAN RATING CHART

M-103T FOCAL SPOT: 0.3 16 Degrees 3 PHASE 3400 RPM

Volume scan time (seconds)	Maximum allowed tube current (mA) as a function of the following starting heat storage and tube voltages								
	Starting heat storage = 20 %			Starting heat storage = 40 %			Starting heat storage = 60 %		
	25 kV	30 kV	35 kV	25 kV	30 kV	35 kV	25 kV	30 kV	35 kV
1	160 (c)	140	120	160 (c)	140	120	160 (c)	140	120
2	160 (c)	140	120	160 (c)	140	120	160 (c)	140	120
3	160 (c)	140	120	160 (c)	140	120	160 (c)	140	120
4	160 (c)	140	120	160 (c)	140	120	160 (c)	140	120
5	160 (c)	140	120	160 (c)	140	120	160 (c)	140	120
6	160 (c)	140	120	160 (c)	140	120	160 (c)	140	120
8	160 (c)	140	120	160 (c)	140	120	160 (c)	140	120
10	160 (c)	140	120	160 (c)	140	120	160 (c)	140	120
15	160 (c)	140	120	160 (c)	140	120	140 (a)	120 (a)	100 (a)
20	160 (c)	140	120	160 (c)	140	120	110 (a)	90 (a)	80 (a)

NOTES
1. *(kW) of scan equals mA x kVp ÷ 1000*
   For example – 70 kV x 300 mA = 21 kW
2. *Limits are based on maximum track rating except for the following codes:*
   (a) – limited by available heat storage
   (b) – limited by window heating
   (c) – limited by filament emission

Thu Mar 14 12:40:57 2024

VOLUMETRIC/HELICAL SCAN RATING CHART

M-103T FOCAL SPOT: 0.3 16 Degrees 3 PHASE 8500 RPM

Volume scan time (seconds)	Maximum allowed tube current (mA) as a function of the following starting heat storage and tube voltages								
	Starting heat storage = 20 %			Starting heat storage = 40 %			Starting heat storage = 60 %		
	25 kV	30 kV	35 kV	25 kV	30 kV	35 kV	25 kV	30 kV	35 kV
1	160 (c)	210 (c)	180	160 (c)	210 (c)	180	160 (c)	210 (c)	180
2	160 (c)	210 (c)	180	160 (c)	210 (c)	180	160 (c)	210 (c)	180
3	160 (c)	210 (c)	180	160 (c)	210 (c)	180	160 (c)	210 (c)	180
4	160 (c)	210 (c)	180	160 (c)	210 (c)	180	160 (c)	210 (c)	180
5	160 (c)	210 (c)	180	160 (c)	210 (c)	180	160 (c)	210 (c)	180
6	160 (c)	210 (c)	180	160 (c)	210 (c)	180	160 (c)	210 (c)	180
8	160 (c)	210 (c)	180	160 (c)	210 (c)	180	160 (c)	210 (c)	180
10	160 (c)	210 (c)	180	160 (c)	210 (c)	180	160 (c)	180 (a)	150 (a)
15	160 (c)	210 (c)	180	160 (c)	190 (a)	160 (a)	140 (a)	120 (a)	100 (a)
20	160 (c)	200 (a)	170 (a)	160 (c)	140 (a)	120 (a)	110 (a)	90 (a)	80 (a)

NOTES
1. *(kW) of scan equals mA x kVp ÷ 1000*
   For example − 70 kV x 300 mA = 21 kW
2. *Limits are based on maximum track rating except for the following codes:*
   (a) − limited by available heat storage
   (b) − limited by window heating
   (c) − limited by filament emission

Thu Mar 14 12:41:21 2024

VOLUMETRIC/HELICAL SCAN RATING CHART

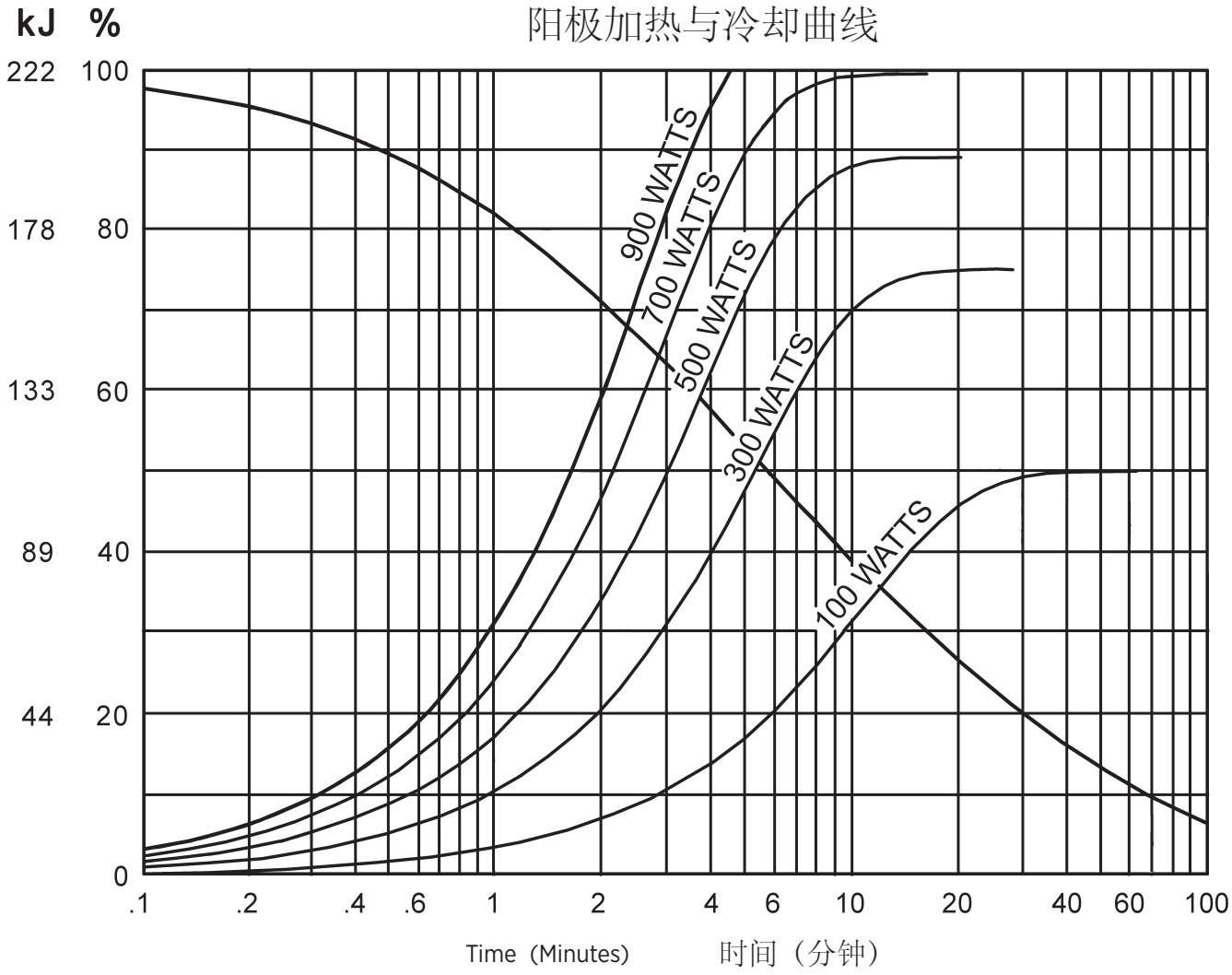
M-103T FOCAL SPOT: 0.3 16 Degrees 3 PHASE 9600 RPM

Volume scan time (seconds)	Maximum allowed tube current (mA) as a function of the following starting heat storage and tube voltages								
	Starting heat storage = 20 %			Starting heat storage = 40 %			Starting heat storage = 60 %		
	25 kV	30 kV	35 kV	25 kV	30 kV	35 kV	25 kV	30 kV	35 kV
1	160 (c)	210 (c)	190	160 (c)	210 (c)	190	160 (c)	210 (c)	190
2	160 (c)	210 (c)	190	160 (c)	210 (c)	190	160 (c)	210 (c)	190
3	160 (c)	210 (c)	190	160 (c)	210 (c)	190	160 (c)	210 (c)	190
4	160 (c)	210 (c)	190	160 (c)	210 (c)	190	160 (c)	210 (c)	190
5	160 (c)	210 (c)	190	160 (c)	210 (c)	190	160 (c)	210 (c)	190
6	160 (c)	210 (c)	190	160 (c)	210 (c)	190	160 (c)	210 (c)	190
8	160 (c)	210 (c)	190	160 (c)	210 (c)	190	160 (c)	210 (c)	190 (a)
10	160 (c)	210 (c)	190	160 (c)	210 (c)	190	160 (c)	180 (a)	150 (a)
15	160 (c)	210 (c)	190	160 (c)	190 (a)	160 (a)	140 (a)	120 (a)	100 (a)
20	160 (c)	200 (a)	170 (a)	160 (c)	140 (a)	120 (a)	110 (a)	90 (a)	80 (a)

NOTES
1. *(kW) of scan equals mA x kVp ÷ 1000*
   For example − 70 kV x 300 mA = 21 kW
2. *Limits are based on maximum track rating except for the following codes:*
   (a) − limited by available heat storage
   (b) − limited by window heating
   (c) − limited by filament emission

Thu Mar 14 12:41:45 2024

Anode Heating and Cooling Curves
阳极加热与冷却曲线



Salt Lake City, UT 1-801-972-5000

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