

- Large - Black
 Grand - Noir
 Gross - Schwarz
 Largo - Negro

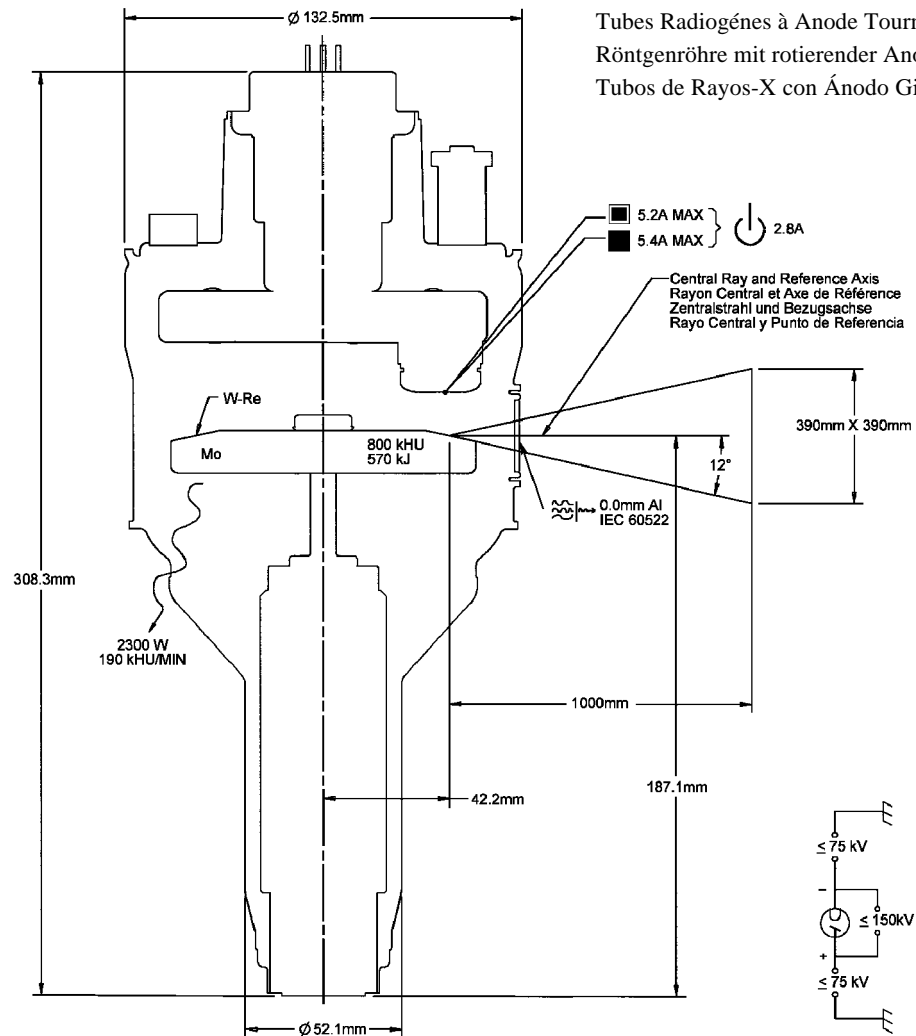
- Small - White
 Petit - Blanc
 Klein - Weiss
 Pequeño - Blanco

- Stand - By
 Attente
 Bereitschaft
 En Espera

- Frame or Chasis
 Masse
 Chassis
 Soporte o Chasis

- X
 X-Ray Tube
 Tube Radiogène
 Röntgen Röhre
 Tubo de Rayos X

- Radiation Filter or Filtration
 Filtre de rayonnement
 Filterung
 Filtración de Radiación



Tubes Radiogènes à Anode Tournante
 Röntgenröhre mit rotierender Anode
 Tubos de Rayos-X con Ánodo Giratorio

Note: Document originally drafted in the English language.

Product Description	Description du Produit	Produktbeschreibung	Descripcion del Producto
<p>The P493 is a 4.0" (102 mm) 150 kV, 570 kJ (800 kHU) maximum anode heat content, rotating anode insert. This metal center section insert is designed for radiography, cineradiography, digital and film screen angiography procedures. The insert features a 12° rhenium-tungsten molybdenum target and is available with the following nominal focal spots:</p> <p style="text-align: center;">0.6 - 1.2 IEC 60336</p> <p>Reference Axis: Perpendicular to port face.</p> <p>This insert is intended for use in the Philips ROT 500/501 housings.</p>	<p>Le tube P493, à anode tournante de 102 mm, (4,0 pouces), 150 kV, avec une capacité calorifique maximale de 570 kJ (800 KUC). Cette section métallique centrale a été conçue pour les procédures radiographiques, cinéradiographiques, et angiographiques numérisés et sur film. L'anode composite en Rhénium-tungstène molybdène avec pente d'anode de 12° est disponible avec les combinaisons focales suivantes:</p> <p style="text-align: center;">0,6 - 1,2 CEI 60336</p> <p>Référence Axe: Perpendiculaire à la face de sortie.</p> <p>Ce tube est essentiellement destiné à être employé dans les gaines Philips ROT 500/501.</p>	<p>Die P493 ist eine 4.0" (102 mm) Doppelfokus Drehanoden-Röntgenröhre, mit einer Anoden Wärmespeicherkapazität von 570 kJ (800 kHU) und einer max. Spannungsfestigkeit von 150 kV. Diese Einsatz mit metallischem Mittelteil wurde für Radiographie-, Röntgenkinematographie-, digitale und Filmangiographieverfahren entwickelt. Der Rhenium,Wolfram, und Molybdän Anodenteller besitzt einen Winkel von 12°. Folgende Brennfleckkombination sind lieferbar:</p> <p style="text-align: center;">0.6 - 1.2 IEC 60336</p> <p>Referenz Axes: Senkrecht zum strahlenaustrittsfenster.</p> <p>Die Röntgenröhre ist für den Einbau in die Philips ROT 500/501 vorgesehen.</p>	<p>El P493 es un tubo de ánodo giratorio de 102 mm (4.0"), 150 kV, 570 kJ (800 kUC) diseñado específicamente para radiografía, cineradiográfica, digital, y procedimientos de angiografía con película de pantalla. Consta de un objetivo de renio, tungsteno y molibdeno con una pendiente de 12 grados. Disponible con las siguientes combinaciones de marcas focales:</p> <p style="text-align: center;">0.6 - 1.2 IEC 60336</p> <p>Referencia de Axes: Perpendicular a la abertura facial.</p> <p>Este tubo es diseñado, para uso en los encajes Philips ROT 500/501.</p>

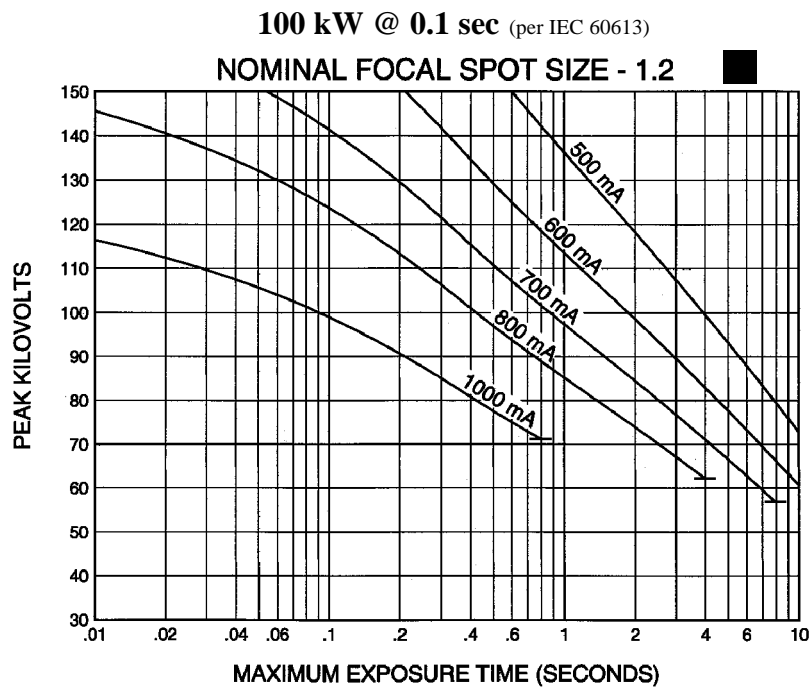
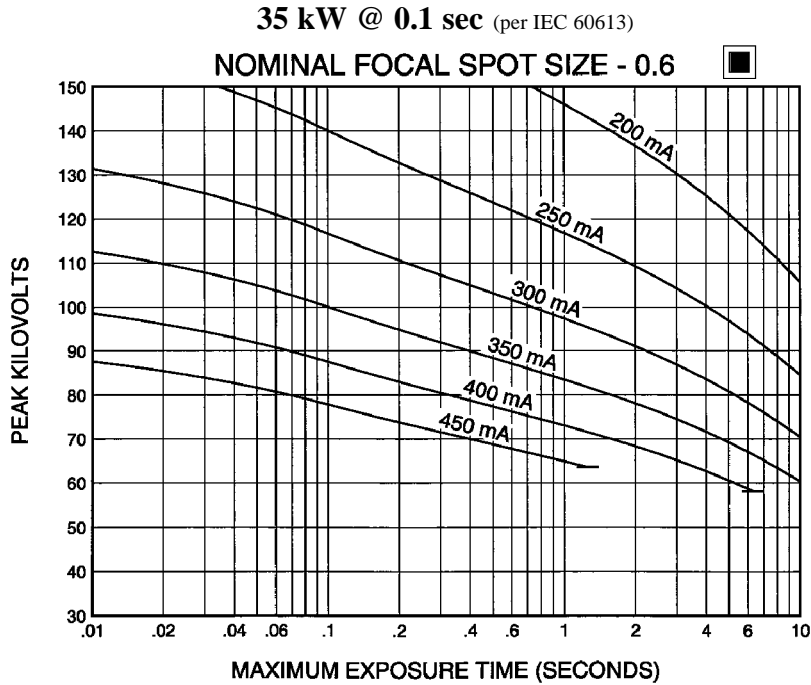
Manufactured by Varian Medical Systems
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 Technische Daten ohne Gewähr.
 Especificaciones sujetas a cambio sin previo aviso.

3 Ø Constant Potential

150 Hz

Abaques de Charge pour Pose Unique CEI 60613
Brennfleck - Belastungskurven IEC 60613
Diagramas de Exposición Radiográfica IEC 60613



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

Puissance calorifique nominale de l'anode: 40%, CEI 60613

Thermische Anoden bezugsleistung für eine speicherung von 40%. IEC 60613

Aproximadamente el poder de penetracion para obtener un almacenaje de calor del anodo de 40%. IEC 60613

CINERADIOGRAPHIC RATINGS

HOW TO USE CINERADIOGRAPHIC CHARTS

General: With the Cineradiographic rating chart we can determine the maximum allowable kW of the Cine pulse, or with a given kW determine maximum time in seconds the Cine run can progress.

The Most common way of using the charts is to determine maximum time of any expected Cine run and maximum duty factor. With a known duty factor and cine run time the kW can easily be determined.

Definition of Terms

Time in seconds: Total time of one Cine run, usually 5 to 12 seconds.

Duty Factor in Percent (DF%): Actual time during one second the x-ray tube is producing x-rays. If we select a 4 msec pulse width and 60 exposures per second the x-ray tube will be producing x-rays for a total of 240 msec each second or 24% of the time. The higher the DF number, the more load placed on the x-ray tube.

Peak Pulse Power: Peak energy in watts of any one Cine Pulse. Can be any combination of kV and mA allowed by Radiographic and Filament Emission curves.

Example: 80 kV at 400 mA equals

$$80,000 \text{ V} \times 0.4 \text{ A} = 32,000 \text{ W or } 32 \text{ kW}$$

USING THE CINE RATING CHARTS:

P493 150/180 Hz 3 Phase 1.2 Focal Spot

Example: Determine maximum kW allowed with the following known factors:
Maximum Pulse Width 4 msec
Exposures per Second 60
Maximum Cine Run Time ... 10 seconds

Calculate Duty Factor: (DF%)

$$DF\% = \frac{\text{Pulse Width (msec)} \times \text{Frames per Second}}{10}$$

$$DF\% = \frac{4 \text{ msec} \times 60 \text{ exp/sec}}{10} = \frac{240}{10} = 24\%$$

Refer to Rating Chart P493 150/180 Hz 3 Phase 1.2 Focal Spot:

At bottom of chart find 10 second line. Move vertically to intersection with 24% DF curve. Make a horizontal reference to left side of rating chart and note kW rating of 62.5 kW.

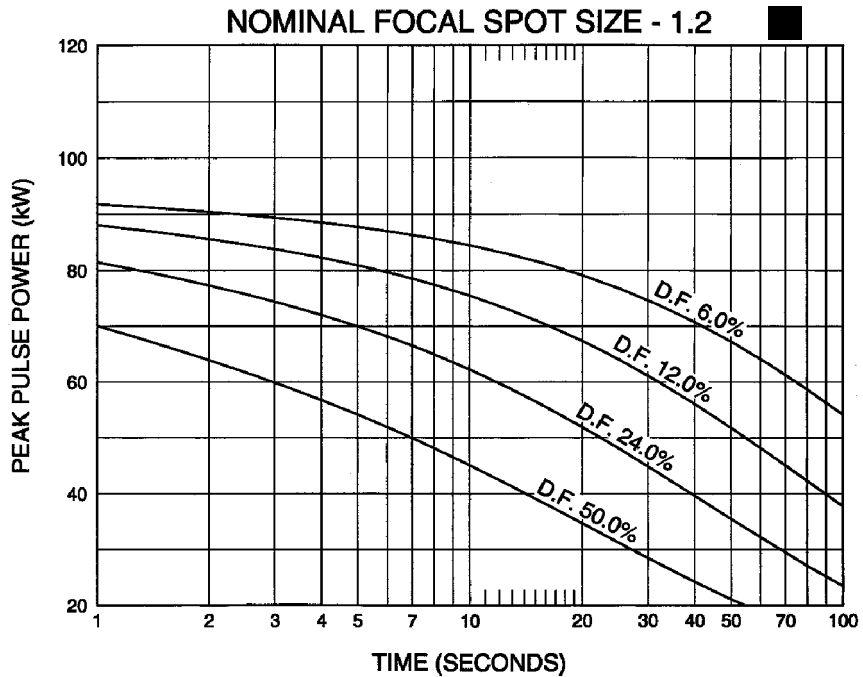
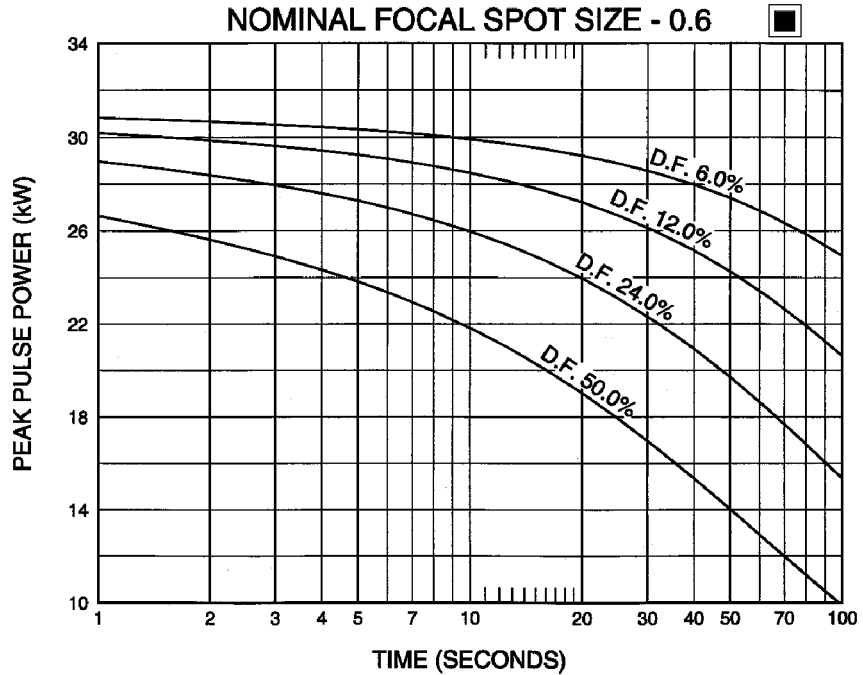
kW = kV x mA. The kW of the exposure can be any combination of mA and kV allowed by the Radiographic and Filament Emission Charts.

The Cine rating charts are usable to 100% anode heat storage. Exceeding 100% anode heat storage will cause anode track erosion with high risk of tube destruction.

3 Ø Constant Potential

150/180 Hz

Abaques d'Expositions CEI 60613
Belastungskurven IEC 60613
Diagramas de Exposición IEC 60613



Nominal anode input power for the anode heat content 70%. IEC 60613

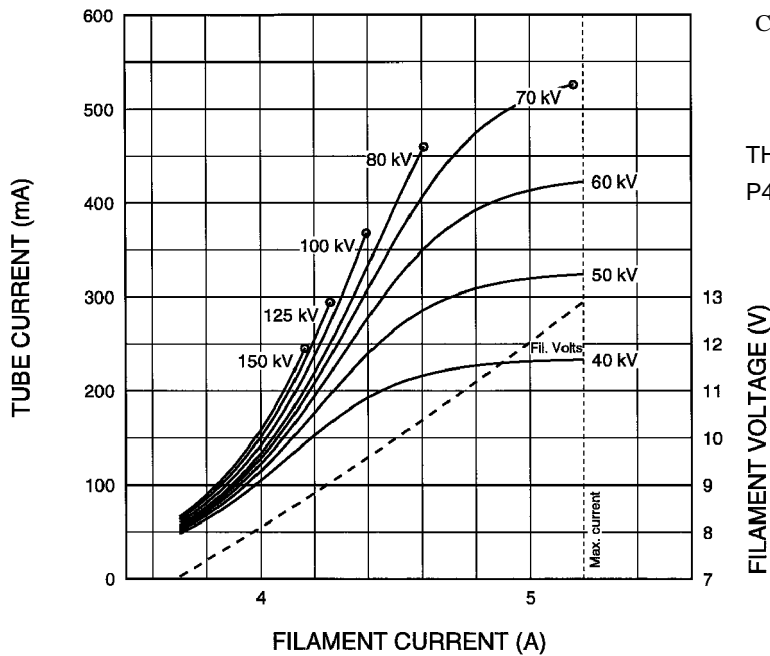
Puissance calorifique nominale de l'anode: 70%, CEI 60613

Thermische Anoden bezugsleistung für eine speicherung von 70%. IEC 60613

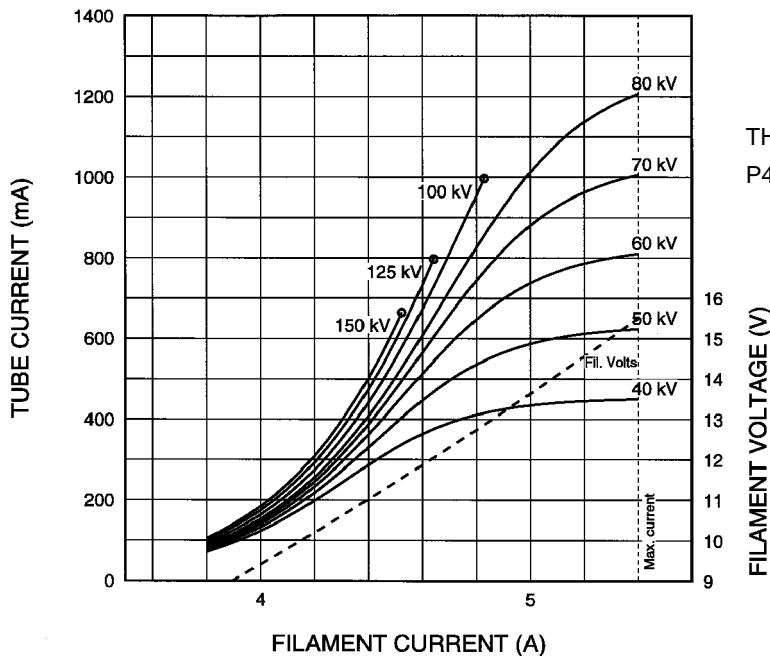
Aproximadamente el poder de penetracion para obtener un almacenaje de calor del anodo de 70%. IEC 60613

3 Ø FULL WAVE

Abaques d'Émissions des Filaments CEI 60613
Heizfadenemissionsdiagramm IEC 60613
Curvas de Emisión de los Filamentos IEC 60613



THREE PHASE EMISSION (± .15 A)
P493 0.6



THREE PHASE EMISSION (± .15 A)
P493 1.2

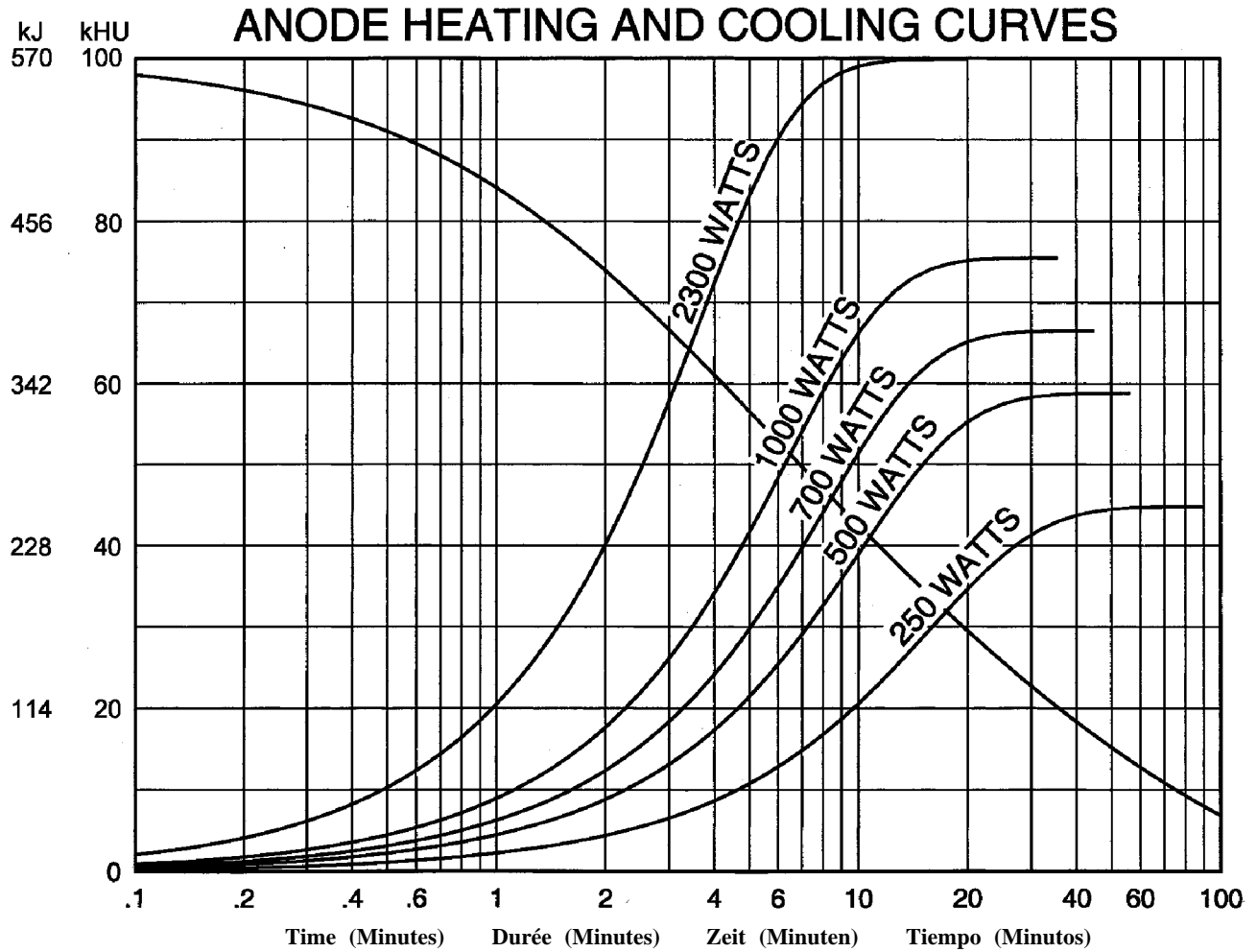
Note: When using these emission curves for trial exposures, refer to the power rating curves shown for maximum kV, tube emission, filament current, exposure time, and target speed.

Remarque: Lors de l'utilisation de ces abaques pour des expositions d'essai, référez-vous aux courbes maximales de kV, d'émission du filament, de temps d'exposition et de vitesse de rotation.

Anmerkung: Wenn Sie diese Emissionskurven für Testaufnahmen verwenden, beziehen Sie sich hierbei auf die entsprechenden Nennleistungskurven für max. kV-Werte, Röhrenemission, Heizstrom, und Anodendrehzahl.

Nota: Si utiliza estas curvas de emisión para exposiciones de prueba, refiérase a las curvas de gradación de potencia para el máximo de kV, tubo de emisión, corriente en los filamentos, tiempo de exposición, y a las curvas de velocidad del objetivo.

Abaques d' Échauffement et de Refroidissement de L' Anode
Anoden Aufheiz - und Abkühlkurven
Curvas de Calentamiento y Enfriamiento del Anodo



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