



Documentazione Tubo a raggi X  
Tube Documentation  
Documentation du Tube

# RTM 782 HS 0.6/1.2



Nr. di matricola  
Tube No.  
Nr de série

Questa documentazione deve essere fornita all'utilizzatore del complesso tubo-guaina  
The contents of this documentation must be transmitted to the user of the tube-assembly  
Le contenu de cette documentation doit être transmis à l'utilisateur de la gaine équipée

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**Dichiarazione di conformità**

Questo prodotto soddisfa i requisiti essenziali della direttiva 93/42/CEE in accordo alle norme IEC 60613, IEC 60336, IEC 60522, IEC 60601-1, IEC 60601-1-3, IEC 60601-2-28.

**Declaration of conformity**







This tube fulfils the essential requirements of the directive 93/42/EEC according to standard IEC 60613, IEC 60336, IEC 60522, IEC 60601-1, IEC 60601-1-3, IEC 60601-2-28.

**Confirmation de conformité**

Ce tube remplit les exigences essentielles de la directive 93/42/CEE en accord avec les normes IEC 60613, IEC 60336, IEC 60522, IEC 60601-1, IEC 60601-1-3, IEC 60601-2-28.



**Caratteristiche - Specifications - Spécifications**

Macchie focali Focal spot Foyer	 0.6  1.2	IEC 60336
Velocità di rotazione dell'anodo Anode speed Vitesse de l'anode	50 / 60 Hz      150 / 180 Hz 2450 / 2850 min <sup>-1</sup> 8500 / 10000 min <sup>-1</sup>	
Potenza anodica nominale Nominal anode input power Puissance anodique nominale	 20 kW      32 kW  50 kW      78 kW	IEC 60613 (1989)
Potenza anodica nominale in radiografia Nominal radiographic anode input power Puissance anodique radiographique nominale	 21 kW      33 kW  51 kW      76 kW	IEC 60613 (2010)
Diametro anodico Anode diameter Diamètre de l'anode	73 mm	
Materiale anodico Anode material Matériau de l'anode	RT-TZM *	
RT = Tungsteno + Renio (5-10%) , TZM = Molibdeno + Titanio (0.40-0.55 %) + Zirconio (0.06-0.12 %) * RT = Tungsten + Rhenium (5-10%) , TZM = Molybdenum + Titanium (0.40-0.55 %) + Zirconium (0.06-0.12 %) RT = Tungstène + Rhénium (5-10%) , TZM = Molybdène + Titane (0.40-0.55 %) + Zirconium (0.06-0.12 %)		
Angolo anodico Anode angle Pente de l'anode	12.5 °	
Campo di radiazione Radiation field Champ de rayonnement	a 70 cm 30 cm a 100 cm 43 cm	
Filtrazione permanente Permanent filtration Filtration permanent	0.7 mm Al / 75 kV	IEC 60522
Capacità termica anodica Maximum anode heat content Chaleur maximale accumulée dans l'anode	225 kJ      300 kHU	IEC 60613 (1989)
Dissipazione termica continua Continuous heat dissipation Dissipation thermique continue	750 W      60 000 HU/min	
Dissipazione termica massima Maximum heat dissipation Dissipation thermique maximale	1300 W      104 000 HU/min	
Alta tensione nominale Nominal X-ray tube voltage Haute tension nominale	150 kV	IEC 60613 (2010)
Massima corrente di filamento Max. filament current Courant dans le filament max.	5.4 A	

I dati forniti nella presente documentazione si intendono riferiti a:

The data indicated in this documentation refer to:

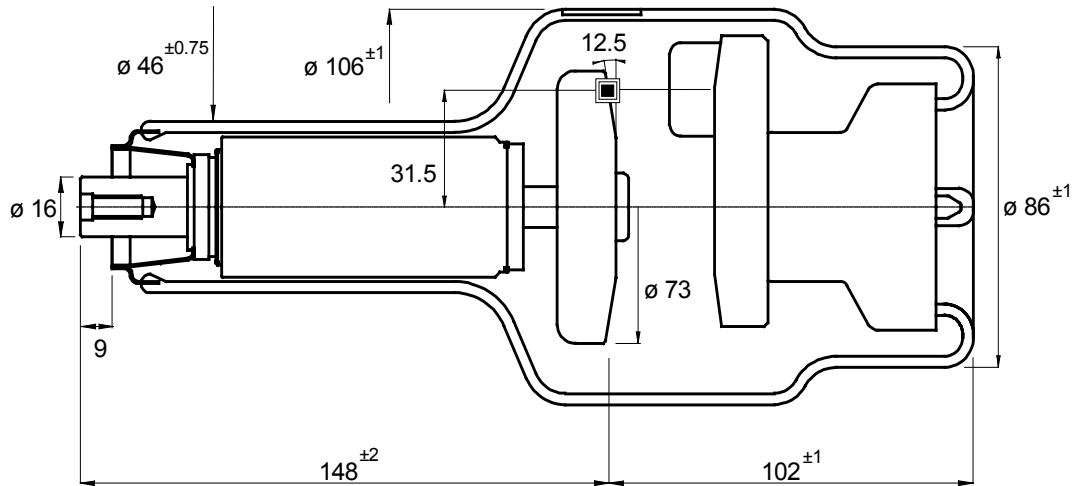
Les données indiquées dans cette documentation sont calculés pour:

Potenza anodica di equilibrio termico		% della capacità termica anodica	
Equivalent anode input power	100 W =	% of maximum anode heat content	38%
Puissance anodique d'équilibre thermique		% de chaleur max. accumulée dans l'anode	

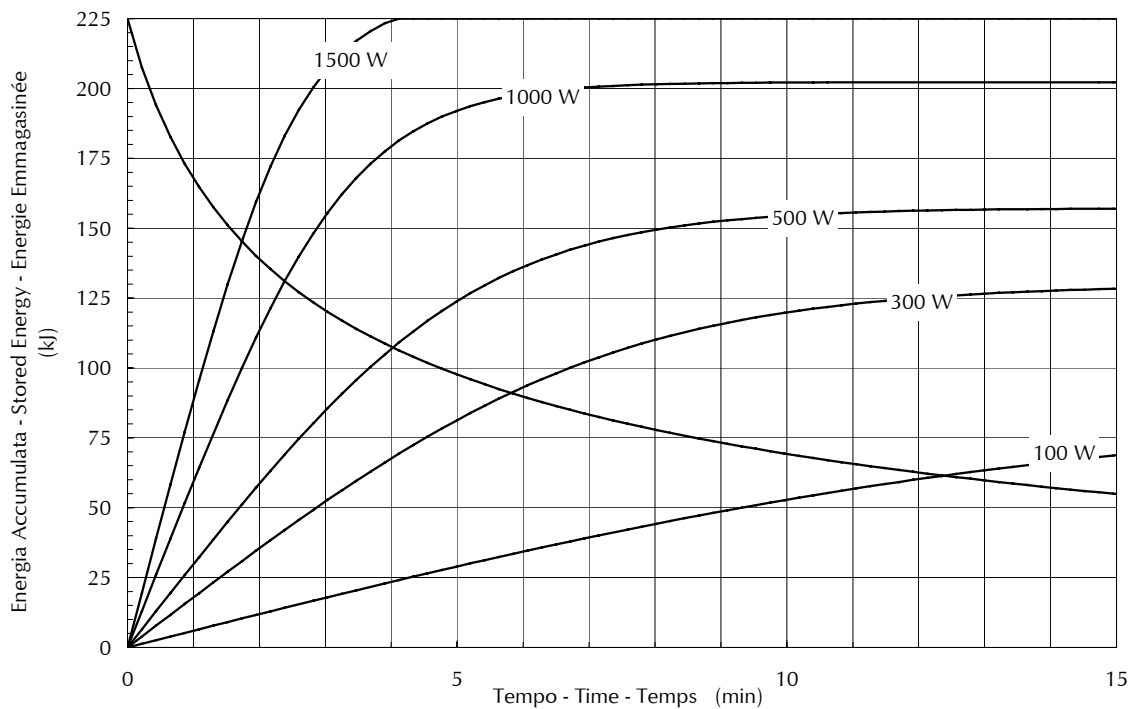


	trasporto e stoccaggio transportation and storage transport et stockage	funzionamento operation opération	
Limiti di temperatura Temperature limits Limites de température	-10°C ÷ +80°C	+10°C ÷ +40°C	
Limiti di umidità Humidity limits Limites d'humidité	max. 80%	max. 75%	
Limiti di pressione Pressure limits Limites de pression	500 ÷ 1060 hPa	700 ÷ 1060 hPa	

## Dimensioni - Dimension - Dimensions



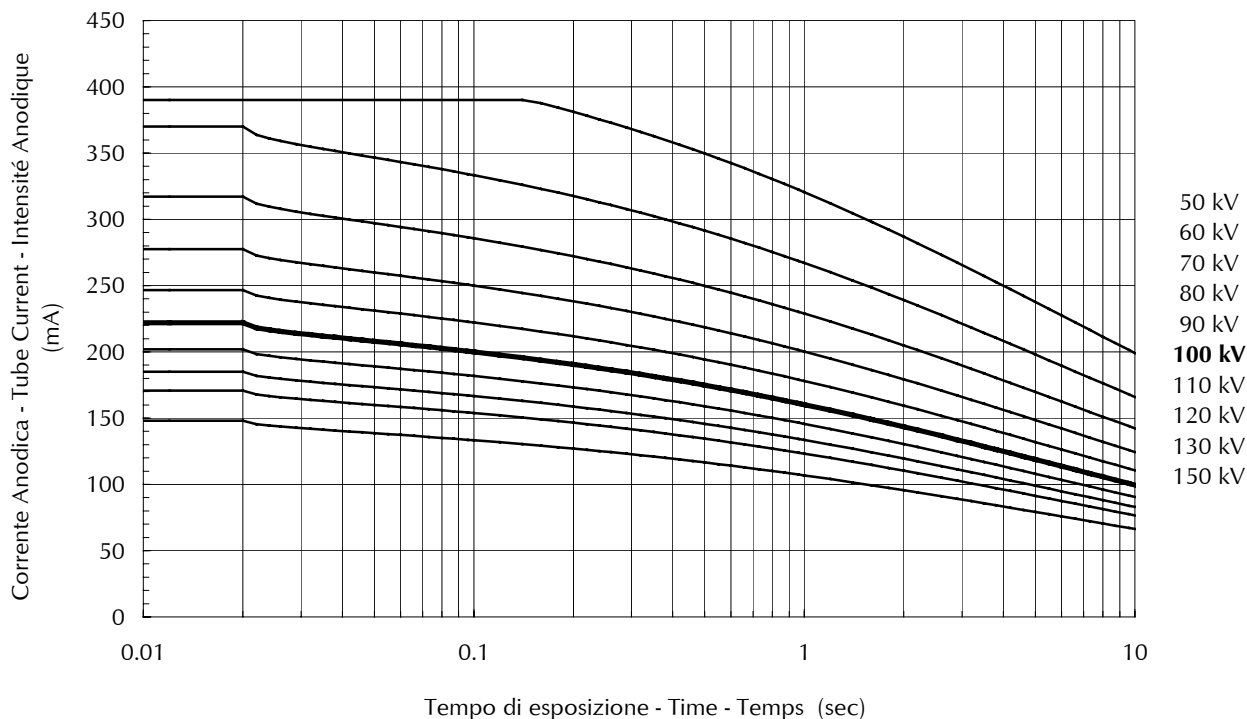
## Curve di riscaldamento e raffreddamento dell'anodo Anode heating and cooling curves Courbes d'échauffement et de refroidissement de l'anode IEC 60613 (1989)





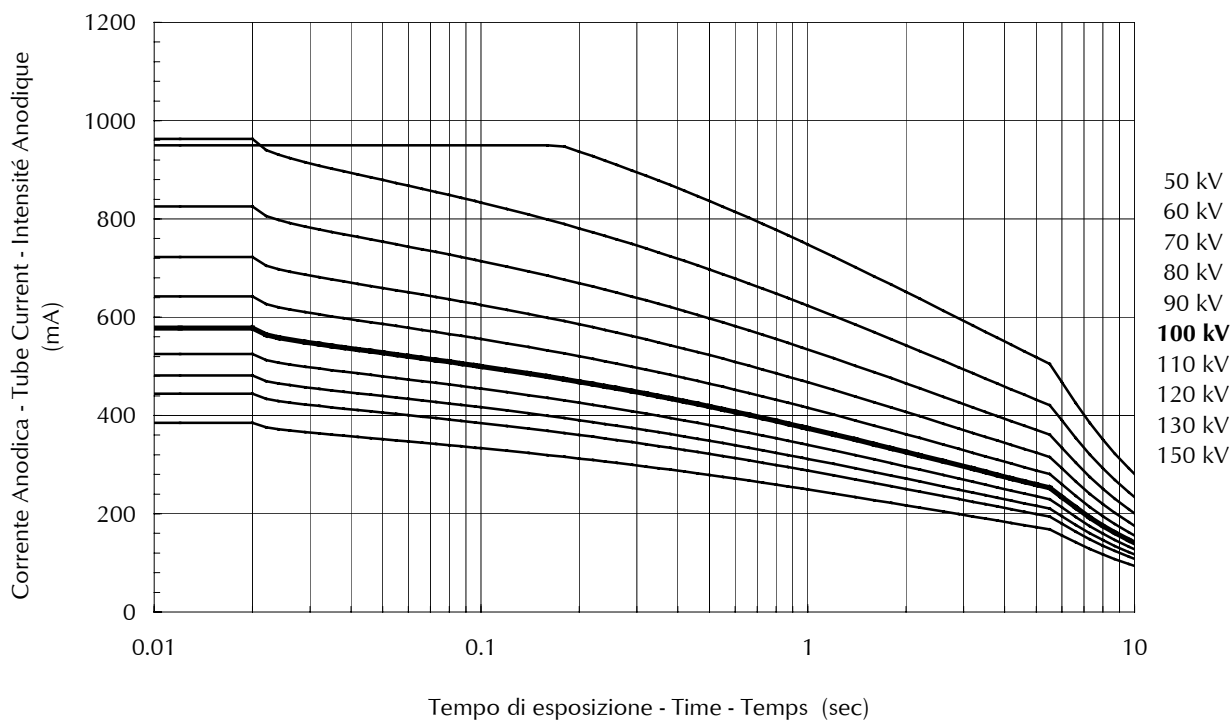
## CURVE DI CARICO SINGOLO - SINGLE LOAD RATING - ABAQUE DE CHARGE UNIQUE

▣ 0.6 - 3 Ø - 50 / 60 Hz - IEC 60613 (1989) (2010)



## CURVE DI CARICO SINGOLO - SINGLE LOAD RATING - ABAQUE DE CHARGE UNIQUE

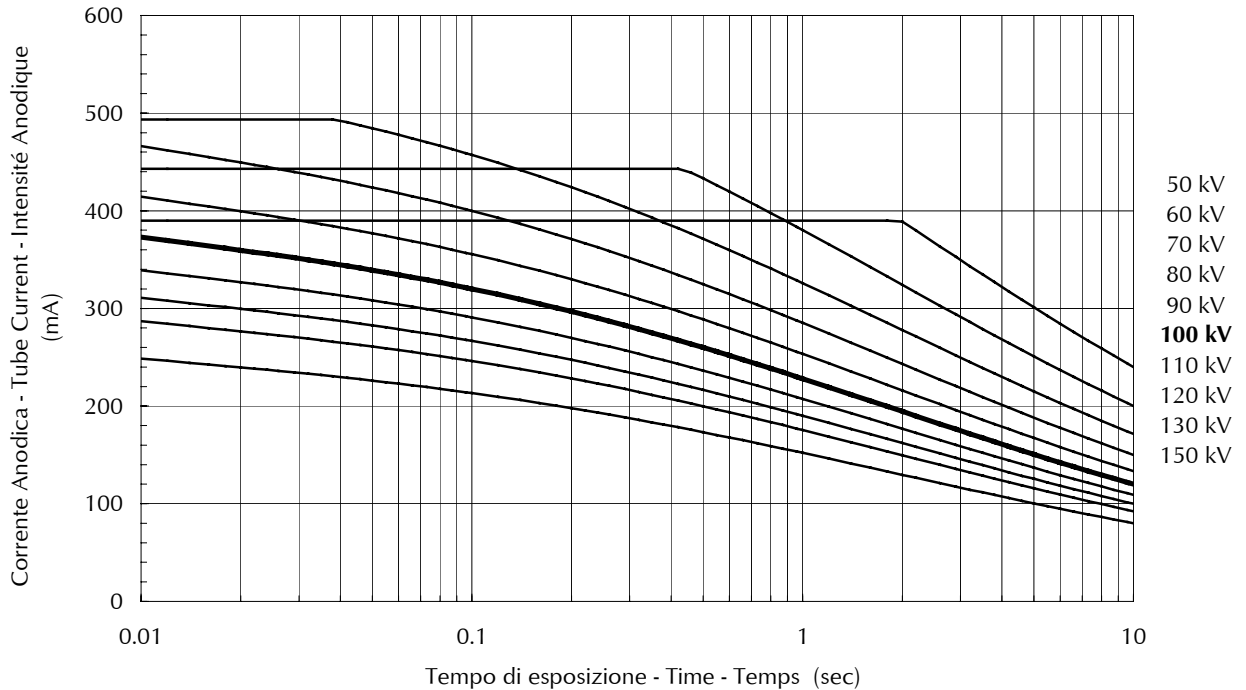
■ 1.2 - 3 Ø - 50 / 60 Hz - IEC 60613 (1989) (2010)





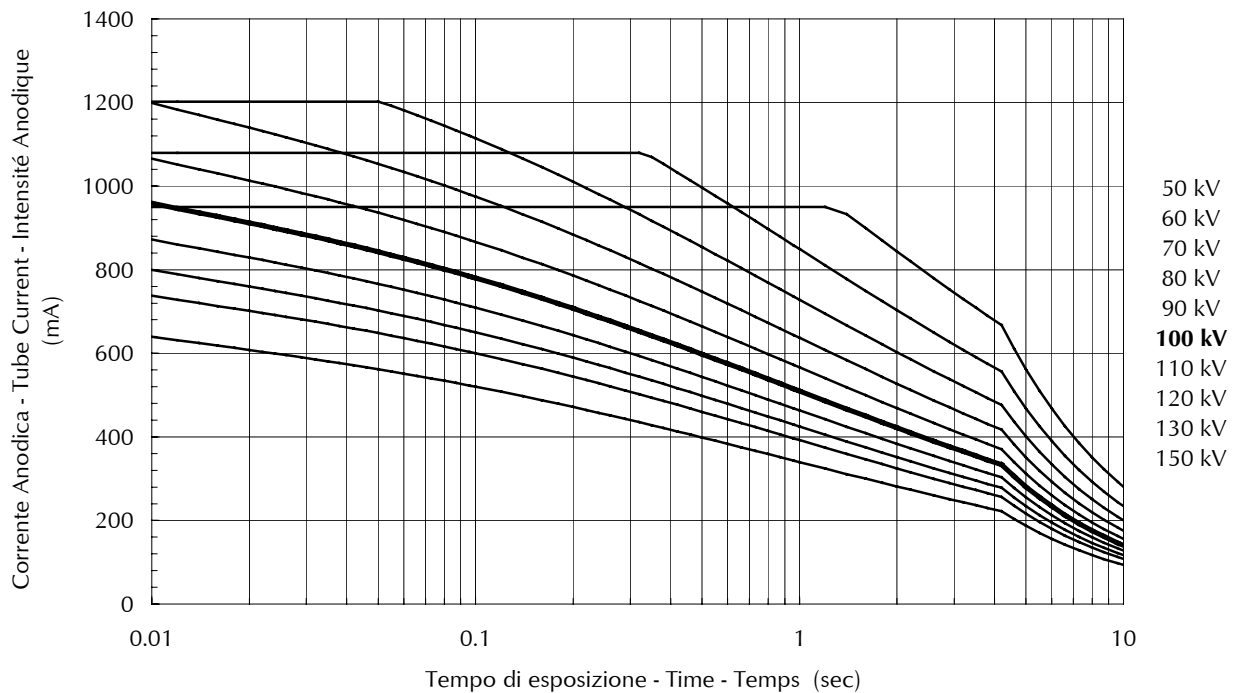
## CURVE DI CARICO SINGOLO - SINGLE LOAD RATING - ABAQUE DE CHARGE UNIQUE

▣ 0.6 - 3 Ø - 150 / 180 Hz - IEC 60613 (1989) (2010)



## CURVE DI CARICO SINGOLO - SINGLE LOAD RATING - ABAQUE DE CHARGE UNIQUE

■ 1.2 - 3 Ø - 150 / 180 Hz - IEC 60613 (1989) (2010)





**Abaco per carichi in serie - Serial load rating - Abaque de charges successives**

▣ **0.6 - 3 Ø - 50 / 60 Hz**

Potenza ammessa sul tubo in kW, per serie di n esposizioni, con frequenza z e durata di ogni esposizione in sec															n	
Anode input power as a function of n (N° of exposures in series), z (exp. rate per sec), the exposure time (sec)																
Puissance anodique en fonction de n (N° d'exp. de la séries), z (cadence d'exp. par sec), temps d'exposition (sec)																
z	0.010	0.020	0.030	0.040	0.050	0.060	0.080	0.100	0.120	0.140	0.160	0.180	0.200	0.220	0.250	
1	17.5	17.5	17.1	16.8	16.6	16.5	16.2	16.0	15.8	15.7	15.5	15.4	15.1	14.9	14.6	5
2	17.3	17.3	17.1	16.8	16.6	16.5	16.2	15.8	15.5	15.2	14.8	14.6	14.3	14.0	13.6	
3	17.2	17.2	17.0	16.8	16.5	16.3	15.9	15.4	15.1	14.7	14.3	14.0	13.7	13.4	12.9	
4	17.2	17.2	16.9	16.6	16.3	16.1	15.6	15.1	14.7	14.3	13.9	13.5	13.2	12.9	12.4	
5	17.1	17.1	16.8	16.5	16.2	15.9	15.4	14.9	14.4	14.0	13.6	13.2	12.8	-	-	
10	17.1	16.9	16.4	16.0	15.7	15.3	14.6	14.0	-	-	-	-	-	-	-	
15	17.1	16.7	16.2	15.7	15.3	14.8	-	-	-	-	-	-	-	-	-	
30	17.0	16.3	15.7	-	-	-	-	-	-	-	-	-	-	-	-	
1	17.3	17.3	17.1	16.8	16.6	16.5	16.2	15.8	15.5	15.2	14.8	14.5	14.3	14.0	13.6	10
2	17.2	17.2	16.9	16.6	16.3	16.1	15.6	15.1	14.7	14.3	13.9	13.5	13.2	12.8	12.4	
3	17.1	17.0	16.7	16.4	16.1	15.8	15.2	14.6	14.2	13.7	13.3	12.8	12.5	12.1	11.6	
4	17.1	16.9	16.5	16.2	15.8	15.5	14.8	14.3	13.7	13.2	12.8	12.3	11.9	11.5	11.0	
5	17.1	16.8	16.4	16.0	15.6	15.3	14.6	13.9	13.4	12.8	12.3	11.9	11.5	-	-	
10	17.1	16.5	15.9	15.4	14.9	14.4	13.6	12.8	-	-	-	-	-	-	-	
15	17.0	16.2	15.6	15.0	14.4	13.9	-	-	-	-	-	-	-	-	-	
30	16.7	15.7	14.8	-	-	-	-	-	-	-	-	-	-	-	-	
1	17.2	17.2	16.9	16.6	16.3	16.1	15.6	15.1	14.7	14.3	13.9	13.5	13.2	12.8	12.4	20
2	17.1	16.9	16.5	16.2	15.8	15.5	14.8	14.3	13.7	13.2	12.7	12.3	11.9	11.5	11.0	
3	17.1	16.8	16.3	15.9	15.4	15.0	14.3	13.7	13.0	12.5	12.0	11.5	11.1	10.7	10.1	
4	17.1	16.6	16.1	15.6	15.1	14.7	13.9	13.2	12.5	11.9	11.4	10.9	10.5	10.1	9.5	
5	17.1	16.5	15.9	15.4	14.9	14.4	13.6	12.8	12.1	11.5	11.0	10.5	10.0	-	-	
10	16.8	16.0	15.3	14.6	13.9	13.4	12.3	11.5	-	-	-	-	-	-	-	
15	16.6	15.7	14.8	14.0	13.3	12.7	-	-	-	-	-	-	-	-	-	
30	16.2	15.0	13.9	-	-	-	-	-	-	-	-	-	-	-	-	
1	17.1	16.9	16.5	16.2	15.8	15.5	14.8	14.3	13.7	13.2	12.7	12.3	11.9	11.5	11.0	40
2	17.1	16.6	16.1	15.6	15.1	14.7	13.9	13.2	12.5	11.9	11.4	10.9	10.5	10.1	9.5	
3	17.0	16.4	15.7	15.2	14.6	14.1	13.2	12.5	11.8	11.1	10.6	10.1	9.6	9.2	8.6	
4	16.9	16.2	15.5	14.8	14.3	13.7	12.7	11.9	11.2	10.5	9.9	9.4	9.0	8.5	8.0	
5	16.8	16.0	15.2	14.6	13.9	13.4	12.3	11.5	10.7	10.0	9.4	8.9	8.5	-	-	
10	16.5	15.4	14.4	13.6	12.8	12.1	11.0	10.0	-	-	-	-	-	-	-	
15	16.2	14.9	13.8	12.9	12.0	11.3	-	-	-	-	-	-	-	-	-	
30	15.7	14.0	12.7	-	-	-	-	-	-	-	-	-	-	-	-	
1	17.1	16.8	16.3	15.9	15.4	15.0	14.3	13.6	13.0	12.5	12.0	11.5	11.1	10.5	9.2	60
2	17.0	16.4	15.7	15.2	14.6	14.1	13.2	12.5	11.8	11.1	10.6	10.0	9.6	9.2	8.4	
3	16.9	16.1	15.4	14.7	14.1	13.5	12.5	11.7	10.9	10.3	9.7	9.2	8.7	8.3	7.7	
4	16.8	15.9	15.0	14.3	13.6	13.0	12.0	11.1	10.3	9.6	9.0	8.5	8.1	7.6	7.1	
5	16.6	15.7	14.8	14.0	13.3	12.6	11.5	10.6	9.8	9.1	8.5	8.0	7.6	-	-	
10	16.2	14.9	13.8	12.9	12.0	11.3	10.1	9.1	-	-	-	-	-	-	-	
15	15.9	14.4	13.2	12.1	11.2	10.5	-	-	-	-	-	-	-	-	-	
30	15.3	13.4	11.9	-	-	-	-	-	-	-	-	-	-	-	-	
1	17.1	16.6	16.1	15.6	15.1	14.7	13.9	13.2	12.5	11.9	11.4	10.2	9.2	8.4	7.4	80
2	16.9	16.2	15.5	14.8	14.3	13.7	12.7	11.9	11.2	10.5	9.9	9.0	8.1	7.4	6.5	
3	16.8	15.9	15.0	14.3	13.6	13.0	12.0	11.1	10.3	9.6	9.0	8.5	7.7	7.0	6.2	
4	16.6	15.6	14.7	13.9	13.2	12.5	11.4	10.5	9.7	9.0	8.4	7.9	7.4	6.9	6.1	
5	16.5	15.4	14.4	13.5	12.8	12.1	10.9	10.0	9.2	8.5	7.9	7.4	6.9	-	-	
10	16.0	14.6	13.4	12.3	11.5	10.7	9.4	8.5	-	-	-	-	-	-	-	
15	15.7	14.0	12.7	11.5	10.6	9.8	-	-	-	-	-	-	-	-	-	
30	14.9	12.9	11.3	-	-	-	-	-	-	-	-	-	-	-	-	
1	17.1	16.5	15.9	15.4	14.9	14.4	13.5	12.8	12.1	11.1	9.7	8.7	7.8	7.1	6.2	100
2	16.8	16.0	15.2	14.6	13.9	13.4	12.3	11.5	10.7	9.6	8.4	7.5	6.7	6.1	5.4	
3	16.6	15.7	14.8	14.0	13.3	12.6	11.5	10.6	9.8	9.1	7.9	7.0	6.3	5.8	5.1	
4	16.5	15.4	14.4	13.5	12.8	12.1	10.9	10.0	9.2	8.5	7.7	6.8	6.2	5.6	4.9	
5	16.3	15.1	14.1	13.2	12.4	11.7	10.5	9.5	8.7	8.0	7.4	6.7	6.1	-	-	
10	15.8	14.3	13.0	11.9	11.0	10.2	9.0	8.0	-	-	-	-	-	-	-	
15	15.4	13.7	12.2	11.1	10.1	9.3	-	-	-	-	-	-	-	-	-	
30	14.6	12.5	10.8	-	-	-	-	-	-	-	-	-	-	-	-	
1	17.0	16.2	15.5	14.9	14.3	13.8	12.9	11.8	9.9	8.5	7.4	6.6	5.9	5.4	4.7	150
2	16.6	15.7	14.8	14.0	13.3	12.6	11.5	9.7	8.1	6.9	6.0	5.4	4.8	4.4	3.9	
3	16.4	15.2	14.2	13.4	12.6	11.9	10.7	8.9	7.5	6.4	5.6	5.0	4.5	4.1	3.6	
4	16.2	14.9	13.8	12.9	12.0	11.3	10.1	8.6	7.1	6.1	5.4	4.8	4.3	3.9	3.4	
5	16.1	14.6	13.5	12.5	11.6	10.8	9.6	8.4	7.0	6.0	5.2	4.6	4.2	-	-	
10	15.4	13.6	12.2	11.1	10.1	9.3	8.1	7.1	-	-	-	-	-	-	-	
15	15.0	13.0	11.4	10.2	9.2	8.4	-	-	-	-	-	-	-	-	-	
30	14.1	11.7	10.0	-	-	-	-	-	-	-	-	-	-	-	-	
1	16.6	15.7	14.8	14.0	13.3	12.6	10.1	8.1	6.8	5.8	5.1	4.5	4.1	3.7	3.2	300
2	16.2	14.9	13.8	12.9	11.8	9.9	7.4	5.9	4.9	4.2	3.7	3.3	3.0	2.7	2.4	
3	15.9	14.4	13.2	12.1	10.4	8.7	6.5	5.2	4.3	3.7	3.2	2.9	2.6	2.4	2.1	
4	15.7	14.0	12.6	11.5	9.7	8.1	6.0	4.8	4.0	3.5	3.0	2.7	2.4	2.2	1.9	
5	15.4	13.6	12.2	11.1	9.2	7.7	5.8	4.6	3.8	3.3	2.9	2.6	2.3	-	-	
10	14.6	12.5	10.8	9.6	8.4	7.0	5.2	4.2	-	-	-	-	-	-	-	
15	14.1	11.7	10.0	8.7	7.7	6.7	-	-	-	-	-	-	-	-	-	
30	13.0	10.2	8.4	-	-	-	-	-	-	-	-	-	-	-	-	





**Abaco per carichi in serie - Serial load rating - Abaque de charges successives**  
**■ 1.2 - 3 Ø - 50 / 60 Hz**

Potenza ammessa sul tubo in kW, per serie di n esposizioni, con frequenza z e durata di ogni esposizione in sec																n
Anode input power as a function of n (N° of exposures in series), z (exp. rate per sec), the exposure time (sec)																
Puissance anodique en fonction de n (N° d'exp. de la série), z (cadence d'exp. par sec), temps d'exposition (sec)																
z	0.010	0.020	0.030	0.040	0.050	0.060	0.080	0.100	0.120	0.140	0.160	0.180	0.200	0.220	0.250	
1	45.1	45.1	43.8	42.9	42.2	41.6	40.7	40.0	39.4	38.8	38.3	37.9	37.1	36.4	35.4	5
2	44.7	44.7	43.8	42.9	42.2	41.6	40.6	39.4	38.3	37.2	36.2	35.2	34.3	33.5	32.2	
3	44.3	44.3	43.5	42.6	41.8	41.0	39.5	38.1	36.9	35.7	34.5	33.5	32.5	31.5	30.2	
4	44.1	44.1	43.1	42.1	41.2	40.3	38.7	37.2	35.8	34.4	33.2	32.1	31.1	30.1	28.7	
5	43.8	43.8	42.7	41.7	40.7	39.7	38.0	36.3	34.8	33.5	32.2	31.0	29.9	-	-	
10	43.8	43.0	41.5	40.1	38.8	37.6	35.4	33.5	-	-	-	-	-	-	-	
15	43.8	42.3	40.6	39.0	37.5	36.2	-	-	-	-	-	-	-	-	-	
30	43.5	41.0	38.9	-	-	-	-	-	-	-	-	-	-	-	-	
1	44.7	44.7	43.8	42.9	42.2	41.6	40.6	39.4	38.2	37.2	36.2	35.2	34.3	33.4	32.2	10
2	44.1	44.1	43.1	42.1	41.2	40.3	38.6	37.1	35.7	34.4	33.2	32.1	31.0	30.0	28.6	
3	43.8	43.6	42.4	41.3	40.2	39.2	37.3	35.5	34.0	32.5	31.2	30.0	28.9	27.8	26.4	
4	43.8	43.2	41.9	40.6	39.4	38.3	36.2	34.3	32.6	31.1	29.7	28.5	27.3	26.2	24.8	
5	43.8	42.9	41.4	40.0	38.7	37.5	35.3	33.3	31.6	30.0	28.5	27.2	26.0	-	-	
10	43.8	41.7	39.7	38.0	36.3	34.8	32.2	29.9	-	-	-	-	-	-	-	
15	43.4	40.8	38.5	36.5	34.7	33.1	-	-	-	-	-	-	-	-	-	
30	42.3	39.0	36.2	-	-	-	-	-	-	-	-	-	-	-	-	
1	44.1	44.1	43.1	42.1	41.2	40.3	38.6	37.1	35.7	34.4	33.2	32.0	30.3	27.5	24.2	20
2	43.8	43.2	41.9	40.6	39.4	38.2	36.2	34.3	32.6	31.1	29.7	28.4	27.3	26.2	23.3	
3	43.8	42.6	41.0	39.5	38.1	36.8	34.5	32.4	30.6	29.0	27.5	26.2	25.0	23.9	22.4	
4	43.8	42.1	40.3	38.6	37.1	35.7	33.2	31.0	29.1	27.4	25.9	24.5	23.3	22.2	20.7	
5	43.8	41.7	39.7	37.9	36.3	34.8	32.1	29.8	27.9	26.1	24.6	23.2	22.0	-	-	
10	42.9	40.0	37.5	35.3	33.3	31.6	28.5	26.0	-	-	-	-	-	-	-	
15	42.2	38.9	36.0	33.5	31.4	29.5	-	-	-	-	-	-	-	-	-	
30	40.8	36.5	33.1	-	-	-	-	-	-	-	-	-	-	-	-	
1	43.8	43.2	41.9	40.6	39.4	38.2	36.2	32.4	27.0	23.2	20.3	18.0	16.2	14.7	13.0	40
2	43.8	42.1	40.3	38.6	37.1	35.7	33.2	30.3	25.2	21.6	18.9	16.8	15.1	13.8	12.1	
3	43.6	41.3	39.2	37.2	35.5	34.0	31.2	28.8	24.6	21.1	18.5	16.4	14.8	13.4	11.8	
4	43.2	40.6	38.2	36.2	34.3	32.6	29.7	27.3	24.3	20.8	18.2	16.2	14.6	13.3	11.7	
5	42.9	40.0	37.5	35.3	33.3	31.5	28.5	26.0	23.9	20.7	18.1	16.1	14.5	-	-	
10	41.7	37.9	34.8	32.1	29.8	27.9	24.6	22.0	-	-	-	-	-	-	-	
15	40.8	36.4	32.9	30.1	27.7	25.6	-	-	-	-	-	-	-	-	-	
30	38.9	33.5	29.5	-	-	-	-	-	-	-	-	-	-	-	-	
1	43.8	42.6	41.0	39.5	38.1	36.8	28.8	23.1	19.2	16.5	14.4	12.8	11.5	10.5	9.2	60
2	43.6	41.3	39.1	37.2	35.5	33.9	26.1	20.9	17.4	14.9	13.1	11.6	10.5	9.5	8.4	
3	43.1	40.3	37.8	35.7	33.8	32.0	25.2	20.2	16.8	14.4	12.6	11.2	10.1	9.2	8.1	
4	42.6	39.5	36.8	34.5	32.4	30.6	24.8	19.8	16.5	14.2	12.4	11.0	9.9	9.0	7.9	
5	42.2	38.8	36.0	33.5	31.3	29.4	24.5	19.6	16.3	14.0	12.2	10.9	9.8	-	-	
10	40.7	36.4	32.9	30.0	27.6	25.6	22.3	19.2	-	-	-	-	-	-	-	
15	39.7	34.8	30.9	27.9	25.3	23.2	-	-	-	-	-	-	-	-	-	
30	37.5	31.6	27.2	-	-	-	-	-	-	-	-	-	-	-	-	
1	43.8	42.1	40.3	38.6	36.8	30.7	23.0	18.4	15.3	13.1	11.5	10.2	9.2	8.4	7.4	80
2	43.2	40.6	38.2	36.2	32.4	27.0	20.3	16.2	13.5	11.6	10.1	9.0	8.1	7.4	6.5	
3	42.6	39.5	36.8	34.5	31.0	25.8	19.4	15.5	12.9	11.1	9.7	8.6	7.7	7.0	6.2	
4	42.1	38.6	35.7	33.2	30.3	25.2	18.9	15.1	12.6	10.8	9.5	8.4	7.6	6.9	6.1	
5	41.6	37.9	34.8	32.1	29.8	24.9	18.6	14.9	12.4	10.7	9.3	8.3	7.5	-	-	
10	40.0	35.3	31.5	28.5	26.0	23.9	18.1	14.5	-	-	-	-	-	-	-	
15	38.8	33.5	29.4	26.2	23.7	21.6	-	-	-	-	-	-	-	-	-	
30	36.4	30.1	25.6	-	-	-	-	-	-	-	-	-	-	-	-	
1	43.8	41.6	39.7	37.9	31.2	26.0	19.5	15.6	13.0	11.1	9.7	8.7	7.8	7.1	6.2	100
2	42.9	40.0	37.5	33.5	26.8	22.4	16.8	13.4	11.2	9.6	8.4	7.5	6.7	6.1	5.4	
3	42.2	38.8	35.9	31.7	25.4	21.1	15.9	12.7	10.6	9.1	7.9	7.0	6.3	5.8	5.1	
4	41.6	37.9	34.8	30.8	24.6	20.5	15.4	12.3	10.3	8.8	7.7	6.8	6.2	5.6	4.9	
5	41.2	37.1	33.8	30.3	24.2	20.2	15.1	12.1	10.1	8.6	7.6	6.7	6.1	-	-	
10	39.4	34.3	30.4	27.3	23.3	19.4	14.6	11.7	-	-	-	-	-	-	-	
15	38.1	32.4	28.2	25.0	22.4	19.2	-	-	-	-	-	-	-	-	-	
30	35.5	28.9	24.3	-	-	-	-	-	-	-	-	-	-	-	-	
1	43.3	40.7	38.5	29.6	23.7	19.7	14.8	11.8	9.9	8.5	7.4	6.6	5.9	5.4	4.7	150
2	42.2	38.8	32.2	24.2	19.3	16.1	12.1	9.7	8.1	6.9	6.0	5.4	4.8	4.4	3.9	
3	41.4	37.5	29.8	22.4	17.9	14.9	11.2	8.9	7.5	6.4	5.6	5.0	4.5	4.1	3.6	
4	40.7	36.4	28.6	21.4	17.2	14.3	10.7	8.6	7.1	6.1	5.4	4.8	4.3	3.9	3.4	
5	40.2	35.5	27.9	20.9	16.7	13.9	10.5	8.4	7.0	6.0	5.2	4.6	4.2	-	-	
10	38.1	32.4	26.4	19.8	15.8	13.2	9.9	7.9	-	-	-	-	-	-	-	
15	36.7	30.4	25.9	19.4	15.6	13.0	-	-	-	-	-	-	-	-	-	
30	33.8	26.6	22.0	-	-	-	-	-	-	-	-	-	-	-	-	
1	42.2	38.8	27.0	20.3	16.2	13.5	10.1	8.1	6.8	5.8	5.1	4.5	4.1	3.7	3.2	300
2	40.7	29.6	19.7	14.8	11.8	9.9	7.4	5.9	4.9	4.2	3.7	3.3	3.0	2.7	2.4	
3	39.7	26.0	17.3	13.0	10.4	8.7	6.5	5.2	4.3	3.7	3.2	2.9	2.6	2.4	2.1	
4	38.8	24.2	16.1	12.1	9.7	8.1	6.0	4.8	4.0	3.5	3.0	2.7	2.4	2.2	1.9	
5	38.1	23.1	15.4	11.5	9.2	7.7	5.8	4.6	3.8	3.3	2.9	2.6	2.3	-	-	
10	35.5	20.9	13.9	10.5	8.4	7.0	5.2	4.2	-	-	-	-	-	-	-	
15	33.8	20.2	13.4	10.1	8.1	6.7	-	-	-	-	-	-	-	-	-	
30	30.4	19.4	13.0	-	-	-	-	-	-	-	-	-	-	-	-	



**Abaco per carichi in serie - Serial load rating - Abaque de charges successives**

▣ **0.6 - 3 Ø - 150 / 180 Hz**

Potenza ammessa sul tubo in kW, per serie di n esposizioni, con frequenza z e durata di ogni esposizione in sec																
Anode input power as a function of n (N° of exposures in series), z (exp. rate per sec), the exposure time (sec)																
Puissance anodique en fonction de n (N° d'exp. de la séries), z (cadence d'exp. par sec), temps d'exposition (sec)																
z	0.010	0.020	0.030	0.040	0.050	0.060	0.080	0.100	0.120	0.140	0.160	0.180	0.200	0.220	0.250	n
1	29.8	28.8	28.1	27.6	27.1	26.8	26.1	25.6	25.1	24.7	24.4	24.0	23.7	23.1	22.3	5
2	29.8	28.8	28.1	27.6	27.1	26.8	26.1	25.5	24.6	23.7	22.9	22.2	21.5	20.9	20.0	
3	29.8	28.8	28.1	27.6	27.1	26.8	25.6	24.5	23.4	22.5	21.7	20.9	20.1	19.4	18.5	
4	29.8	28.8	28.1	27.6	26.9	26.2	24.9	23.7	22.6	21.6	20.7	19.8	19.1	18.4	17.4	
5	29.8	28.8	28.1	27.3	26.5	25.7	24.3	23.0	21.9	20.8	19.9	19.0	18.2	-	-	
10	29.7	28.3	27.1	26.0	24.9	24.0	22.3	20.8	-	-	-	-	-	-	-	
15	29.4	27.8	26.4	25.1	23.9	22.8	-	-	-	-	-	-	-	-	-	
30	28.7	26.6	24.8	-	-	-	-	-	-	-	-	-	-	-	-	
1	29.8	28.8	28.1	27.6	27.1	26.8	26.1	25.5	24.6	23.7	22.9	22.2	21.5	20.9	20.0	10
2	29.8	28.8	28.1	27.6	26.9	26.2	24.9	23.7	22.6	21.6	20.7	19.8	19.1	18.4	17.4	
3	29.8	28.8	27.9	27.0	26.1	25.3	23.8	22.4	21.3	20.2	19.2	18.3	17.5	16.8	15.8	
4	29.8	28.6	27.5	26.4	25.5	24.6	22.9	21.5	20.3	19.1	18.1	17.2	16.4	15.7	14.7	
5	29.7	28.3	27.1	26.0	24.9	24.0	22.2	20.8	19.5	18.3	17.3	16.4	15.6	-	-	
10	29.1	27.3	25.7	24.3	23.0	21.9	19.9	18.2	-	-	-	-	-	-	-	
15	28.7	26.6	24.7	23.2	21.8	20.5	-	-	-	-	-	-	-	-	-	
30	27.8	25.1	22.8	-	-	-	-	-	-	-	-	-	-	-	-	
1	29.8	28.8	28.1	27.6	26.9	26.2	24.9	23.7	22.6	21.6	20.7	19.8	19.1	18.3	17.4	20
2	29.8	28.6	27.5	26.4	25.5	24.6	22.9	21.5	20.3	19.1	18.1	17.2	16.4	15.7	14.7	
3	29.6	28.1	26.8	25.6	24.5	23.4	21.6	20.1	18.8	17.6	16.6	15.7	14.8	14.1	13.1	
4	29.3	27.7	26.2	24.9	23.7	22.6	20.7	19.1	17.7	16.5	15.5	14.5	13.7	13.0	12.0	
5	29.1	27.3	25.7	24.3	23.0	21.9	19.9	18.2	16.8	15.6	14.6	13.7	12.9	-	-	
10	28.3	26.0	24.0	22.2	20.8	19.5	17.3	15.6	-	-	-	-	-	-	-	
15	27.8	25.0	22.8	20.9	19.3	17.9	-	-	-	-	-	-	-	-	-	
30	26.6	23.2	20.5	-	-	-	-	-	-	-	-	-	-	-	-	
1	29.8	28.6	27.5	26.4	25.5	24.6	22.9	21.5	20.3	19.1	18.1	17.2	16.2	14.7	13.0	40
2	29.3	27.7	26.2	24.9	23.7	22.6	20.7	19.1	17.7	16.5	15.5	14.5	13.7	13.0	12.0	
3	28.9	27.0	25.3	23.8	22.4	21.3	19.2	17.5	16.1	14.9	13.9	13.0	12.2	11.5	10.6	
4	28.6	26.4	24.6	22.9	21.5	20.3	18.1	16.4	15.0	13.8	12.8	11.9	11.1	10.5	9.6	
5	28.3	26.0	24.0	22.2	20.8	19.5	17.3	15.6	14.1	13.0	12.0	11.1	10.4	-	-	
10	27.3	24.3	21.9	19.9	18.2	16.8	14.6	12.9	-	-	-	-	-	-	-	
15	26.6	23.1	20.5	18.4	16.7	15.3	-	-	-	-	-	-	-	-	-	
30	25.0	20.9	17.9	-	-	-	-	-	-	-	-	-	-	-	-	
1	29.6	28.1	26.8	25.6	24.4	23.4	21.6	20.1	18.8	16.5	14.4	12.8	11.5	10.5	9.2	60
2	28.9	27.0	25.3	23.8	22.4	21.3	19.2	17.5	16.1	14.9	13.1	11.6	10.5	9.5	8.4	
3	28.5	26.2	24.2	22.6	21.1	19.8	17.7	16.0	14.5	13.4	12.3	11.2	10.1	9.2	8.1	
4	28.1	25.6	23.4	21.6	20.1	18.8	16.6	14.8	13.4	12.3	11.3	10.5	9.7	9.0	7.9	
5	27.8	25.0	22.8	20.9	19.3	17.9	15.7	14.0	12.6	11.4	10.5	9.7	9.0	-	-	
10	26.6	23.1	20.5	18.4	16.7	15.3	13.0	11.4	-	-	-	-	-	-	-	
15	25.7	21.9	19.0	16.8	15.1	13.7	-	-	-	-	-	-	-	-	-	
30	24.0	19.5	16.4	-	-	-	-	-	-	-	-	-	-	-	-	
1	29.3	27.7	26.2	24.9	23.7	22.6	20.7	18.4	15.3	13.1	11.5	10.2	9.2	8.4	7.4	80
2	28.6	26.4	24.6	22.9	21.5	20.3	18.1	16.2	13.5	11.6	10.1	9.0	8.1	7.4	6.5	
3	28.1	25.6	23.4	21.6	20.1	18.8	16.6	14.8	12.9	11.1	9.7	8.6	7.7	7.0	6.2	
4	27.7	24.9	22.6	20.7	19.1	17.7	15.5	13.7	12.3	10.8	9.5	8.4	7.6	6.9	6.1	
5	27.3	24.3	21.9	19.9	18.2	16.8	14.6	12.9	11.5	10.4	9.3	8.3	7.5	-	-	
10	26.0	22.2	19.5	17.3	15.6	14.1	12.0	10.4	-	-	-	-	-	-	-	
15	25.0	20.9	17.9	15.7	14.0	12.6	-	-	-	-	-	-	-	-	-	
30	23.1	18.4	15.3	-	-	-	-	-	-	-	-	-	-	-	-	
1	29.1	27.3	25.7	24.3	23.0	21.9	19.5	15.6	13.0	11.1	9.7	8.7	7.8	7.1	6.2	100
2	28.3	26.0	24.0	22.2	20.8	19.4	16.8	13.4	11.2	9.6	8.4	7.5	6.7	6.1	5.4	
3	27.8	25.0	22.8	20.9	19.3	17.9	15.7	12.7	10.6	9.1	7.9	7.0	6.3	5.8	5.1	
4	27.3	24.3	21.9	19.9	18.2	16.8	14.6	12.3	10.3	8.8	7.7	6.8	6.2	5.6	4.9	
5	26.9	23.7	21.1	19.1	17.4	16.0	13.7	12.0	10.1	8.6	7.6	6.7	6.1	-	-	
10	25.5	21.5	18.6	16.4	14.7	13.3	11.1	9.6	-	-	-	-	-	-	-	
15	24.5	20.1	17.1	14.8	13.1	11.8	-	-	-	-	-	-	-	-	-	
30	22.4	17.5	14.4	-	-	-	-	-	-	-	-	-	-	-	-	
1	28.7	26.6	24.7	23.1	21.7	19.7	14.8	11.8	9.9	8.5	7.4	6.6	5.9	5.4	4.7	150
2	27.8	25.0	22.8	20.9	19.3	16.1	12.1	9.7	8.1	6.9	6.0	5.4	4.8	4.4	3.9	
3	27.1	24.0	21.5	19.4	17.8	14.9	11.2	8.9	7.5	6.4	5.6	5.0	4.5	4.1	3.6	
4	26.6	23.1	20.5	18.4	16.7	14.3	10.7	8.6	7.1	6.1	5.4	4.8	4.3	3.9	3.4	
5	26.1	22.4	19.7	17.5	15.8	13.9	10.5	8.4	7.0	6.0	5.2	4.6	4.2	-	-	
10	24.4	20.1	17.1	14.8	13.1	11.8	9.7	7.9	-	-	-	-	-	-	-	
15	23.3	18.6	15.5	13.3	11.6	10.3	-	-	-	-	-	-	-	-	-	
30	21.1	16.0	12.8	-	-	-	-	-	-	-	-	-	-	-	-	
1	27.8	25.0	22.8	20.3	16.2	13.5	10.1	8.1	6.8	5.8	5.1	4.5	4.1	3.7	3.2	300
2	26.6	23.1	19.7	14.8	11.8	9.9	7.4	5.9	4.9	4.2	3.7	3.3	3.0	2.7	2.4	
3	25.7	21.9	17.3	13.0	10.4	8.7	6.5	5.2	4.3	3.7	3.2	2.9	2.6	2.4	2.1	
4	25.0	20.9	16.1	12.1	9.7	8.1	6.0	4.8	4.0	3.5	3.0	2.7	2.4	2.2	1.9	
5	24.4	20.1	15.4	11.5	9.2	7.7	5.8	4.6	3.8	3.3	2.9	2.6	2.3	-	-	
10	22.4	17.5	13.9	10.5	8.4	7.0	5.2	4.2	-	-	-	-	-	-	-	
15	21.1	16.0	12.8	10.1	8.1	6.7	-	-	-	-	-	-	-	-	-	
30	18.6	13.3	10.3	-	-	-	-	-	-	-	-	-	-	-	-	

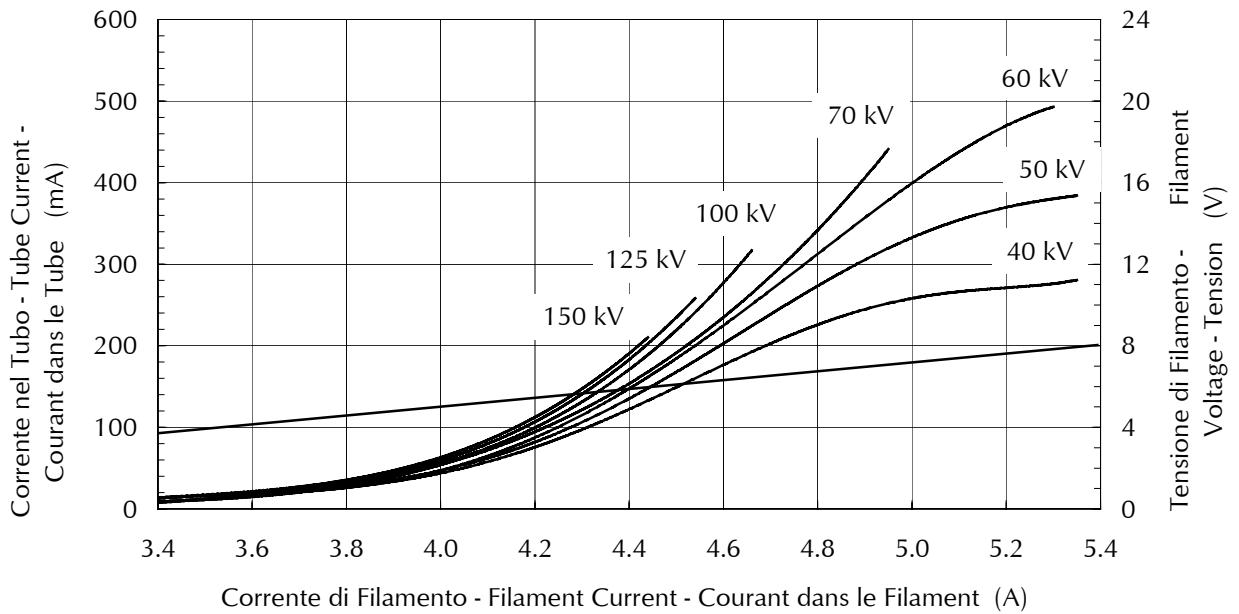


**Abaco per carichi in serie - Serial load rating - Abaque de charges successives**  
**■ 1.2 - 3 Ø - 150 / 180 Hz**

Potenza ammessa sul tubo in kW, per serie di n esposizioni, con frequenza z e durata di ogni esposizione in sec																
Anode input power as a function of n (N° of exposures in series), z (exp. rate per sec), the exposure time (sec)																
Puisance anodique en fonction de n (N° d'exp. de la série), z (cadence d'exp. par sec), temps d'exposition (sec)																
z	0.010	0.020	0.030	0.040	0.050	0.060	0.080	0.100	0.120	0.140	0.160	0.180	0.200	0.220	0.250	n
1	76.8	73.0	70.6	68.9	67.4	66.2	64.1	62.4	60.9	59.7	58.5	57.5	56.3	54.6	52.3	5
2	76.8	73.0	70.6	68.9	67.4	66.2	64.1	62.0	59.1	56.5	54.1	51.9	49.9	48.1	45.5	
3	76.8	73.0	70.6	68.9	67.4	66.2	62.3	58.8	55.7	52.9	50.3	48.0	45.9	44.0	41.4	
4	76.8	73.0	70.6	68.9	66.7	64.3	60.1	56.4	53.1	50.1	47.5	45.2	43.0	41.1	38.5	
5	76.8	73.0	70.6	68.0	65.3	62.8	58.3	54.4	51.0	48.0	45.3	42.9	40.8	-	-	
10	76.2	71.5	67.4	63.6	60.3	57.3	52.2	47.8	-	-	-	-	-	-	-	
15	75.1	69.6	64.8	60.7	57.0	53.8	-	-	-	-	-	-	-	-	-	
30	72.8	65.7	59.9	-	-	-	-	-	-	-	-	-	-	-	-	
1	76.8	73.0	70.6	68.9	67.4	66.2	64.1	61.9	59.1	56.5	54.1	51.9	49.9	48.0	45.5	10
2	76.8	73.0	70.6	68.9	66.7	64.3	60.0	56.3	53.0	50.1	47.5	45.1	43.0	41.1	38.4	
3	76.8	73.0	70.1	66.9	64.0	61.4	56.7	52.7	49.2	46.1	43.4	41.0	38.9	36.9	34.4	
4	76.8	72.4	68.6	65.1	62.0	59.1	54.1	49.9	46.3	43.2	40.5	38.1	36.0	34.1	31.5	
5	76.2	71.5	67.3	63.6	60.3	57.3	52.1	47.7	44.1	40.9	38.2	35.8	33.7	-	-	
10	74.2	68.0	62.8	58.3	54.4	51.0	45.3	40.8	-	-	-	-	-	-	-	
15	72.7	65.6	59.7	54.8	50.6	47.0	-	-	-	-	-	-	-	-	-	
30	69.6	60.7	53.8	-	-	-	-	-	-	-	-	-	-	-	-	
1	76.8	73.0	70.6	68.9	66.7	64.3	60.0	56.3	50.4	43.2	37.8	33.6	30.3	27.5	24.2	20
2	76.8	72.4	68.6	65.1	61.9	59.1	54.1	49.9	46.3	41.7	36.5	32.4	29.2	26.5	23.3	
3	75.7	70.6	66.2	62.3	58.8	55.6	50.3	45.9	42.2	39.1	36.0	32.0	28.8	26.2	23.0	
4	74.9	69.2	64.3	60.0	56.3	53.0	47.5	43.0	39.3	36.2	33.5	31.2	28.6	26.0	22.9	
5	74.2	68.0	62.7	58.2	54.3	50.9	45.3	40.7	37.0	33.9	31.3	29.1	27.1	-	-	
10	71.5	63.6	57.3	52.1	47.7	44.1	38.2	33.7	-	-	-	-	-	-	-	
15	69.5	60.6	53.7	48.2	43.7	40.0	-	-	-	-	-	-	-	-	-	
30	65.6	54.8	47.0	-	-	-	-	-	-	-	-	-	-	-	-	
1	76.8	72.4	68.6	65.1	61.9	54.1	40.6	32.4	27.0	23.2	20.3	18.0	16.2	14.7	13.0	40
2	74.9	69.2	64.3	60.0	56.3	50.4	37.8	30.3	25.2	21.6	18.9	16.8	15.1	13.8	12.1	
3	73.5	66.9	61.4	56.7	52.6	49.2	36.9	29.5	24.6	21.1	18.5	16.4	14.8	13.4	11.8	
4	72.4	65.1	59.1	54.1	49.9	46.3	36.5	29.2	24.3	20.8	18.2	16.2	14.6	13.3	11.7	
5	71.5	63.6	57.2	52.0	47.7	44.1	36.2	29.0	24.1	20.7	18.1	16.1	14.5	-	-	
10	68.0	58.2	50.9	45.3	40.7	37.0	31.3	27.1	-	-	-	-	-	-	-	
15	65.5	54.7	47.0	41.1	36.6	33.0	-	-	-	-	-	-	-	-	-	
30	60.6	48.2	40.0	-	-	-	-	-	-	-	-	-	-	-	-	
1	75.7	70.6	66.2	62.3	58.8	55.6	50.3	45.9	42.2	39.1	36.0	32.0	28.8	26.2	23.0	60
2	73.5	66.9	61.4	56.7	52.6	49.2	36.9	29.5	24.6	21.1	18.5	16.4	14.8	13.4	11.8	
3	72.4	65.1	59.1	54.1	49.9	46.3	36.5	29.2	24.3	20.8	18.2	16.2	14.6	13.3	11.7	
4	70.6	62.2	55.6	49.5	39.6	33.0	24.8	19.8	16.5	14.2	12.4	11.0	9.9	9.0	7.9	
5	69.5	60.6	53.6	48.1	39.2	32.7	24.5	19.6	16.3	14.0	12.2	10.9	9.8	-	-	
10	65.5	54.7	47.0	41.1	36.6	31.9	23.9	19.2	-	-	-	-	-	-	-	
15	62.7	50.9	42.9	37.0	32.6	29.1	-	-	-	-	-	-	-	-	-	
30	57.3	44.1	35.8	-	-	-	-	-	-	-	-	-	-	-	-	
1	74.9	69.2	61.3	46.0	36.8	30.7	23.0	18.4	15.3	13.1	11.5	10.2	9.2	8.4	7.4	80
2	72.4	65.1	54.1	40.6	32.4	27.0	20.3	16.2	13.5	11.6	10.1	9.0	8.1	7.4	6.5	
3	70.6	62.2	51.6	38.7	31.0	25.8	19.4	15.5	12.9	11.1	9.7	8.6	7.7	7.0	6.2	
4	69.2	60.0	50.4	37.8	30.3	25.2	18.9	15.1	12.6	10.8	9.5	8.4	7.6	6.9	6.1	
5	68.0	58.2	49.7	37.3	29.8	24.9	18.6	14.9	12.4	10.7	9.3	8.3	7.5	-	-	
10	63.6	52.0	44.1	36.2	29.0	24.1	18.1	14.5	-	-	-	-	-	-	-	
15	60.6	48.1	39.9	34.1	28.7	23.9	-	-	-	-	-	-	-	-	-	
30	54.7	41.1	33.0	-	-	-	-	-	-	-	-	-	-	-	-	
1	74.2	68.0	52.0	39.0	31.2	26.0	19.5	15.6	13.0	11.1	9.7	8.7	7.8	7.1	6.2	100
2	71.5	63.6	44.7	33.5	26.8	22.4	16.8	13.4	11.2	9.6	8.4	7.5	6.7	6.1	5.4	
3	69.5	60.5	42.3	31.7	25.4	21.1	15.9	12.7	10.6	9.1	7.9	7.0	6.3	5.8	5.1	
4	68.0	58.2	41.1	30.8	24.6	20.5	15.4	12.3	10.3	8.8	7.7	6.8	6.2	5.6	4.9	
5	66.7	56.3	40.3	30.3	24.2	20.2	15.1	12.1	10.1	8.6	7.6	6.7	6.1	-	-	
10	61.9	49.9	38.9	29.2	23.3	19.4	14.6	11.7	-	-	-	-	-	-	-	
15	58.8	45.9	37.7	28.8	23.0	19.2	-	-	-	-	-	-	-	-	-	
30	52.7	38.9	30.8	-	-	-	-	-	-	-	-	-	-	-	-	
1	72.7	59.2	39.5	29.6	23.7	19.7	14.8	11.8	9.9	8.5	7.4	6.6	5.9	5.4	4.7	150
2	69.5	48.3	32.2	24.2	19.3	16.1	12.1	9.7	8.1	6.9	6.0	5.4	4.8	4.4	3.9	
3	67.3	44.7	29.8	22.4	17.9	14.9	11.2	8.9	7.5	6.4	5.6	5.0	4.5	4.1	3.6	
4	65.5	42.9	28.6	21.4	17.2	14.3	10.7	8.6	7.1	6.1	5.4	4.8	4.3	3.9	3.4	
5	64.0	41.8	27.9	20.9	16.7	13.9	10.5	8.4	7.0	6.0	5.2	4.6	4.2	-	-	
10	58.8	39.6	26.4	19.8	15.8	13.2	9.9	7.9	-	-	-	-	-	-	-	
15	55.3	38.9	25.9	19.4	15.6	13.0	-	-	-	-	-	-	-	-	-	
30	48.8	34.8	25.4	-	-	-	-	-	-	-	-	-	-	-	-	
1	69.5	40.5	27.0	20.3	16.2	13.5	10.1	8.1	6.8	5.8	5.1	4.5	4.1	3.7	3.2	300
2	59.2	29.6	19.7	14.8	11.8	9.9	7.4	5.9	4.9	4.2	3.7	3.3	3.0	2.7	2.4	
3	52.0	26.0	17.3	13.0	10.4	8.7	6.5	5.2	4.3	3.7	3.2	2.9	2.6	2.4	2.1	
4	48.3	24.2	16.1	12.1	9.7	8.1	6.0	4.8	4.0	3.5	3.0	2.7	2.4	2.2	1.9	
5	46.2	23.1	15.4	11.5	9.2	7.7	5.8	4.6	3.8	3.3	2.9	2.6	2.3	-	-	
10	41.8	20.9	13.9	10.5	8.4	7.0	5.2	4.2	-	-	-	-	-	-	-	
15	40.3	20.2	13.4	10.1	8.1	6.7	-	-	-	-	-	-	-	-	-	
30	38.9	19.4	13.0	-	-	-	-	-	-	-	-	-	-	-	-	

**Caratteristica di emissione del catodo**  
**Cathode emission characteristic**  
**Caractéristique d'émission de la cathode**

▣ 0.6 - 3 Ø - (± 0.2 A) - IEC 60613 (1989) (2010)



**Caratteristica di emissione del catodo**  
**Cathode emission characteristic**  
**Caractéristique d'émission de la cathode**

■ 1.2 - 3 Ø - (± 0.2 A) - IEC 60613 (1989) (2010)

