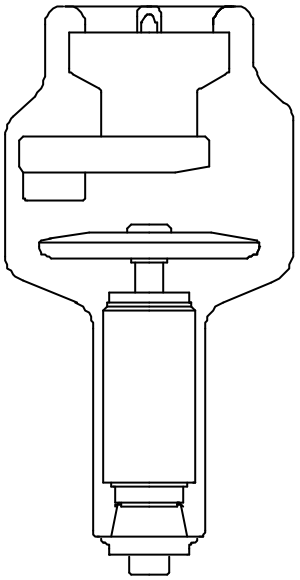
Documentazione Tubo a raggi X
Tube Documentation
Documentation du Tube

X50 H 0.6/1.2



Nr. di matricola
Tube No.
Nr de série

CE 0051

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-asseembly
Le contenu de cette documentation doit être transmis à l'utilisateur de la gaine équipée

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ISO 9001 ISO 13485

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Dichiarazione di conformità

Questo prodotto soddisfa i requisiti essenziali della direttiva 93/42/CEE in accordo alle norme EN 60613 (IEC 613) e EN 60336 (IEC 336)

Declaration of conformity

This tube fulfils the essential requirements of the directive 93/42/EEC according to standard EN 60613 (IEC 613) and EN 60336 (IEC 336).

Confirmation de conformité

Ce tube remplit les exigences essentielles de la directive 93/42/CEE en accord avec les normes EN 60613 (IEC 613) et EN 60336 (IEC 336).

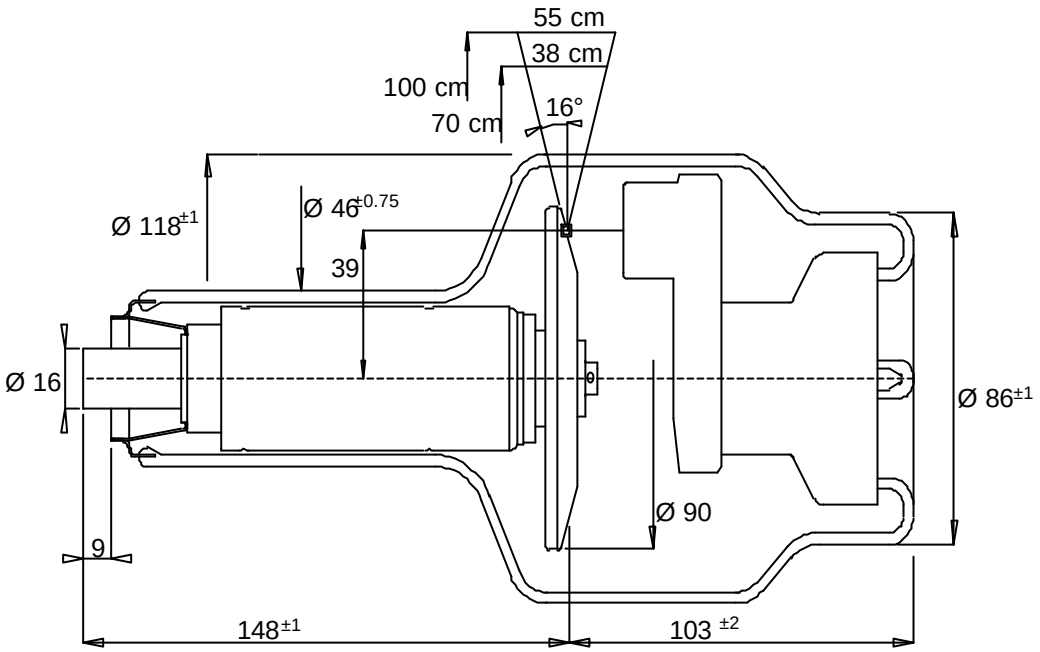
Caratteristiche - Specifications - Spécifications

Macchie focali Focal spot Foyer	▣ ■	0.6 1.2	(IEC 336, EN 60336)
Velocità di rotazione dell'anodo Anode speed Vitesse de l'anode		3000 min^{-1}	
Potenza anodica nominale Nominal anode input power Puissance anodique nominale	▣ ■	11 kW 30 kW	(IEC 613, EN 60613)
Diametro anodico Anode diameter Diamètre de l'anode		90 mm	
Materiale anodico Anode material Materiau de l'anode		T	
Angolo anodico Anode angle Pente de l'anode		16 °	
Campo di radiazione Radiation field Champ de rayonnement		a 70 cm 38 cm a 100 cm 55 cm	
Filtrazione inerente Inherent filtration Filtration inhérente		0.7 mm Al eq	(IEC 522)
Capacità termica anodica Maximum anode heat content Chaleur maximale accumulée dans l'anode		105 kJ 140 kHU	
Dissipazione termica continua massima Maximum continuous heat dissipation Dissipation thermique continue maximale		440 W	
Alta tensione nominale Nominal X-ray tube voltage Haute tension nominale		150 kV	
Massima corrente di filamento Max. filament current Courant dans le filament max.		5.4 A	

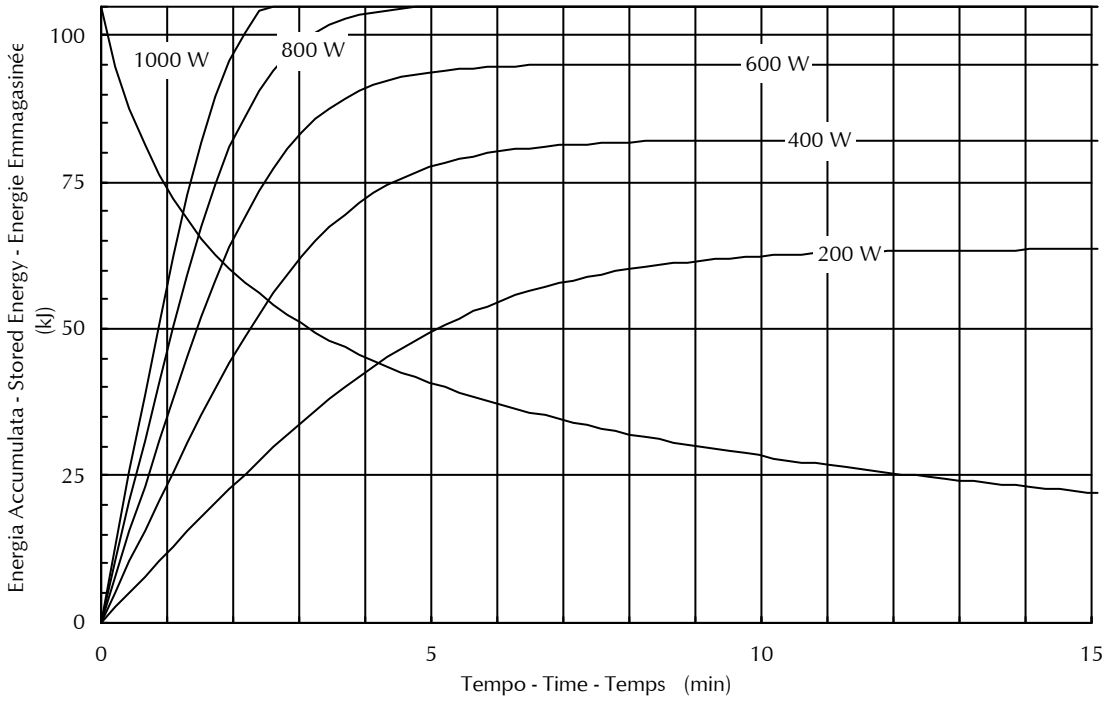
I dati forniti nella presente documentazione si intendono riferiti a:
The data indicated in this documentation refer to:
Les donneés indiqueés dans cette documentation sout calculés pour:

Potenza anodica di equilibrio termico Equivalent anode input power Puissance anodique d'equilibre thermique	100 W =	% della capacità termica anodica % of maximum anode heat content % de chaleur max. accumulée dans l'anode	47%

Dimensioni - Dimension - Dimensions

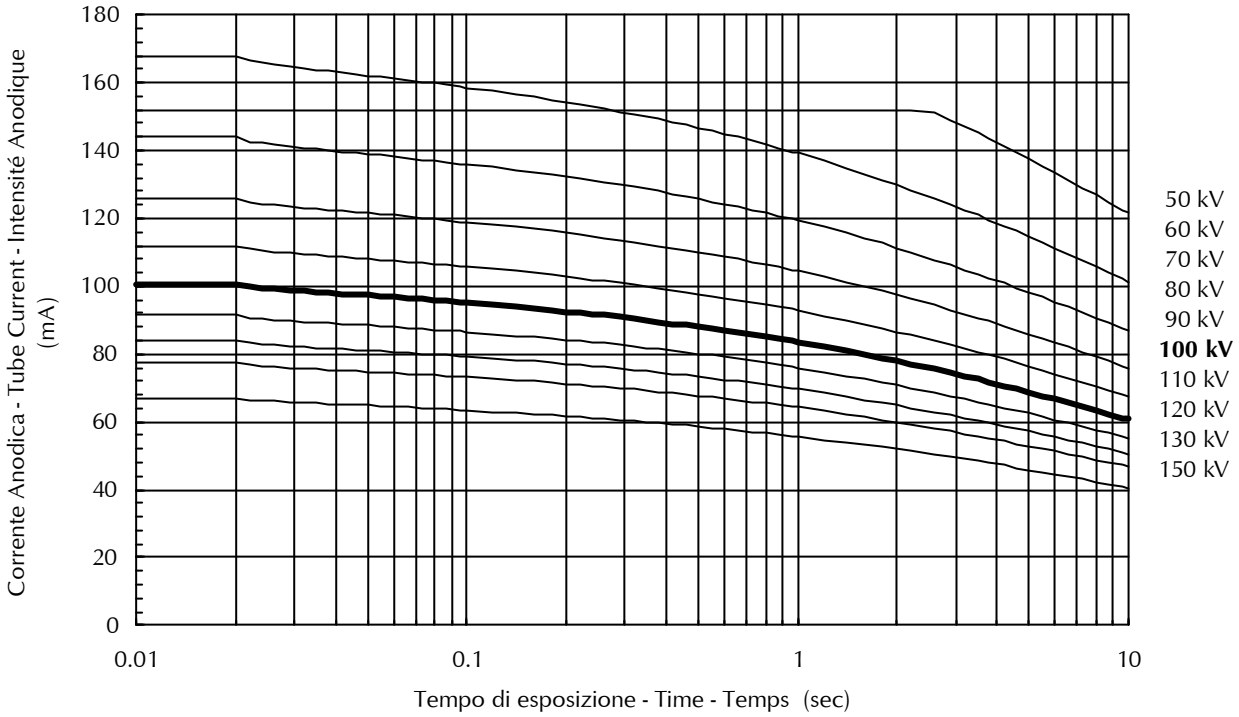


Curve di riscaldamento e raffreddamento dell'anodo
Anode heating and cooling curves
Courbes d'echauffement et de refroidissement de l'anode



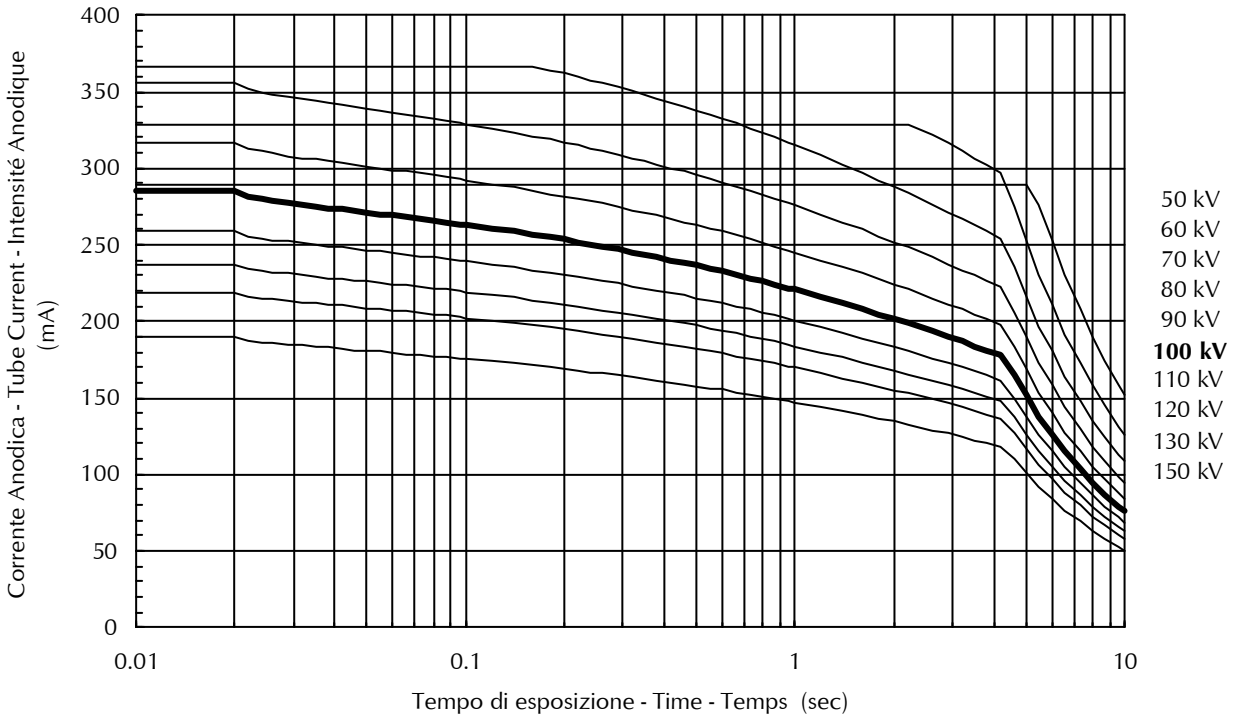
CURVE DI CARICO SINGOLO - SINGLE LOAD RATING - ABAQUE DE CHARGE UNIQUE

▣ 0.6 - 1 ~ - 3000 min^{-1}



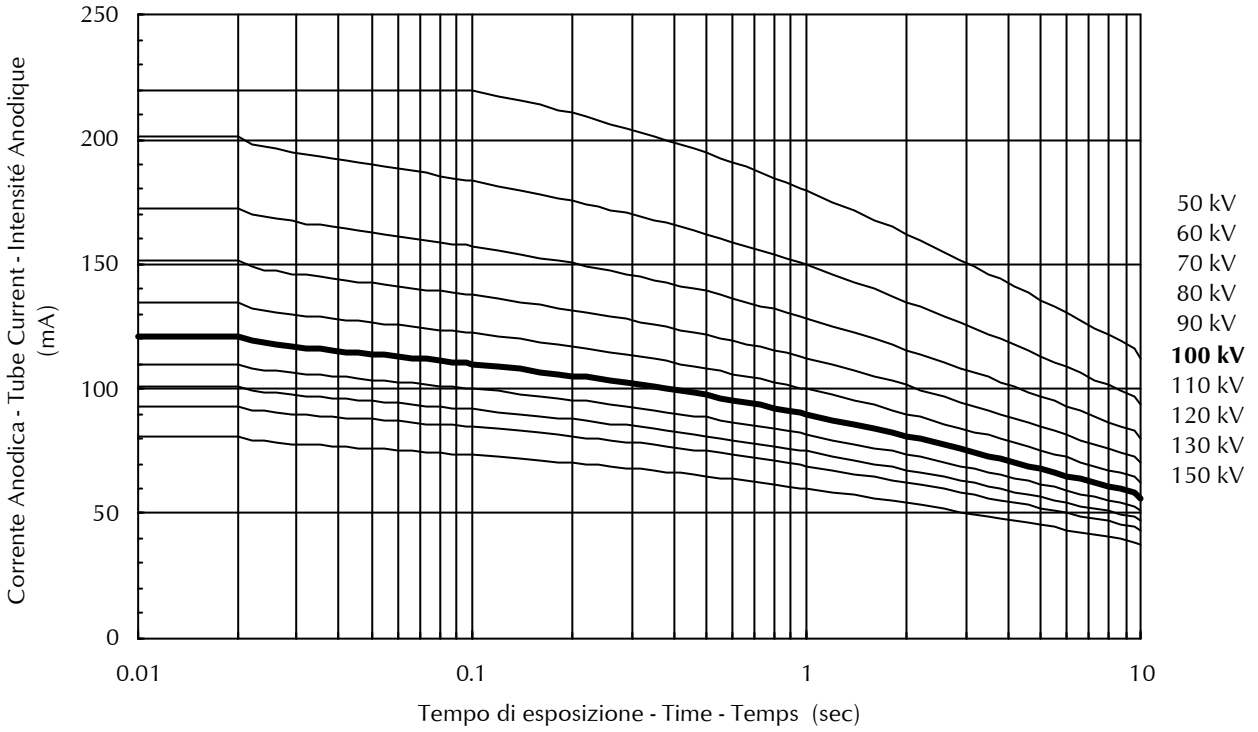
CURVE DI CARICO SINGOLO - SINGLE LOAD RATING - ABAQUE DE CHARGE UNIQUE

■ 1.2 - 1 ~ - 3000 min^{-1}



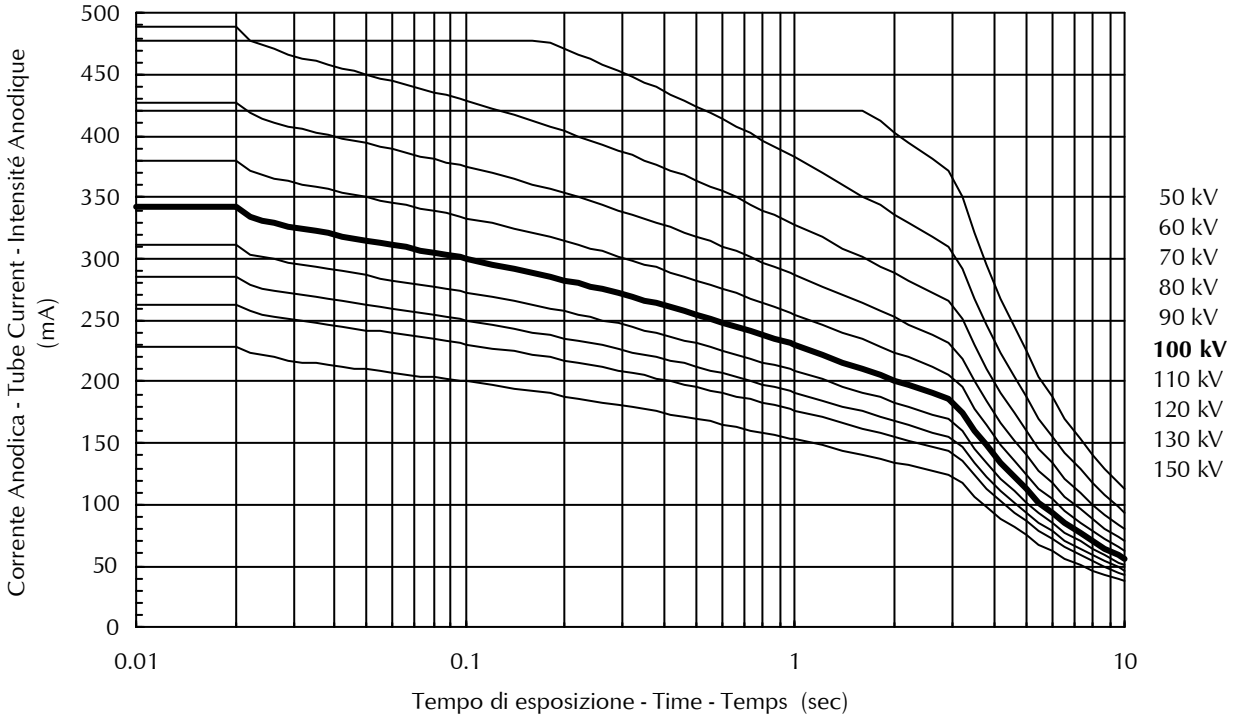
CURVE DI CARICO SINGOLO - SINGLE LOAD RATING - ABAQUE DE CHARGE UNIQUE

0.6 - 3 ~ - 3000 min^{-1}



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

1.2 - 3 ~ - 3000 min^{-1}



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

0.6 - 1 ~ - 3000 min^{-1}

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	8.0	8.0	7.8	7.7	7.7	7.6	7.5	7.4	7.4	7.3	7.3	7.2	7.1	7.0	6.9	
2	7.9	7.9	7.8	7.7	7.7	7.6	7.5	7.4	7.3	7.1	7.0	6.9	6.8	6.7	6.6	
3	7.9	7.9	7.8	7.7	7.6	7.6	7.4	7.2	7.1	7.0	6.8	6.7	6.6	6.5	6.3	
4	7.9	7.9	7.8	7.7	7.6	7.5	7.3	7.1	7.0	6.8	6.7	6.5	6.4	6.3	6.1	5
5	7.8	7.8	7.7	7.6	7.5	7.4	7.2	7.0	6.9	6.7	6.5	6.4	6.3	-	-	
10	7.8	7.7	7.6	7.5	7.3	7.2	6.9	6.7	-	-	-	-	-	-	-	
15	7.8	7.7	7.5	7.3	7.2	7.0	-	-	-	-	-	-	-	-	-	
30	7.8	7.6	7.3	-	-	-	-	-	-	-	-	-	-	-	-	
1	7.9	7.9	7.8	7.7	7.7	7.6	7.5	7.4	7.3	7.1	7.0	6.9	6.8	6.7	6.6	
2	7.9	7.9	7.8	7.7	7.6	7.5	7.3	7.1	7.0	6.8	6.7	6.5	6.4	6.3	6.1	
3	7.8	7.8	7.7	7.6	7.5	7.4	7.1	7.0	6.8	6.6	6.4	6.3	6.1	6.0	5.8	
4	7.8	7.8	7.6	7.5	7.4	7.3	7.0	6.8	6.6	6.4	6.2	6.1	5.9	5.7	5.5	10
5	7.8	7.7	7.6	7.4	7.3	7.2	6.9	6.7	6.5	6.3	6.1	5.9	5.7	-	-	
10	7.8	7.6	7.4	7.2	7.0	6.9	6.5	6.3	-	-	-	-	-	-	-	
15	7.8	7.5	7.3	7.1	6.9	6.7	-	-	-	-	-	-	-	-	-	
30	7.7	7.3	7.0	-	-	-	-	-	-	-	-	-	-	-	-	
1	7.9	7.9	7.8	7.7	7.6	7.5	7.3	7.1	7.0	6.8	6.7	6.5	6.4	6.3	6.1	
2	7.8	7.8	7.6	7.5	7.4	7.3	7.0	6.8	6.6	6.4	6.2	6.1	5.9	5.7	5.5	
3	7.8	7.7	7.5	7.4	7.2	7.1	6.8	6.6	6.3	6.1	5.9	5.7	5.6	5.4	5.2	
4	7.8	7.7	7.5	7.3	7.1	7.0	6.7	6.4	6.1	5.9	5.7	5.5	5.3	5.1	4.9	20
5	7.8	7.6	7.4	7.2	7.0	6.9	6.5	6.2	6.0	5.7	5.5	5.3	5.1	-	-	
10	7.7	7.4	7.2	6.9	6.7	6.5	6.1	5.7	-	-	-	-	-	-	-	
15	7.7	7.3	7.0	6.7	6.4	6.2	-	-	-	-	-	-	-	-	-	
30	7.5	7.1	6.7	-	-	-	-	-	-	-	-	-	-	-	-	
1	7.8	7.8	7.6	7.5	7.4	7.3	7.0	6.8	6.6	6.4	6.2	6.1	5.9	5.7	5.5	
2	7.8	7.7	7.5	7.3	7.1	7.0	6.7	6.4	6.1	5.9	5.7	5.5	5.3	5.1	4.9	
3	7.8	7.6	7.4	7.1	6.9	6.8	6.4	6.1	5.8	5.6	5.3	5.1	4.9	4.7	4.5	
4	7.8	7.5	7.3	7.0	6.8	6.6	6.2	5.9	5.6	5.3	5.1	4.8	4.6	4.5	4.2	40
5	7.7	7.4	7.2	6.9	6.7	6.5	6.1	5.7	5.4	5.1	4.9	4.6	4.4	-	-	
10	7.6	7.2	6.9	6.5	6.2	6.0	5.5	5.1	-	-	-	-	-	-	-	
15	7.5	7.1	6.6	6.3	5.9	5.6	-	-	-	-	-	-	-	-	-	
30	7.3	6.7	6.2	-	-	-	-	-	-	-	-	-	-	-	-	
1	7.8	7.7	7.5	7.4	7.2	7.1	6.8	6.6	6.3	6.1	5.9	5.7	5.2	4.7	4.2	
2	7.8	7.6	7.4	7.1	6.9	6.8	6.4	6.1	5.8	5.6	5.3	5.0	4.5	4.1	3.6	
3	7.8	7.5	7.2	7.0	6.7	6.5	6.1	5.8	5.5	5.2	5.0	4.7	4.2	3.8	3.4	
4	7.7	7.4	7.1	6.8	6.6	6.3	5.9	5.6	5.2	4.9	4.7	4.4	4.1	3.7	3.3	60
5	7.7	7.3	7.0	6.7	6.4	6.2	5.7	5.4	5.0	4.7	4.5	4.2	4.0	-	-	
10	7.5	7.1	6.6	6.3	5.9	5.6	5.1	4.7	-	-	-	-	-	-	-	
15	7.4	6.9	6.4	6.0	5.6	5.3	-	-	-	-	-	-	-	-	-	
30	7.2	6.5	5.9	-	-	-	-	-	-	-	-	-	-	-	-	
1	7.8	7.7	7.5	7.3	7.1	7.0	6.7	6.4	6.1	5.9	5.3	4.7	4.3	3.9	3.4	
2	7.8	7.5	7.3	7.0	6.8	6.6	6.2	5.9	5.6	5.1	4.4	3.9	3.5	3.2	2.8	
3	7.7	7.4	7.1	6.8	6.6	6.3	5.9	5.6	5.2	4.7	4.1	3.7	3.3	3.0	2.6	
4	7.7	7.3	7.0	6.7	6.4	6.1	5.7	5.3	5.0	4.5	4.0	3.5	3.2	2.9	2.5	80
5	7.6	7.2	6.9	6.5	6.2	6.0	5.5	5.1	4.7	4.4	3.9	3.4	3.1	-	-	
10	7.4	6.9	6.5	6.1	5.7	5.4	4.9	4.4	-	-	-	-	-	-	-	
15	7.3	6.7	6.2	5.7	5.4	5.0	-	-	-	-	-	-	-	-	-	
30	7.1	6.3	5.6	-	-	-	-	-	-	-	-	-	-	-	-	
1	7.8	7.6	7.4	7.2	7.0	6.9	6.5	6.2	6.0	5.3	4.6	4.1	3.7	3.4	3.0	
2	7.7	7.4	7.2	6.9	6.7	6.5	6.1	5.7	5.0	4.2	3.7	3.3	3.0	2.7	2.4	
3	7.7	7.3	7.0	6.7	6.4	6.2	5.7	5.4	4.6	3.9	3.4	3.0	2.7	2.5	2.2	
4	7.6	7.2	6.9	6.5	6.2	6.0	5.5	5.1	4.4	3.7	3.3	2.9	2.6	2.4	2.1	100
5	7.6	7.1	6.7	6.4	6.1	5.8	5.3	4.9	4.2	3.6	3.2	2.8	2.5	-	-	
10	7.4	6.8	6.3	5.9	5.5	5.2	4.6	4.2	-	-	-	-	-	-	-	
15	7.2	6.6	6.0	5.6	5.2	4.8	-	-	-	-	-	-	-	-	-	
30	7.0	6.1	5.5	-	-	-	-	-	-	-	-	-	-	-	-	
1	7.8	7.5	7.3	7.1	6.8	6.6	6.3	5.9	4.9	4.2	3.7	3.3	3.0	2.7	2.4	
2	7.7	7.3	7.0	6.7	6.4	6.2	5.6	4.4	3.7	3.2	2.8	2.5	2.2	2.0	1.8	
3	7.6	7.2	6.8	6.5	6.2	5.9	5.0	4.0	3.3	2.8	2.5	2.2	2.0	1.8	1.6	
4	7.5	7.1	6.6	6.3	5.9	5.6	4.7	3.7	3.1	2.7	2.3	2.1	1.9	1.7	1.5	150
5	7.5	6.9	6.5	6.1	5.8	5.4	4.5	3.6	3.0	2.6	2.2	2.0	1.8	-	-	
10	7.2	6.6	6.0	5.6	5.2	4.8	4.1	3.3	-	-	-	-	-	-	-	
15	7.1	6.3	5.7	5.2	4.8	4.4	-	-	-	-	-	-	-	-	-	
30	6.7	5.8	5.1	-	-	-	-	-	-	-	-	-	-	-	-	
1	7.7	7.3	7.0	6.7	6.4	6.2	5.5	4.4	3.7	3.1	2.8	2.4	2.2	2.0	1.8	
2	7.5	7.1	6.6	6.3	5.9	4.9	3.7	3.0	2.5	2.1	1.8	1.6	1.5	1.3	1.2	
3	7.4	6.9	6.4	6.0	4.9	4.1	3.1	2.5	2.1	1.8	1.5	1.4	1.2	1.1	1.0	
4	7.3	6.7	6.2	5.6	4.4	3.7	2.8	2.2	1.9	1.6	1.4	1.2	1.1	1.0	0.9	300
5	7.2	6.6	6.0	5.2	4.2	3.5	2.6	2.1	1.7	1.5	1.3	1.2	1.0	-	-	
10	6.9	6.1	5.4	4.5	3.6	3.0	2.2	1.8	-	-	-	-	-	-	-	
15	6.7	5.8	5.1	4.2	3.4	2.8	-	-	-	-	-	-	-	-	-	
30	6.3	5.2	4.4	-	-	-	-	-	-	-	-	-	-	-	-	

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

■ 1.2 - 1 ~ - 3000 min^{-1}

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	22.4	22.4	21.9	21.5	21.3	21.1	20.7	20.4	20.2	19.9	19.8	19.6	19.3	19.0	18.5	
2	22.2	22.2	21.9	21.5	21.3	21.1	20.7	20.2	19.7	19.3	18.9	18.5	18.1	17.7	17.2	
3	22.1	22.1	21.8	21.4	21.1	20.8	20.2	19.7	19.2	18.7	18.2	17.7	17.3	16.9	16.3	
4	22.0	22.0	21.6	21.2	20.9	20.5	19.9	19.3	18.7	18.2	17.6	17.2	16.7	16.3	15.6	5
5	21.9	21.9	21.5	21.1	20.7	20.3	19.6	18.9	18.3	17.7	17.2	16.7	16.2	-	-	
10	21.9	21.6	21.0	20.5	19.9	19.5	18.6	17.7	-	-	-	-	-	-	-	
15	21.9	21.3	20.7	20.0	19.4	18.9	-	-	-	-	-	-	-	-	-	
30	21.8	20.8	20.0	-	-	-	-	-	-	-	-	-	-	-	-	
1	22.2	22.2	21.9	21.5	21.3	21.1	20.6	20.2	19.7	19.3	18.9	18.5	18.1	17.7	17.2	
2	22.0	22.0	21.6	21.2	20.9	20.5	19.9	19.3	18.7	18.1	17.6	17.1	16.7	16.2	15.6	
3	21.9	21.8	21.4	20.9	20.5	20.1	19.3	18.6	17.9	17.3	16.8	16.2	15.7	15.2	14.6	
4	21.9	21.7	21.2	20.7	20.2	19.7	18.9	18.1	17.4	16.7	16.1	15.5	15.0	14.5	13.8	10
5	21.9	21.5	21.0	20.4	19.9	19.4	18.5	17.7	16.9	16.2	15.6	15.0	14.4	-	-	
10	21.9	21.1	20.3	19.6	18.9	18.3	17.2	16.2	-	-	-	-	-	-	-	
15	21.7	20.7	19.8	19.0	18.3	17.6	-	-	-	-	-	-	-	-	-	
30	21.3	20.0	18.9	-	-	-	-	-	-	-	-	-	-	-	-	
1	22.0	22.0	21.6	21.2	20.9	20.5	19.9	19.3	18.7	18.1	15.9	14.1	12.7	11.5	10.2	
2	21.9	21.7	21.1	20.6	20.2	19.7	18.9	18.1	17.4	16.7	15.0	13.3	12.0	10.9	9.6	
3	21.9	21.4	20.8	20.2	19.7	19.1	18.2	17.3	16.5	15.8	14.6	13.0	11.7	10.7	9.4	
4	21.9	21.2	20.5	19.9	19.3	18.7	17.6	16.7	15.8	15.0	14.3	12.9	11.6	10.5	9.3	20
5	21.9	21.1	20.3	19.6	18.9	18.3	17.2	16.2	15.3	14.5	13.8	12.8	11.5	-	-	
10	21.5	20.4	19.4	18.5	17.7	16.9	15.6	14.4	-	-	-	-	-	-	-	
15	21.3	20.0	18.8	17.8	16.8	16.0	-	-	-	-	-	-	-	-	-	
30	20.7	19.0	17.6	-	-	-	-	-	-	-	-	-	-	-	-	
1	21.9	21.7	21.1	20.6	20.2	19.7	17.7	14.1	11.8	10.1	8.8	7.9	7.1	6.4	5.7	
2	21.9	21.2	20.5	19.9	19.3	18.7	15.9	12.7	10.6	9.1	7.9	7.0	6.3	5.8	5.1	
3	21.8	20.9	20.1	19.3	18.6	17.9	15.3	12.2	10.2	8.7	7.6	6.8	6.1	5.5	4.9	
4	21.7	20.6	19.7	18.9	18.1	17.4	15.0	12.0	10.0	8.5	7.5	6.6	6.0	5.4	4.8	40
5	21.5	20.4	19.4	18.5	17.7	16.9	14.8	11.8	9.8	8.4	7.4	6.6	5.9	-	-	
10	21.1	19.6	18.3	17.2	16.2	15.3	13.8	11.5	-	-	-	-	-	-	-	
15	20.7	19.0	17.5	16.3	15.2	14.2	-	-	-	-	-	-	-	-	-	
30	20.0	17.8	16.0	-	-	-	-	-	-	-	-	-	-	-	-	
1	21.9	21.4	20.8	20.2	19.7	17.3	13.0	10.4	8.7	7.4	6.5	5.8	5.2	4.7	4.2	
2	21.8	20.9	20.1	19.3	17.9	14.9	11.2	8.9	7.5	6.4	5.6	5.0	4.5	4.1	3.6	
3	21.6	20.5	19.6	18.7	16.9	14.1	10.6	8.5	7.0	6.0	5.3	4.7	4.2	3.8	3.4	
4	21.4	20.2	19.1	18.2	16.4	13.7	10.3	8.2	6.8	5.9	5.1	4.6	4.1	3.7	3.3	60
5	21.3	20.0	18.8	17.7	16.1	13.5	10.1	8.1	6.7	5.8	5.0	4.5	4.0	-	-	
10	20.7	19.0	17.5	16.2	15.2	13.0	9.7	7.8	-	-	-	-	-	-	-	
15	20.3	18.3	16.6	15.3	14.1	12.8	-	-	-	-	-	-	-	-	-	
30	19.4	16.9	15.0	-	-	-	-	-	-	-	-	-	-	-	-	
1	21.9	21.2	20.5	19.9	17.1	14.2	10.7	8.5	7.1	6.1	5.3	4.7	4.3	3.9	3.4	
2	21.7	20.6	19.7	17.7	14.1	11.8	8.8	7.1	5.9	5.1	4.4	3.9	3.5	3.2	2.8	
3	21.4	20.2	19.1	16.5	13.2	11.0	8.2	6.6	5.5	4.7	4.1	3.7	3.3	3.0	2.6	
4	21.2	19.9	18.7	15.9	12.7	10.6	7.9	6.3	5.3	4.5	4.0	3.5	3.2	2.9	2.5	80
5	21.1	19.6	18.3	15.5	12.4	10.3	7.7	6.2	5.2	4.4	3.9	3.4	3.1	-	-	
10	20.4	18.5	16.9	14.8	11.8	9.8	7.4	5.9	-	-	-	-	-	-	-	
15	20.0	17.7	16.0	14.5	11.6	9.7	-	-	-	-	-	-	-	-	-	
30	19.0	16.3	14.2	-	-	-	-	-	-	-	-	-	-	-	-	
1	21.9	21.1	20.3	18.5	14.8	12.3	9.3	7.4	6.2	5.3	4.6	4.1	3.7	3.4	3.0	
2	21.5	20.4	19.4	14.9	11.9	9.9	7.4	5.9	5.0	4.2	3.7	3.3	3.0	2.7	2.4	
3	21.3	20.0	18.2	13.7	10.9	9.1	6.8	5.5	4.6	3.9	3.4	3.0	2.7	2.5	2.2	
4	21.1	19.6	17.4	13.1	10.4	8.7	6.5	5.2	4.4	3.7	3.3	2.9	2.6	2.4	2.1	100
5	20.9	19.3	16.9	12.7	10.2	8.5	6.3	5.1	4.2	3.6	3.2	2.8	2.5	-	-	
10	20.2	18.1	15.9	12.0	9.6	8.0	6.0	4.8	-	-	-	-	-	-	-	
15	19.7	17.3	15.4	11.7	9.4	7.8	-	-	-	-	-	-	-	-	-	
30	18.6	15.7	13.6	-	-	-	-	-	-	-	-	-	-	-	-	
1	21.7	20.7	19.7	14.8	11.8	9.8	7.4	5.9	4.9	4.2	3.7	3.3	3.0	2.7	2.4	
2	21.3	19.9	14.8	11.1	8.9	7.4	5.6	4.4	3.7	3.2	2.8	2.5	2.2	2.0	1.8	
3	21.0	19.4	13.2	9.9	7.9	6.6	5.0	4.0	3.3	2.8	2.5	2.2	2.0	1.8	1.6	
4	20.7	18.6	12.4	9.3	7.4	6.2	4.7	3.7	3.1	2.7	2.3	2.1	1.9	1.7	1.5	150
5	20.5	17.9	11.9	8.9	7.2	6.0	4.5	3.6	3.0	2.6	2.2	2.0	1.8	-	-	
10	19.7	16.4	11.0	8.2	6.6	5.5	4.1	3.3	-	-	-	-	-	-	-	
15	19.1	15.9	10.6	8.0	6.4	5.3	-	-	-	-	-	-	-	-	-	
30	17.9	14.7	10.3	-	-	-	-	-	-	-	-	-	-	-	-	
1	21.3	19.9	14.7	11.0	8.8	7.3	5.5	4.4	3.7	3.1	2.8	2.4	2.2	2.0	1.8	
2	20.7	14.8	9.8	7.4	5.9	4.9	3.7	3.0	2.5	2.1	1.8	1.6	1.5	1.3	1.2	
3	20.3	12.3	8.2	6.2	4.9	4.1	3.1	2.5	2.1	1.8	1.5	1.4	1.2	1.1	1.0	
4	19.9	11.1	7.4	5.6	4.4	3.7	2.8	2.2	1.9	1.6	1.4	1.2	1.1	1.0	0.9	300
5	19.7	10.4	6.9	5.2	4.2	3.5	2.6	2.1	1.7	1.5	1.3	1.2	1.0	-	-	
10	17.9	8.9	6.0	4.5	3.6	3.0	2.2	1.8	-	-	-	-	-	-	-	
15	16.9	8.5	5.6	4.2	3.4	2.8	-	-	-	-	-	-	-	-	-	
30	15.9	8.0	5.3	-	-	-	-	-	-	-	-	-	-	-	-	

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

0.6 - 3 ~ - 3000 min^{-1}

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	9.5	9.5	9.3	9.2	9.1	9.0	8.9	8.8	8.7	8.6	8.6	8.5	8.4	8.3	8.1	
2	9.5	9.5	9.3	9.2	9.1	9.0	8.9	8.7	8.5	8.4	8.2	8.1	7.9	7.8	7.6	
3	9.4	9.4	9.3	9.2	9.1	8.9	8.7	8.5	8.3	8.1	8.0	7.8	7.6	7.5	7.2	
4	9.4	9.4	9.2	9.1	9.0	8.8	8.6	8.4	8.2	7.9	7.7	7.6	7.4	7.2	7.0	5
5	9.3	9.3	9.2	9.0	8.9	8.8	8.5	8.2	8.0	7.8	7.6	7.4	7.2	-	-	
10	9.3	9.2	9.0	8.8	8.6	8.4	8.1	7.8	-	-	-	-	-	-	-	
15	9.3	9.1	8.9	8.7	8.4	8.2	-	-	-	-	-	-	-	-	-	
30	9.3	9.0	8.6	-	-	-	-	-	-	-	-	-	-	-	-	
1	9.5	9.5	9.3	9.2	9.1	9.0	8.9	8.7	8.5	8.4	8.2	8.1	7.9	7.8	7.6	
2	9.4	9.4	9.2	9.1	9.0	8.8	8.6	8.4	8.1	7.9	7.7	7.5	7.4	7.2	7.0	
3	9.3	9.3	9.1	9.0	8.8	8.7	8.4	8.1	7.9	7.6	7.4	7.2	7.0	6.8	6.5	
4	9.3	9.3	9.1	8.9	8.7	8.5	8.2	7.9	7.6	7.4	7.1	6.9	6.7	6.5	6.2	10
5	9.3	9.2	9.0	8.8	8.6	8.4	8.1	7.8	7.5	7.2	6.9	6.7	6.5	-	-	
10	9.3	9.0	8.8	8.5	8.2	8.0	7.6	7.2	-	-	-	-	-	-	-	
15	9.3	8.9	8.6	8.3	8.0	7.7	-	-	-	-	-	-	-	-	-	
30	9.1	8.7	8.2	-	-	-	-	-	-	-	-	-	-	-	-	
1	9.4	9.4	9.2	9.1	9.0	8.8	8.6	8.4	8.1	7.9	7.7	7.5	7.4	7.2	7.0	
2	9.3	9.3	9.1	8.9	8.7	8.5	8.2	7.9	7.6	7.4	7.1	6.9	6.7	6.5	6.2	
3	9.3	9.2	8.9	8.7	8.5	8.3	7.9	7.6	7.3	7.0	6.7	6.5	6.3	6.1	5.8	
4	9.3	9.1	8.8	8.6	8.4	8.1	7.7	7.4	7.0	6.7	6.4	6.2	6.0	5.7	5.4	20
5	9.3	9.0	8.8	8.5	8.2	8.0	7.6	7.2	6.8	6.5	6.2	5.9	5.7	-	-	
10	9.2	8.8	8.4	8.1	7.8	7.5	6.9	6.5	-	-	-	-	-	-	-	
15	9.1	8.6	8.2	7.8	7.4	7.1	-	-	-	-	-	-	-	-	-	
30	8.9	8.3	7.7	-	-	-	-	-	-	-	-	-	-	-	-	
1	9.3	9.3	9.1	8.9	8.7	8.5	8.2	7.9	7.6	7.4	7.1	6.9	6.7	6.4	5.7	
2	9.3	9.1	8.8	8.6	8.4	8.1	7.7	7.4	7.0	6.7	6.4	6.2	5.9	5.7	5.1	
3	9.3	9.0	8.7	8.4	8.1	7.9	7.4	7.0	6.6	6.3	6.0	5.7	5.5	5.2	4.9	
4	9.3	8.9	8.5	8.2	7.9	7.6	7.1	6.7	6.3	6.0	5.7	5.4	5.1	4.9	4.6	40
5	9.2	8.8	8.4	8.1	7.8	7.5	6.9	6.5	6.1	5.7	5.4	5.1	4.9	-	-	
10	9.0	8.5	8.0	7.6	7.2	6.8	6.2	5.7	-	-	-	-	-	-	-	
15	8.9	8.3	7.7	7.2	6.8	6.4	-	-	-	-	-	-	-	-	-	
30	8.6	7.8	7.1	-	-	-	-	-	-	-	-	-	-	-	-	
1	9.3	9.2	8.9	8.7	8.5	8.3	7.9	7.6	7.3	7.0	6.5	5.8	5.2	4.7	4.2	
2	9.3	9.0	8.7	8.4	8.1	7.9	7.4	7.0	6.6	6.3	5.6	5.0	4.5	4.1	3.6	
3	9.2	8.8	8.5	8.1	7.8	7.5	7.0	6.6	6.2	5.8	5.3	4.7	4.2	3.8	3.4	
4	9.2	8.7	8.3	7.9	7.6	7.3	6.7	6.3	5.9	5.5	5.1	4.6	4.1	3.7	3.3	60
5	9.1	8.6	8.2	7.8	7.4	7.1	6.5	6.0	5.6	5.2	4.9	4.5	4.0	-	-	
10	8.9	8.3	7.7	7.2	6.8	6.4	5.7	5.2	-	-	-	-	-	-	-	
15	8.8	8.0	7.4	6.8	6.3	5.9	-	-	-	-	-	-	-	-	-	
30	8.4	7.5	6.7	-	-	-	-	-	-	-	-	-	-	-	-	
1	9.3	9.1	8.8	8.6	8.4	8.1	7.7	7.4	7.0	6.1	5.3	4.7	4.3	3.9	3.4	
2	9.3	8.9	8.5	8.2	7.9	7.6	7.1	6.7	5.9	5.1	4.4	3.9	3.5	3.2	2.8	
3	9.2	8.7	8.3	7.9	7.6	7.3	6.7	6.3	5.5	4.7	4.1	3.7	3.3	3.0	2.6	
4	9.1	8.6	8.1	7.7	7.4	7.0	6.4	5.9	5.3	4.5	4.0	3.5	3.2	2.9	2.5	80
5	9.0	8.5	8.0	7.6	7.2	6.8	6.2	5.7	5.2	4.4	3.9	3.4	3.1	-	-	
10	8.8	8.1	7.5	6.9	6.5	6.1	5.4	4.9	-	-	-	-	-	-	-	
15	8.6	7.8	7.1	6.5	6.0	5.6	-	-	-	-	-	-	-	-	-	
30	8.3	7.2	6.4	-	-	-	-	-	-	-	-	-	-	-	-	
1	9.3	9.0	8.8	8.5	8.2	8.0	7.6	7.2	6.2	5.3	4.6	4.1	3.7	3.4	3.0	
2	9.2	8.8	8.4	8.1	7.8	7.5	6.9	5.9	5.0	4.2	3.7	3.3	3.0	2.7	2.4	
3	9.1	8.6	8.2	7.8	7.4	7.1	6.5	5.5	4.6	3.9	3.4	3.0	2.7	2.5	2.2	
4	9.0	8.5	8.0	7.6	7.2	6.8	6.2	5.2	4.4	3.7	3.3	2.9	2.6	2.4	2.1	100
5	9.0	8.4	7.8	7.4	7.0	6.6	5.9	5.1	4.2	3.6	3.2	2.8	2.5	-	-	
10	8.7	7.9	7.3	6.7	6.2	5.8	5.1	4.6	-	-	-	-	-	-	-	
15	8.5	7.6	6.9	6.3	5.8	5.3	-	-	-	-	-	-	-	-	-	
30	8.1	7.0	6.1	-	-	-	-	-	-	-	-	-	-	-	-	
1	9.3	8.9	8.6	8.3	8.0	7.7	7.2	5.9	4.9	4.2	3.7	3.3	3.0	2.7	2.4	
2	9.1	8.6	8.2	7.8	7.4	7.1	5.6	4.4	3.7	3.2	2.8	2.5	2.2	2.0	1.8	
3	9.0	8.4	7.9	7.5	7.1	6.6	5.0	4.0	3.3	2.8	2.5	2.2	2.0	1.8	1.6	
4	8.9	8.3	7.7	7.2	6.8	6.2	4.7	3.7	3.1	2.7	2.3	2.1	1.9	1.7	1.5	150
5	8.8	8.1	7.5	7.0	6.5	6.0	4.5	3.6	3.0	2.6	2.2	2.0	1.8	-	-	
10	8.5	7.6	6.9	6.3	5.8	5.3	4.1	3.3	-	-	-	-	-	-	-	
15	8.3	7.3	6.5	5.8	5.3	4.8	-	-	-	-	-	-	-	-	-	
30	7.8	6.6	5.7	-	-	-	-	-	-	-	-	-	-	-	-	
1	9.1	8.6	8.2	7.8	7.4	7.1	5.5	4.4	3.7	3.1	2.8	2.4	2.2	2.0	1.8	
2	8.9	8.3	7.7	7.2	5.9	4.9	3.7	3.0	2.5	2.1	1.8	1.6	1.5	1.3	1.2	
3	8.8	8.0	7.4	6.2	4.9	4.1	3.1	2.5	2.1	1.8	1.5	1.4	1.2	1.1	1.0	
4	8.6	7.8	7.1	5.6	4.4	3.7	2.8	2.2	1.9	1.6	1.4	1.2	1.1	1.0	0.9	300
5	8.5	7.6	6.9	5.2	4.2	3.5	2.6	2.1	1.7	1.5	1.3	1.2	1.0	-	-	
10	8.1	7.0	6.0	4.5	3.6	3.0	2.2	1.8	-	-	-	-	-	-	-	
15	7.8	6.6	5.6	4.2	3.4	2.8	-	-	-	-	-	-	-	-	-	
30	7.3	5.8	4.8	-	-	-	-	-	-	-	-	-	-	-	-	

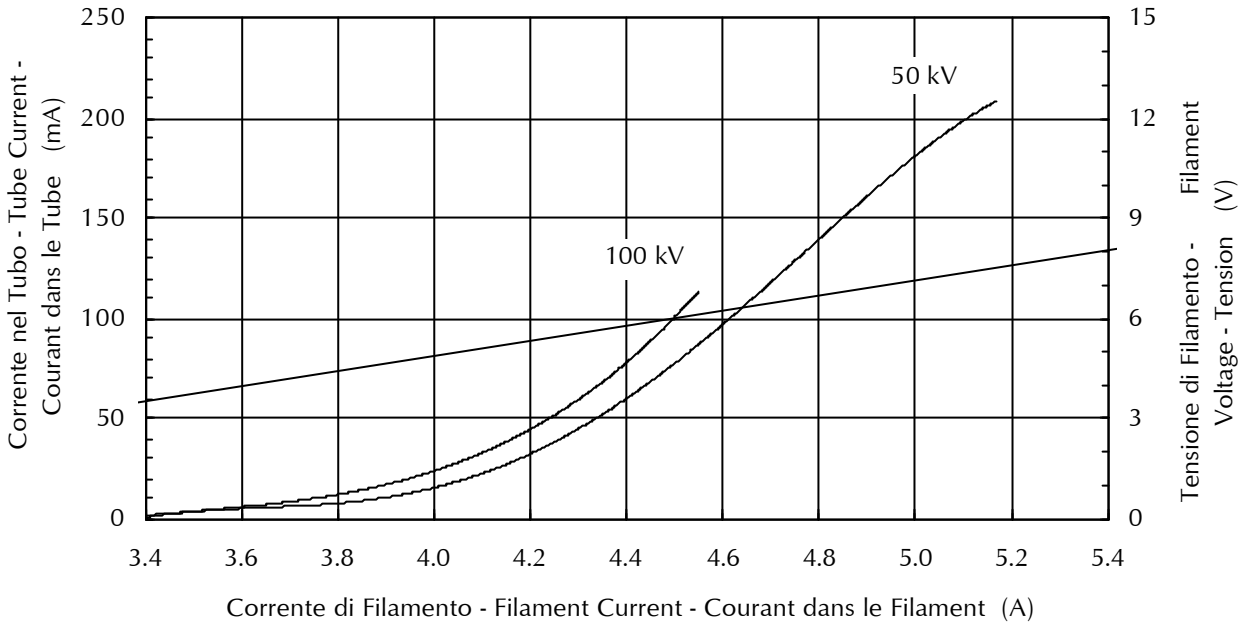
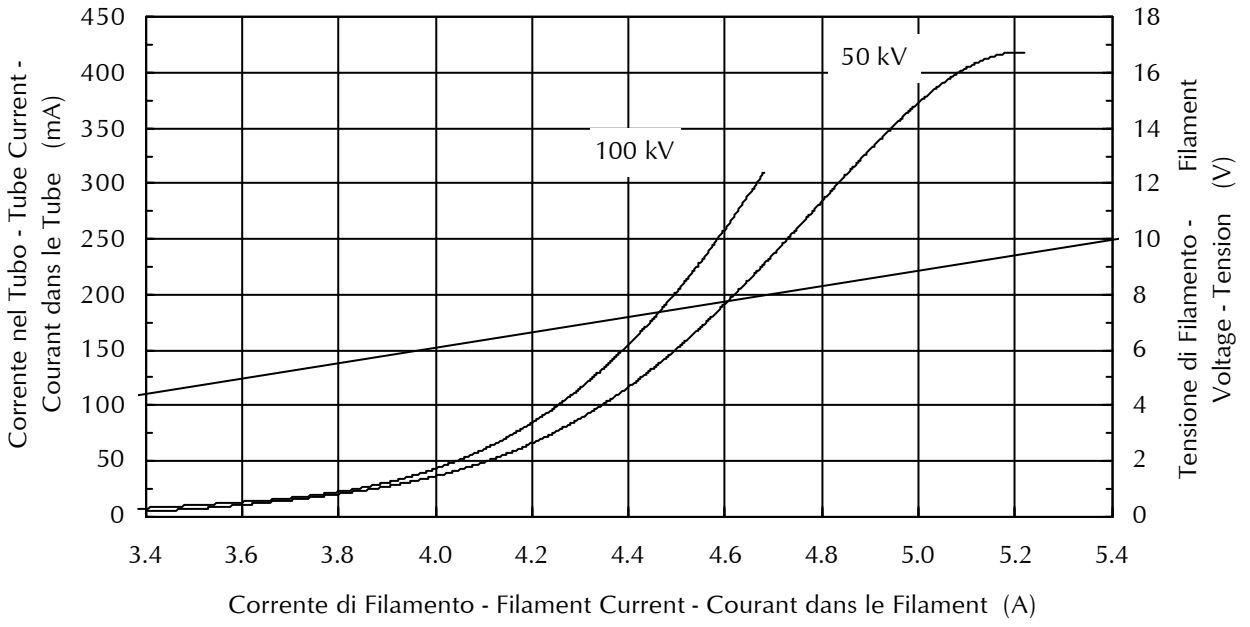
Abaco per carichi in serie - Serial load rating - Abaque de charges successives

■ 1.2 - 3 ~ - 3000 min^{-1}

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	26.8	26.8	26.1	25.6	25.2	24.9	24.4	24.0	23.7	23.4	23.1	22.8	22.4	22.0	21.4	
2	26.5	26.5	26.1	25.6	25.2	24.9	24.3	23.7	23.0	22.5	21.9	21.4	20.9	20.4	19.7	
3	26.4	26.4	25.9	25.4	25.0	24.6	23.7	23.0	22.3	21.6	21.0	20.4	19.8	19.3	18.5	
4	26.2	26.2	25.7	25.2	24.7	24.2	23.3	22.4	21.7	20.9	20.2	19.6	19.0	18.4	17.7	5
5	26.1	26.1	25.5	24.9	24.4	23.9	22.9	22.0	21.1	20.4	19.7	19.0	18.4	-	-	
10	26.1	25.6	24.8	24.1	23.4	22.7	21.5	20.4	-	-	-	-	-	-	-	
15	26.1	25.3	24.3	23.5	22.7	21.9	-	-	-	-	-	-	-	-	-	
30	25.9	24.6	23.4	-	-	-	-	-	-	-	-	-	-	-	-	
1	26.5	26.5	26.1	25.6	25.2	24.9	24.3	23.7	23.0	22.4	21.9	21.4	20.8	20.4	19.1	
2	26.2	26.2	25.7	25.1	24.6	24.2	23.3	22.4	21.6	20.9	20.2	19.6	19.0	18.4	17.6	
3	26.1	26.0	25.3	24.7	24.1	23.5	22.5	21.5	20.7	19.8	19.1	18.4	17.8	17.2	16.3	
4	26.1	25.8	25.0	24.3	23.7	23.0	21.9	20.9	19.9	19.0	18.3	17.5	16.9	16.2	15.4	10
5	26.1	25.6	24.8	24.0	23.3	22.6	21.4	20.3	19.3	18.4	17.6	16.8	16.1	-	-	
10	26.1	24.9	23.9	22.9	22.0	21.1	19.7	18.4	-	-	-	-	-	-	-	
15	25.8	24.4	23.2	22.1	21.1	20.1	-	-	-	-	-	-	-	-	-	
30	25.3	23.5	21.9	-	-	-	-	-	-	-	-	-	-	-	-	
1	26.2	26.2	25.7	25.1	24.6	24.2	23.2	22.4	21.1	18.1	15.9	14.1	12.7	11.5	10.2	
2	26.1	25.7	25.0	24.3	23.7	23.0	21.9	20.8	19.9	17.1	15.0	13.3	12.0	10.9	9.6	
3	26.1	25.4	24.5	23.7	23.0	22.2	20.9	19.8	18.7	16.7	14.6	13.0	11.7	10.7	9.4	
4	26.1	25.1	24.2	23.3	22.4	21.6	20.2	19.0	17.9	16.6	14.5	12.9	11.6	10.5	9.3	20
5	26.1	24.9	23.8	22.8	21.9	21.1	19.6	18.3	17.2	16.2	14.4	12.8	11.5	-	-	
10	25.6	24.0	22.6	21.4	20.3	19.3	17.6	16.1	-	-	-	-	-	-	-	
15	25.2	23.4	21.8	20.4	19.2	18.1	-	-	-	-	-	-	-	-	-	
30	24.4	22.1	20.1	-	-	-	-	-	-	-	-	-	-	-	-	
1	26.1	25.7	25.0	24.3	23.7	23.0	17.7	14.1	11.8	10.1	8.8	7.9	7.1	6.4	5.7	
2	26.1	25.1	24.2	23.2	22.4	21.1	15.9	12.7	10.6	9.1	7.9	7.0	6.3	5.8	5.1	
3	26.0	24.7	23.5	22.5	21.5	20.3	15.3	12.2	10.2	8.7	7.6	6.8	6.1	5.5	4.9	
4	25.7	24.3	23.0	21.9	20.8	19.9	15.0	12.0	10.0	8.5	7.5	6.6	6.0	5.4	4.8	40
5	25.6	24.0	22.6	21.4	20.3	19.3	14.8	11.8	9.8	8.4	7.4	6.6	5.9	-	-	
10	24.9	22.8	21.1	19.6	18.3	17.2	14.4	11.5	-	-	-	-	-	-	-	
15	24.4	22.0	20.1	18.4	17.1	15.9	-	-	-	-	-	-	-	-	-	
30	23.4	20.4	18.1	-	-	-	-	-	-	-	-	-	-	-	-	
1	26.1	25.4	24.5	23.7	20.8	17.3	13.0	10.4	8.7	7.4	6.5	5.8	5.2	4.7	4.2	
2	26.0	24.7	23.5	22.4	17.9	14.9	11.2	8.9	7.5	6.4	5.6	5.0	4.5	4.1	3.6	
3	25.7	24.2	22.8	21.1	16.9	14.1	10.6	8.5	7.0	6.0	5.3	4.7	4.2	3.8	3.4	
4	25.4	23.7	22.2	20.5	16.4	13.7	10.3	8.2	6.8	5.9	5.1	4.6	4.1	3.7	3.3	60
5	25.2	23.4	21.8	20.2	16.1	13.5	10.1	8.1	6.7	5.8	5.0	4.5	4.0	-	-	
10	24.4	22.0	20.1	18.4	15.6	13.0	9.7	7.8	-	-	-	-	-	-	-	
15	23.8	21.1	18.9	17.2	15.4	12.8	-	-	-	-	-	-	-	-	-	
30	22.6	19.3	16.8	-	-	-	-	-	-	-	-	-	-	-	-	
1	26.1	25.1	24.2	21.3	17.1	14.2	10.7	8.5	7.1	6.1	5.3	4.7	4.3	3.9	3.4	
2	25.7	24.3	23.0	17.7	14.1	11.8	8.8	7.1	5.9	5.1	4.4	3.9	3.5	3.2	2.8	
3	25.4	23.7	22.0	16.5	13.2	11.0	8.2	6.6	5.5	4.7	4.1	3.7	3.3	3.0	2.6	
4	25.1	23.2	21.1	15.9	12.7	10.6	7.9	6.3	5.3	4.5	4.0	3.5	3.2	2.9	2.5	80
5	24.9	22.8	20.7	15.5	12.4	10.3	7.7	6.2	5.2	4.4	3.9	3.4	3.1	-	-	
10	24.0	21.4	19.3	14.8	11.8	9.8	7.4	5.9	-	-	-	-	-	-	-	
15	23.4	20.4	18.1	14.5	11.6	9.7	-	-	-	-	-	-	-	-	-	
30	22.0	18.4	15.9	-	-	-	-	-	-	-	-	-	-	-	-	
1	26.1	24.9	23.8	18.5	14.8	12.3	9.3	7.4	6.2	5.3	4.6	4.1	3.7	3.4	3.0	
2	25.6	24.0	19.8	14.9	11.9	9.9	7.4	5.9	5.0	4.2	3.7	3.3	3.0	2.7	2.4	
3	25.2	23.4	18.2	13.7	10.9	9.1	6.8	5.5	4.6	3.9	3.4	3.0	2.7	2.5	2.2	
4	24.9	22.8	17.4	13.1	10.4	8.7	6.5	5.2	4.4	3.7	3.3	2.9	2.6	2.4	2.1	100
5	24.6	22.4	16.9	12.7	10.2	8.5	6.3	5.1	4.2	3.6	3.2	2.8	2.5	-	-	
10	23.7	20.8	15.9	12.0	9.6	8.0	6.0	4.8	-	-	-	-	-	-	-	
15	23.0	19.8	15.6	11.7	9.4	7.8	-	-	-	-	-	-	-	-	-	
30	21.5	17.8	15.1	-	-	-	-	-	-	-	-	-	-	-	-	
1	25.8	24.4	19.7	14.8	11.8	9.8	7.4	5.9	4.9	4.2	3.7	3.3	3.0	2.7	2.4	
2	25.2	22.2	14.8	11.1	8.9	7.4	5.6	4.4	3.7	3.2	2.8	2.5	2.2	2.0	1.8	
3	24.8	19.8	13.2	9.9	7.9	6.6	5.0	4.0	3.3	2.8	2.5	2.2	2.0	1.8	1.6	
4	24.4	18.6	12.4	9.3	7.4	6.2	4.7	3.7	3.1	2.7	2.3	2.1	1.9	1.7	1.5	150
5	24.1	17.9	11.9	8.9	7.2	6.0	4.5	3.6	3.0	2.6	2.2	2.0	1.8	-	-	
10	23.0	16.4	11.0	8.2	6.6	5.5	4.1	3.3	-	-	-	-	-	-	-	
15	22.2	15.9	10.6	8.0	6.4	5.3	-	-	-	-	-	-	-	-	-	
30	20.6	15.5	10.3	-	-	-	-	-	-	-	-	-	-	-	-	
1	25.2	22.0	14.7	11.0	8.8	7.3	5.5	4.4	3.7	3.1	2.8	2.4	2.2	2.0	1.8	
2	24.4	14.8	9.8	7.4	5.9	4.9	3.7	3.0	2.5	2.1	1.8	1.6	1.5	1.3	1.2	
3	23.8	12.3	8.2	6.2	4.9	4.1	3.1	2.5	2.1	1.8	1.5	1.4	1.2	1.1	1.0	
4	22.2	11.1	7.4	5.6	4.4	3.7	2.8	2.2	1.9	1.6	1.4	1.2	1.1	1.0	0.9	300
5	20.8	10.4	6.9	5.2	4.2	3.5	2.6	2.1	1.7	1.5	1.3	1.2	1.0	-	-	
10	17.9	8.9	6.0	4.5	3.6	3.0	2.2	1.8	-	-	-	-	-	-	-	
15	16.9	8.5	5.6	4.2	3.4	2.8	-	-	-	-	-	-	-	-	-	
30	15.9	8.0	5.3	-	-	-	-	-	-	-	-	-	-	-	-	

Caratteristica di emissione del catodo
Cathode emission characteristic
Caractéristique d'émission de la cathode
▣ 0.6 - 3 ~ - (± 0.2 A)



Caratteristica di emissione del catodo
Cathode emission characteristic
Caractéristique d'émission de la cathode
■ 1.2 - 3 ~ - (± 0.2 A)