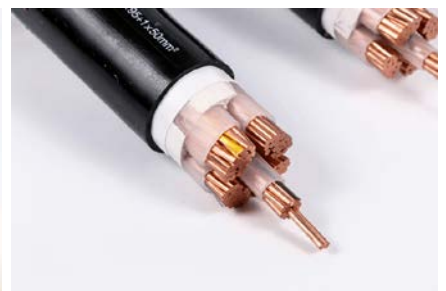
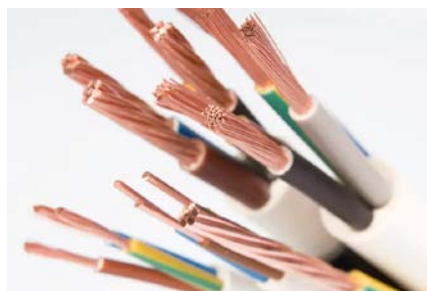
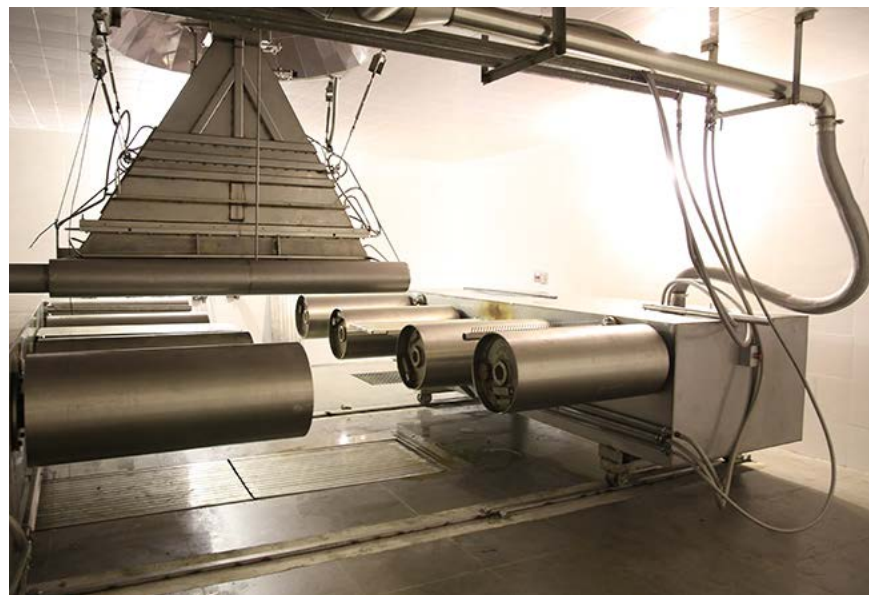


Electron Beam Irradiation Equipment For Electron Beam Cable



EBM MACHINE

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THE INTRODUCTION OF ACCELERATOR

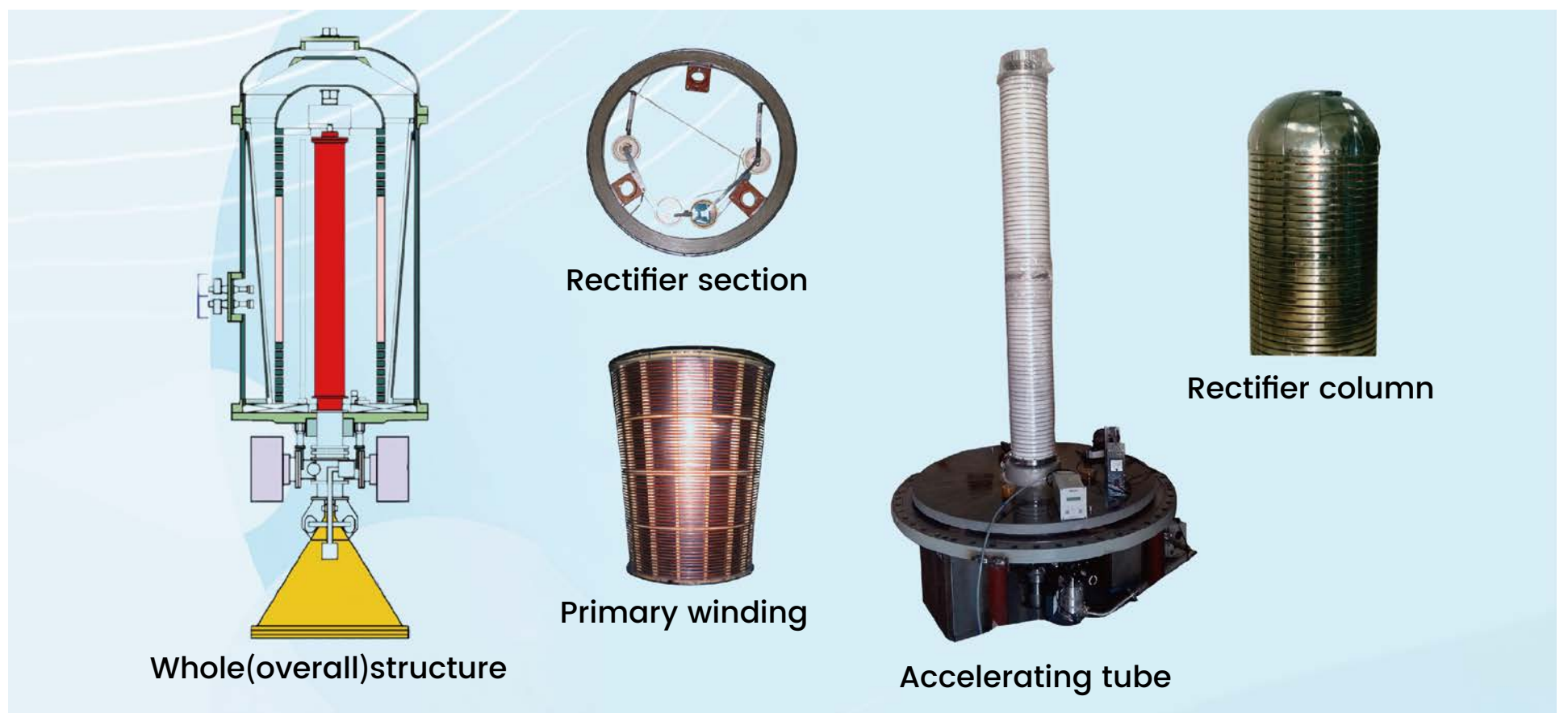
CELV accelerator is a kind of high voltage transformer accelerator. which have the advantages of stable and reliable operation, wide energy range, high processing efficiency, high quality and low operation cost.

CELV series accelerator could cover the energy 0.5MeV-3.0MeV, beam current reach 150mA, the Maximum beam power could be 120kW, popular beam power is 100kW, the energy and beam current is continually adjustable in the nominal range. The main parameters as following:

Energy instability, %, less than	±2.0%
Beam current instability,%, less than	±2.0%
Unhomogeneity of current linear density along the output window	<7%
Power transfer efficiency	80-90%

	Energy range MeV	Beam power kw	Max, beam current mA
CELV-mini	0.5	50	100
CELV-0.5	0.4-0.7	75	150
CELV-4-1.0	0.7-1.0	100	100
CELV-4-1.5	1.0- 1.5	100	70
CELV-6	0.8-1.2	100	100
CELV-8	1.0-2.5	100	60
CELV-8-1.5	1.0-1.5	100	100
CELV-15	1.5-3.0	100	50
CELV-16(Developing)	3.0-4.0	100	30
CELV-18	1.0-2.0	125	70

INSIDE THE ACCELERATOR



SELF-SHIELDING ACCELERATOR SYSTEM

The energy 0.3-0.7MeV of this kind of accelerator is mainly used for irradiation of tire cord sheet and small wire less than 1mm, the beam can reach 150mA, Power up to 75kW, the irradiation efficiency is high, and the operation is simple.



SMALL WIRE IRRADIATION SYSTEM

The system could equipped with different wire tension accumulator, can irradiate the electronics wire of AWG30~AWG14, the wire below 10mm and heat-shrinkable tube smaller than Diameter of 28mm (expanded). It can operate with non-stop to change the reel working together with the 2-station and tension accumulator. The system can work with the reel of 400mm-800mm and 630-1250mm.



BIG WIRE IRRADIATION SYSTEM

The system can irradiate the wires and cables of 16mm ~240mm',and heat shrinkable bus-bar tube less than OD 240mm(expanded) . Working together with the caterpillar and 4-side irradiation system, the processing cable can up to OD90mm, to improve the circular unhomogeneity. The system work with the bobbin of 1000-3200mm.



SHEET IRRADIATION SYSTEM

This system can be irradiated by the thickness of 0.1mm~4mm, width of less than 1100mm foam material, oil pipeline and other sheet materials with bag rot, reeling machine adopts pneumatic shaft or iron plate, iron plate diameter up to 1600mm, storage rack storage amount of up to 25 meters, double station configuration to achieve non-stop roll changing.



SUPPORT SYSTEM FOR ACCELERATOR



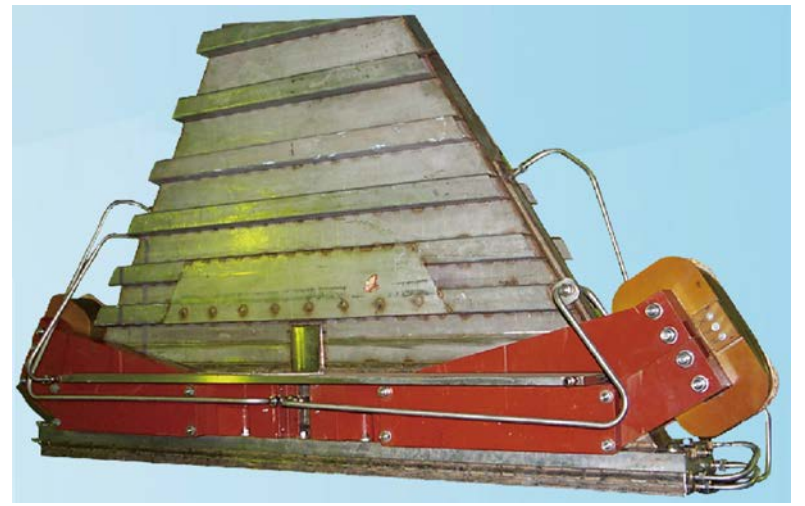
TECHNOLOGY PARAMETER

For small wire										
Recommand	Energy (MeV)	Beam current (mA)	Raster width (mm)	Total lines	Max Speed m/min)	Size of wire	Dose (kGy)	Speed for each line (m/min)	CrO/oin Productivity (km)/Day	Productivity (km)/Month
CELV-6 or CELV-4-1.0	1.2 or 1.0	100	1800 (36turns/line)	4 line	400	AWG16-30	120	400	1920	48000
							60	400	1920	48000
			1800 (36turns/line)	8 line	400	AWG16-30	120	400	1920	48000
							60	400	3840	96000
Middle wire										
CELV-4-1.5 or CELV-18	1.5 or 2.0	70	1600 (25turns/line)	4 line	400	0.5~6mm ²	120	220	1056	26400
							60	400	1920	48000
Big diameter cables (Include middle)										
CELV-8 or CELV-15	2.5 or 3.0	40	1600 (15turns/line)	1 line	150	16~400 mm ²	120	78	93.6	2340
							60	150	187.2	4680
		50	1600 (30turns/line)	2 line	400	1~25mm ²	120	190	456	11400
							60	380	912	22800

Note: the above table is to predict the irradiation dose, irradiation dose and the actual size formula, forecast production according to 20 hours a day, 25 days per month according to the calculated irradiation line and large crossection cable slower, table into a large cable wire is irradiated according to the prediction of irradiated 95mm² wire yield.

4-SIDE IRRADIATION SYSTEM

4-side irradiation system is an irradiation process device designed to improve the circumferential irradiation Unhomogeneity of large cross section wire and cable (15-85mm). The device simulates the vertical angle of two accelerators and processes the cable at the same time. Its working principle is to use the magnetic field to a beam deflection accelerator for electron beam +45 degrees and -45 degrees around the electron beam into two beams, 90 degrees of wire and cable irradiation. cable to form a circle, surrounded by irradiation effect.



By using the device and proper beam transmission equipment, the irradiation Unhomogeneity of large cross section wire and cable can be successfully solved. Under the given cable insulation thickness, the energy usage is reduced and the best dose Unhomogeneity is achieved.

FOUR-SIDED IRRADIATION TEST RESULTS (3.0MeV)

Model	Specification (mm ²)	outside diameter of cable (mm)	Thickness (mm)	Area (mm ²)	Length before heating (mm)	Length after thermal extension (mm)	Hot set (%)	Tensile Strength (Mpa)	Elongation at break(%)
WDZB-HK2-YBI, 8.7/15KV	3×120	67	1.19	4.76	20	25	25	11.9	181
			1.25	5	20	26	30	12.4	188
			1.16	4.64	20	25	25	12.1	194
			1.17	4.68	20	26	30	11.3	210
			0.81	3.24	20	24	20	11.7	202
			0.85	3.4	20	27	35	11.6	199
WDZB-YJV, 8.7/15KV	3×240	80	1.05	4.2	20	26	30	13.7	228
			0.92	3.66	20	27	35	12.6	168
			0.84	3.76	20	27	35	10.2	191
			0.83	3.72	20	27	35	11.3	181
			0.94	3.76	20	26	30	11.6	173
			0.88	3.52	20	27	35	10.4	181
			0.98	3.92	20	28	40	12.7	162
			0.95	3.8	20	28	40	14.2	185
			0.96	3.84	20	25	25	12.4	182