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The Latest about Tubes

The development of new tubes is dominated by the demand for higher frequencies increasing the capacity of communication bands. We can offer a 12 GHz travelling wave tube for use in radio relay and a 6 GHz tube for satellite communications. We are also producing and marketing klystrons for television as part of our increased activity in the field of transmitters. Our measuring tubes are currently available from 30 GHz to 110 GHz, but the next five years will see this range extended to include 155 GHz tubes.

One of our new exhibits in the tubes section in Paris was the RW 87 6 GHz radio relay travelling wave tube covering the 5.9 GHz to 6.5 GHz frequency range. Compared with the earlier RW 48 (3.6 to 4.2 GHz) and RW 85 (6.425 to 7.125 GHz), the output power of the RW 87 has been doubled to 22 W while the gain remains unchanged at 40 dB. Each tube weighs 2.5 kg. Efficiency can be as high as 25% and noise is given as 22 dB. A minimum of 10,000 operating hours is guaranteed, the average life being over 20,000 hours transmission time. Another feature of this family is the fact that no preheating times are required for putting the tubes into operation.

The RW 1120 12 GHz travelling wave tube (10.7 to 13.2 GHz) with 40 dB gain is available for use in commercial radio relay and for simultaneous transmission of several television channels (CARS/CATV). Operational output power is 20 W with saturation occurring at 35 W. In contrast to this tube, the travelling wave tube developed at the request of the German Federal Ministry for Research and Technology for future satellite systems delivers an output power of 5 kW. It has an operating frequency of 30 GHz to 33 GHz. The line voltage is 20 KV.

In addition to the range of 1" standard vidicons with a 300 mA and 95 mA heater current, we can now supply a series of 2/3" vidicons for small, economy-priced television cameras. The highly sensitive XQ 1200 multi-diode vidicon is also available with a 95 mA heater as model XQ 1205. Special-purpose tubes, e.g. vidicons with infra-red sensitivity, SEC picture tubes and image intensifier tubes, complete our production program. We can also supply internal rasters and fiber-optical and radiation-resistant front plates.

The new RWO 110 B backward-wave oscillator means that the frequency spectrum used for examining active and passive components for millimeter wave transfer systems now ranges from 30 GHz to a new high of 110 GHz. Both this newly developed oscillator and the older RWO 50 oscillators can be used for taking measurements in plasma physics and microwave spectroscopy. The purely electric tuning common to all types of oscillators is suitable for the simple sweeping of wide frequency bands.

A series of industrial generator tubes with the following type designations is available covering the 1.5 to 150 kW power range: RS 3010 C, RS 3026 C, RS 3040 C, RS 3060 C, RS 3150 C. These tubes can be supplied either with forced air cooling or integrated water cooling, as desired. The coaxial electrode system, low gain factor and medium transconductance greatly facilitate the development of generators. The operating data of, for instance, the RS 3150 are as follows: with 4.4 kW filament power and U_a = 12 kV plate voltage, the tube delivers 170 kW useful power at 30 MHz.