

Tube of the Month

4X150A

World War II drove many technological innovations. The needs of modern warfare especially in the air required more power, higher frequency and increased miniaturization. Important developments were made in better insulation, glass seals and efficient cooling methods. During its experiments in 1945 on the 4X500A, EIMAC developed a process for making a forced air-cooled plate by folding a single sheet of metal like a Christmas ribbon.

In 1947, EIMAC introduced the 4X150A. It was very small for its power and would operate up to 500 MHz. Several types of sockets and ceramic chimneys were also developed for this tube. This tube was small enough to operate in UHF cavity amplifiers and within the inductive elements of VHF amplifiers. For use in aircraft, a version that used a 26.5 volt filament was designated the 4X150D. In the 1950s, the ribbon anode was improved with more surface area and a new tube, the 7034/4X150A, was developed with a dissipation of 250 watts. EIMAC then started making this tube with the new ceramic insulation. They first designated it the 4X250B, but there was confusion with the glass insulated tubes, so they renamed it the 4CX250B. All of these versions were made with coaxial input connections for use in cavity amplifiers that would operate into microwave frequencies.

These tubes became a big hit with hams. A very popular 2 meter amplifier was widely duplicated that used copper plumbing to form the plate tank. The tubes were mounted in the ends of the pipes. Air was forced through the tubes and out through the pipes. A pair of 4CX250Bs would handle a KW of input at 2 meters with very low drive power.

Today this family of tubes is still produced in many variations with up to 350 watts dissipation. So far, 22 different variations of this family of tetrodes are included in the N6JV tube museum (n6jv.com).

Norm N6JV

