

### Tapered power transducers for operation at 1 and 3 MHz.



Fig. 3. Tapered power transducer with diameter of the taper 10 mm. Diameter of the housing is 25.4 mm. Each transducer has water protected Aluminum housing with installed coaxial cable RG-174/U (~1.2 m) and BNC connector at the ends. Connection of such coaxial connector with the cable is shown on Fig. 2 in section “HIFU transducers in closed metal housing”.

We build tapered transducers with diameter of the taper 8 mm, 10 mm, 12 mm, and 14 mm. Any transducer can provide power intensity not less than 5 - 7 W/cm<sup>2</sup> in the water-type medium or in a biological tissue.

Such transducers can be built for operation at 1 MHz or at 3 MHz.

Each transducer contains inner electric matching circuit to get electric impedance 40 – 60 Ohm at its work frequency.

Each transducer provides efficiency ~ 50 % in respect to feeding electric power. This feeding electric power should not exceed 10 – 15 W (in CW mode). It is accompanied by some heating of the transducer’s housing. This heating should not exceed 45 – 50 °C.