

February 19, 1998

Sales Administrator

Dear Sir,

Here is a casual specification for a transducer that my client company wishes to obtain. Though we only need a few of these devices for evaluation at this time, the end application is for a product with an expected production rate of ten to fifty units per month ... possibly more.

To make a purchase order easy on all of us, I have modeled the specification around a standard product:

Model CF3579

In a recent telephone conversation ... and after some thought ... your very helpful associate decided that the transducer could be sold to us for the price of \$250 each in "one at a time" quantities.

His reasoning was that a) since we want a simplified version of a standard product ... it should be less expensive than normal but ... b) since it is a little different than usual it should cost more ... therefore ... in a wonderful example of the balance of nature ... the price should be the same as for a standard unit.

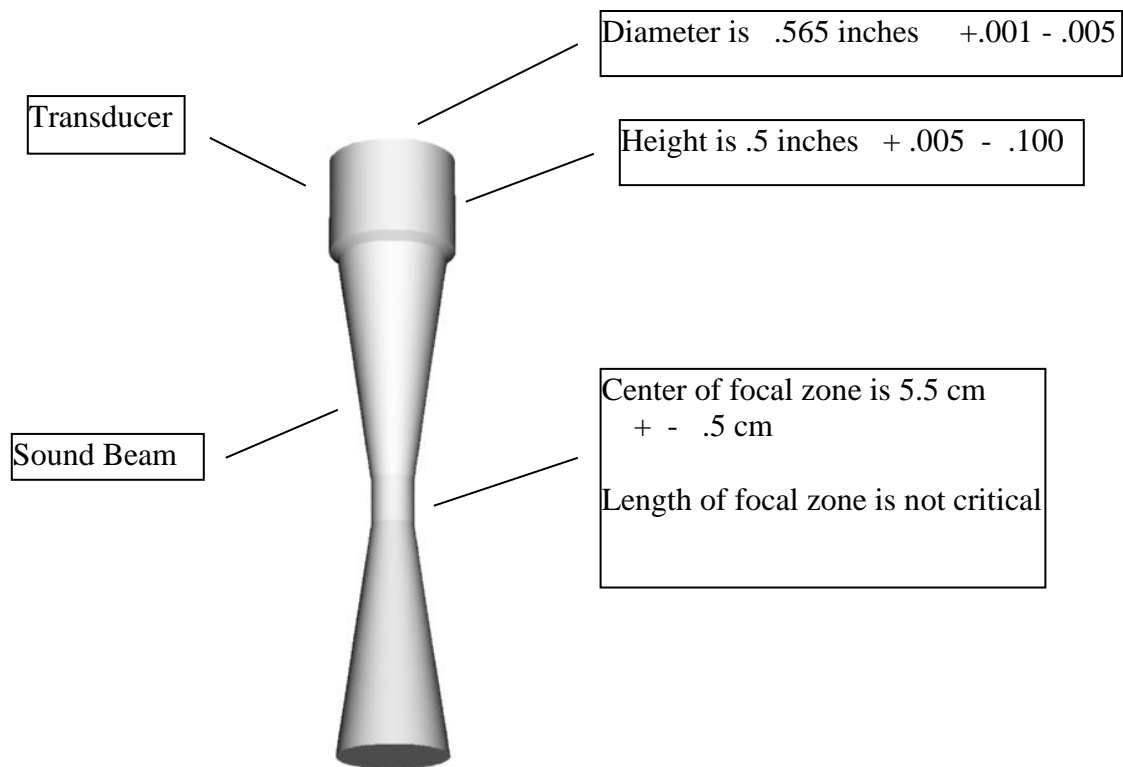
If this is OK with you, I would like a quotation for quantities of 1, 5 and 50 units. I would also like an estimated delivery schedule for these devices.

I am looking forward to being your customer and appreciate your good effort on our behalf.

Sincerely Yours,

- CN

Craig E. Nelson  
Engineer



Notes:

1. Center frequency of the transducer is 2.25 MHz + - 5 % .
2. The transducer housing should not contain a tuning or impedance matching network.
3. The outer casing for the transducer should preferably be made of some form of bondable plastic but 303 stainless steel is OK. Knurling is OK ... but not required. There should be no hole in the side of the case.
4. The piezoelectric element front electrode should preferably be electrically insulated from the front contact surface of the transducer. If isolation is not possible, don't worry about it.
5. Electrical connection should preferably be made by means of an RG-174 or smaller coaxial cable (shield goes to "front" side of element) that exits the top end of the transducer housing somewhat off toward the edge and at an angle of about 45 degrees. It is OK if the connection is a simple (red-black ... black is "front" side) twisted pair and exits straight out from the center of the back of the housing. The leads should be about 4 inches long.
6. Since maximum sensitivity rather than axial resolution is the requirement in this application, the piezoelectric element should be air backed. A "foam" backing material is OK. Straight epoxy or a loaded epoxy backing is not OK.
7. The piezoelectric element contained within the housing may be as small as .375 inch diameter but .. no smaller.
8. Quarter wave matching of the front surface is desirable.
9. Use of a curved piezoelectric element is desirable but not required.