# **Doppler Flow Cuffs**

## and

# **Special Doppler Flow Transducers**



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### Suction-On DopplerTransducers



\*patented

The cup body of these transducers is molded of silicone. The vacuum line is made of silastic tubing 40 cm long and terminates in a standard luer female hub. Under a light vacuum the units pull down onto a blood vessel. The piezoelectric crystal is approximately 1 mm diameter and mounted at a 45-degree angle. The active surface faces left as you stand at the lead side looking at the cup as it is applied to the vessel. The crystal is encased in medical grade epoxy with an epoxy lens.

#### **Model A**

Cup diameter: 26 mm Vacuum: 0.8 mm silastic tubing, approx. 10 mm Hg vacuum required Application: Used for monitoring aortic occlusions and for reactive hyperemia. This size is meant for large animals such as horses, sheep, cattle, large dogs etc.

#### **Model B**

**Cup diameter:** 7 mm **Vacuum:** 0.8 mm silastic tubing, approx. 7 mm Hg vacuum required **Application:** Used during surgery to determine patency of carotid arteries and to record the reactive hyperemic response of the coronary circulation.

#### Model C

**Cup diameter:** 3 mm **Vacuum:** 0.5 mm silastic tubing, approx. 3 mm Hg vacuum required **Application:** This is the smallest, lightest vacuum probe available. It is used on small animals to check for arterial patency or for determination of the reactive curve. Typical applications include cat carotid and coronary and rat carotid and coronary.

# Suction-On DopplerTransducers

Model	Frequency Choices (MHz)	Diameter (mm)	<b>Base Price</b>
A-xx	5, 10 or 20	26.0	
B-xx	5, 10 or 20	7.0	
C-xx	5, 10 or 20	3.0	

Connector Type	Options
N (none)	
4 M (4-pin Male)	

### **Cuff-Type Transducers**

#### **Models E**



Model E Cuff-Type Transducer (Silicone Cuff)

**Model E** The body is molded of flexible silicone and is slit lengthwise so that it can be slipped around a blood vessel. The length can be adjusted by trimming down to the dimension required but not less than 3 mm to maintain stability. The piezoelectric crystal is approximately 1 mm diameter and mounted at a 45-degree angle. The crystal is encased in medical grade epoxy with an epoxy lens. This transducer can be used to determine the effectiveness of vascular occlusions, etc. It can be used for chronic implants in dogs, monkeys, cats, rats, etc. when sutured in place.

Model	Frequency Choices (MHz)	Diameter (mm)	Base Price
E-xx-0.8	5, 10 or 20	0.8	
E-xx-1.0	5, 10 or 20	1.0	
E-xx-1.3	5, 10 or 20	1.3	
E-xx-1.6	5, 10 or 20	1.6	
E-xx-2.0	5, 10 or 20	2.0	
E-xx-2.4	5, 10 or 20	2.4	
E-xx-2.8	5, 10 or 20	2.8	
E-xx-3.2	5, 10 or 20	3.2	
E-xx-3.7	5, 10 or 20	3.7	
E-xx.4.0	5, 10 or 20	4.0	

Connector Type	Price
No Connector	
4 M (4-pin Male)	

### Cuff-Type Transducers

(continued)

**Models ES** 



Model E Cuff-Type Transducer (Silicone Cuff)

**Model ES** The body is molded of flexible silicone and is slit lengthwise so that it can be slipped around a blood vessel. The Model ES cuff is similar to the Model E Cuff, but includes the addition of an integral canal with a suture tie to secure the cuff around the blood vessel for long-term chronic implantation. The length can be adjusted by trimming down to the dimension required but not less than 3 mm to maintain stability. The piezoelectric crystal is approximately 1 mm diameter and mounted at a 45-degree angle. The crystal is encased in medical grade epoxy with an epoxy lens. This transducer can be used to determine the effectiveness of vascular occlusions, etc. It can be used for chronic implants in dogs, monkeys, cats, rats, etc. when sutured in place.

Model	Frequency Choices	Diameter	Base Price
	(MHZ)	(mm)	
<b>ES-xx-0.5</b>	5, 10 or 20	0.5	
ES-xx-0.8	5, 10 or 20	0.8	
ES-xx-1.0	5, 10 or 20	1.0	
ES-xx-1.3	5, 10 or 20	1.3	
ES-xx-1.6	5, 10 or 20	1.6	
ES-xx.2.0	5, 10 or 20	2.0	
ES-xx-2.4	5, 10 or 20	2.4	
ES-xx-2.8	5, 10 or 20	2.8	
ES-xx-3.2	5, 10 or 20	3.2	
ES-xx-3.7	5, 10 or 20	3.7	
ES-xx-4.0	5, 10 or 20	4.0	
ES-xx-5.0	5, 10 or 20	5.0	
ES-xx-6.0	5, 10 or 20	6.0	
ES-xx-7.0	5, 10 or 20	7.0	
ES-xx-8.0	5, 10 or 20	8.0	
ES-xx-9.0	5, 10 or 20	9.0	
ES-xx-10.0	5, 10 or 20	10.0	
ES-xx-11.0	5, 10 or 20	11.0	
ES-xx-12.0	5, 10 or 20	12.0	

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ES-xx-13.0	5, 10 or 20	13.0	
ES-xx-14.0	5, 10 or 20	14.0	
ES-xx-15.0	5, 10 or 20	15.0	
ES-xx-16.0	5, 10 or 20	16.0	
ES-xx-17.0	5, 10 or 20	17.0	
ES-xx-18.0	5, 10 or 20	18.0	
ES-xx-19.0	5, 10 or 20	19.0	
ES-xx-20.0	5, 10 or 20	20.0	
ES-xx-21.0	5, 10 or 20	21.0	
ES-xx-22.0	5, 10 or 20	22.0	
ES-xx.23.0	5, 10 or 20	23.0	
ES-xx-24.0	5, 10 or 20	24.0	
ES-xx-25.0	5, 10 or 20	25.0	

Connector Type	Options
No Connector	
4 M (4-pin Male)	

### Model F



Model F Suture-Down Transducer

#### Model F Suture-Down Transducer

This transducer consists of a piezoelectric crystal bonded with medical grade silicone to a 2-cm-square pad of closely-woven acrylic. The crystal is approximately 1 mm diameter and mounted at a 45-degree angle. The crystal is encased in medical grade epoxy with an epoxy lens. The active surface faces left as you stand at the lead side with the pad on top.

Model	Frequency Choices (MHz)	Diameter (mm)	Base Price
F-xx	5,r 10 or 20		

Connector Type	Options
N (none)	
4 M (4-pin Male)	

(continued)

### Model G



### Model G Extracorporeal Flow-Through Transducer

This transducer consists of a stainless steel tube with a piezoelectric crystal mounted in it. The inside surface is finished to reduce turbulence. The crystal is approximately 1 mm diameter and mounted at a 45-degree angle. The crystal is encased in medical grade epoxy with an epoxy lens. The leads consist of a plastic jacketed cable 90 cm long. This transducer is designed for use as an in-line flow probe for pump perfusion studies or passive perfusion of a vascular bed. See the application guide for more details.

Model	Frequency Choices (MHz)	Diameter (mm)	Base Price
G-xx-1.8	5, 10 or 20	1.8	
G-xx-2.4	5, 10 or 20	2.4	
G-xx-3.4	5, 10 or 20	3.4	
G-xx-4.4	5, 10 or 20	4.4	

Connector Type	Options
N (none)	
4 M (4-pin Male)	

(continued)

### Model H



Model H Hand-Held Wand Transducer

### Model H Hand-Held Wand Transducer

The crystal is mounted at the end of a two-stage tubular stainless steel probe. The overall length of the probe is 120 mm. The tip dimensions are: 2.8 mm diameter by 35 mm long. The handle dimensions are: 4.8 mm diameter by 85 mm long. The shielded plastic jacketed leads exit the handle with a silicone strain relief. The crystal is approximately 1 mm diameter and is embedded in epoxy with an epoxy lens. The crystal is oriented at 45-degrees to the axis of the probe handle. This transducer can be used as an effective way to check arterial shunt preparations (carotid, etc.).

Model	Frequency Choices (MHz)	Diameter (mm)	<b>Base Price</b>
H-xx	5, 10 or 20		

Connector Type	Options
N (none)	
4 M (4-pin Male)	

(continued)

### Model N



Model N Micro Vessel Needle

### Model N Micro-Vessel Needle

This transducer consists of a Doppler crystal mounted on the end of a section stainless steel hypodermic tubing 6 cm long. The crystal is approximately 1 mm diameter and mounted at a 45-degree, 90-degree, or 180-degree angle. The crystal is encased in medical grade epoxy with an epoxy lens. It is used for chick embryo studies, or any other study where the vessel is small or in close confinement. A microminipulator is often used for placement of this probe. We offer it with a choice of three crystal mounting angles. The choice depends on the experimental set-up and the needle mounting. *Whatever the choice, the end result should be an angle such that the sound is directed into the flow and at an angle 45 degrees to the flow. See drawing below.* 

Model	Frequency Choices (MHz)	Angles (degrees)	Base Price
N-xx-yyy°	5 or 10 or 20	45° 90° or 180°	



Connector Type	Options
N (none)	
4 M (4-pin Male)	

(continued)

#### Model P



### Model P Knife-Edge Transducer

This transducer consists of a piezoelectric crystal approximately 0.4 mm by 1.6 mm. A clear epoxy lens envelops the entire crystal. This configuration was developed for microvascular application in acute experimentation. Vessels as small as 200 microns can be chosen for study. With careful surgical preparation, our tiny probe can be slipped into place for accurate blood velocity measurements.

Model	Frequency Choices (MHz)	Diameter (mm)	Base Price
P-xx	5, 10 or 20		

Connector Type	Options
N (none)	
4 M (4-pin Male)	