# **Quartz and Pyrex Plasma Tubes**

## Effective Sept. 2009

#### **General Information**

This brochure provides descriptions and prices (in US dollars) of the various types of plasma discharge tubes that are currently available for experimentation and use with the Rife/Bare and similar RF based systems as well as the high voltage based systems like the EMEM 3. The tubes are fabricated from the finest quality scientific Quartz or Pyrex glass stock produced by Corning Glass Works. One of the unique things we do in the tube fabrication process is to anneal them. This requires the tube to be exposed to temperatures in a kiln for several hours just below the softening point of the glass. This process relieves the tube of any focused stress points and the end result is a very strong tube, relatively speaking. I've had tubes that have literally bounced off pavement and survived just fine....however, I would not try this at home.

The tubes can be filled with a variety of noble gasses including 100% Argon, an Argon/Neon mix, an Argon/Krypton mix, 100% Helium, or a mix of Helium and Neon. Other gases or gas mixtures are available on special request. Contact me for detailed info. All gases used are of the best available lab grade. All tubes are tested on a Rife/Bare and/or EMEM 3 system before being released for sale.

Quartz & Pyrex offer several big advantages over the more common "softer" glasses that are used by all neon sign shops. Some of main advantages are;

- 1. Both are a stronger glass and the stock from which any particular tube type is made has a heavier wall thickness than the comparable item in the soda-lime or leaded (softer) glasses.
- 2. Pyrex will safely handle temperatures far greater than the other glasses, with the exception of Quartz, which will easily handle temps in excess of 1600° F.
- 3. Pyrex has a far greater chemical resistance compared to the other types of glasses.

Anyone wishing further details or information can contact me by:

Phone (toll free): (866) 465-4960 or (780) 465-4960

E-mail: rifetube@telus.net

Website: http://www.geocities.com/rifetube/gallery.html

Postal Mail: 9828-79th Street

Edmonton, Alberta, Canada T6A 3G1

Bill Cheb

# TABLE OF CONTENTS

General Info		Page 1	GO
<b>Standard Phanotron Tube</b>		Page 4	GO
'39 Phanotron Tube		Page 6	GO
8 inch Phanotron Tube		Page 7	GO
<b>Standard Hand Held Phanotron Tube</b>		Page 8	GO
Mini Hand Held Phanotron Tube		Page 9	GO
Mini Phanotron Tube		Page 10	GO
<b>U-Tubes:</b>	1 inch Pyrex	Page 11	GO
	1 inch Quartz	Page 11	GO
<b>Straight Tubes:</b>	1 X 18 in. Pyrex	Page 12	GO
	1 X 24 in. Pyrex	Page 12	GO
	1 x 18 in. Quartz	Page 13	GO
	1 x 18 in Quartz (special)	Page 13	GO
<b>Single Bubble Tube:</b>	Pyrex	Page 14	GO
	Quartz	Page 14	GO
<b>Double Bubble Tube:</b>	Pyrex	Page 15	GO
	Quartz	Page 15	GO
<b>Super Straight Tube:</b>	Pyrex	Page 15	GO
	Quartz	Page 16	GO
<b>Super U-Tube:</b>	Pyrex	Page 16	GO
<b>SPECIAL TUBES:</b>			
7 X 1/2 in. Quartz		<b>Page 17</b>	GO
12 in. Spiral Tube		Page 18	GO
EMEM 2/3 SUPER Tube		Page 19	GO
Enhancer Bulb		Page 20	GO
Hand Held Tube Pair		Page 20	GO
Omega Tube		Page 21	GO

Pyrex Micro Tube	<b>Page 22</b>	GO
PLASMA TUBE ACCESSORIES:		
<b>Copper Collars</b>	Page 23	GO
<b>High Voltage Wire</b>	Page 24	GO
<b>End Cap Rubber Boots</b>	Page 25	GO
All about Getters	Page 26	GO
Price List	<b>Page 27</b>	GO
Payment and Shipping Methods	Page 28	GO
Afterword	Page 28	GO

## The Tubes

#### **Phanotron Tubes**

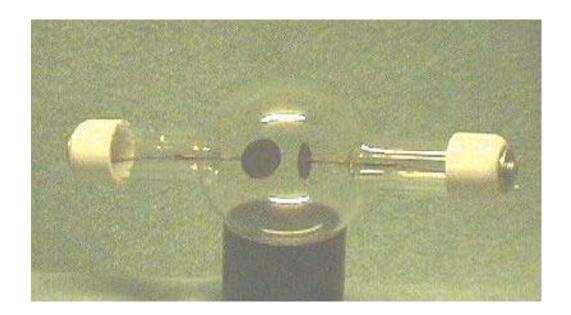
In general, all the Phanotron tubes we make come in two slightly different versions. One version is optimized for use with a radio frequency type of device like a Rife/Bare system, The other version is optimized for use with a high voltage device like an EMEM system. The price is the same for either version. All Phanotron tubes are filled with Helium.

The tube shown below is our standard Phanotron tube (P-tube) and is patterned after the original tube type that Rife and his associates used in Rife's MOR experiments. The main advantages of the P-tube are; extremely easy lighting, and it has one of the lowest SWR's (when used with a Rife/Bare or similar system) of any of the other tube types. It is very stable after a warmup of a few minutes and requires little or no tuning readjustment for lowest SWR. The tube comes filled only with Helium and generates a more penetrating and focused wave than other tube types. This tube type is considered by many to be the "King" of the plasma tubes since it is the one that Rife developed and used.

This tube is also available in a high voltage version suitable for use in an EMEM 3 or similar type of device.

The current price is \$269. Price breaks are available for anyone ordering in quantity.





We also have the standard Phanotron tube available without end caps. This is for those who want to build a system with the tube integrated and mounted in their cabinet where there would be no requirement for constantly connecting and disconnecting the tube. Connection to the tube is made by soldering your attachment wires to the wires coming out of each end of the tube. The tube without end caps is priced at \$229. You can see a picture of the tube below.



As a matter of interest, the Phanotron tube is now being used with Dan Tracy's (the inventor) EMEM 3 low cost device with almost spectacular results. From recently received reports, the Phanotron seems to generate effects with much greater intensity and effectiveness than the normal straight tube. The other big advantage with using the Phanotron tube with the EMEM 3 system is that there does not need to be any physical contact with the tube in order to receive the effects. Dan can be reached at: (518) 548-8495 for further info on his system.

Dr. Dick Loyd is also fabricating an advanced EMEM 3 device for sale called the EM7V. He can be reached at (206) 244-1383 or you can Email him at; drloyd@comcast.net, and you can visit his alternate health website at; http://www.RoyalRife.com/.

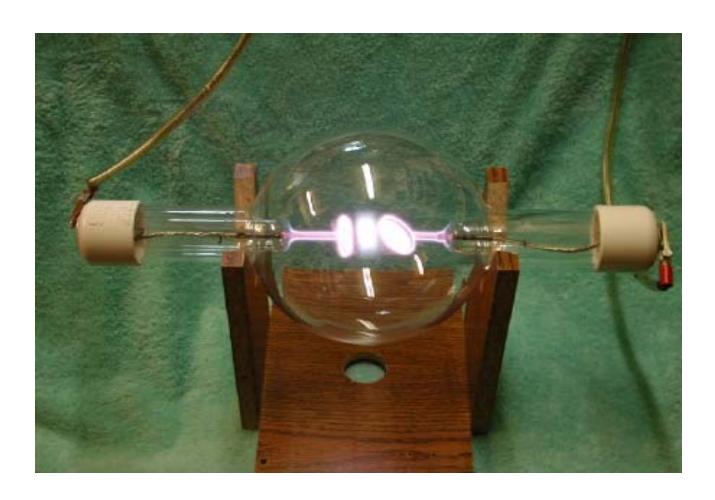
### '39 Beam Ray Phanotron tube

This P-tube is an exact duplicate (with the exception of the end caps) of the tube that was found with one of the original 1939 Beam Ray machines that was acquired and reverse engineered by Aubrey Scoon. Further info can be seen at his website at: http://www.scoon.co.uk/. On the basis of some preliminary tests done by Aubrey, this tube appears to be a real performer. To quote some initial comments: "I did one quick test on the tube and it worked perfectly, in fact I'm really impressed with it. I tried it on one of my own experimental prototypes and I got a beautiful violet white plasma around the electrodes, with a most interesting free floating reddish-orange plasma cloud in the space between them. The RF field as measured from the tube was at least 50% higher than the same setup on one of your standard phanotrons with 15mm He, and it took quite a lot of power without excessive heating. Visually, its quite striking, certainly the most visually impressive tube I've seen to date." The tube measures 12 inches end to end and has a 5 inch ball in the centre. The electrodes are heavier than the standard P-tube and can therefore handle considerably more power, although this tube will work well with low power machines. The high voltage version of this tube is being used very successfully in EMEM 3 machines and also has been adapted for use with the Multi Wave Oscillator (MWO). The tube is priced at \$398 and is pictured below.



### The Big One - An 8 in. P-tube

The largest in our P-tube selection is the very impressive giant Phanotron tube. Many old pictures of Rife's original systems show a tube of this size in use. It measures almost 16 inches end to end with a large 8 inch ball in the centre and massive electrodes. The tube is designed to handle 3-4 hundred watts of power which it does quite well, but also does surprisingly well with standard Rife/Bare systems putting out power in the 150 watt range. A high voltage version is also available for use with an EMEM 3 or similar system. This tube has also been very successfully adapted for use with the various MWO devices out there. The tube is filled with 100% Helium as the originals were. Due to it's massive size it does need to be handled carefully. The tube is priced at \$529 and is pictured below.



Here is the 8 inch Phanotron tube in an energized state.

#### **Hand Held Phanotron tubes**

The next tube type in the P-tube category are the hand held Phanotron tubes. These tubes are patterned after one of the original tubes used in Rife's time. The tubes can either be used as a hand held tube or mounted on a moveable arm such as the type used with a dentist's mirror or drafting lamp. This has the advantage of allowing the user to direct the energy from the tube with great precision.

#### **Standard Hand Held EMEM P-Tube**

This tube was designed in response to a growing demand for a tube that can be used with the various high voltage systems currently available, like the EMEM 3, EM7V Bio-Tech 2000. Photon Sound Beam, etc. It very easily allows the user to manipulate the tube and direct the energy very close to the body so that any particular area of concern will receive the most intense and focused energy possible. Those users who previously used the standard Phanotron tube in such a fashion find this new tube far more user friendly and very easy to use. This tube can also be used in the same way as the standard P-tube if the user so wishes. The high voltage cable and rubber boot for the end cap is shown in the Tube Accessories section of this catalog. The tube is priced at \$369.



Pictured above is the 4 in. HH P-tube unenergized.



Here we have the same tube shown in an energized state.



Rear of tube showing connections

#### **Hand Held mini P-tube**

This next tube is the mini Hand Held Phanotron tube. It was developed to be used with either a Rife/Bare or an EMEM 3 system. The idea of this small tube is to be able to get very close to the body and work on very specific areas as well as using it to activate specific acupuncture points to accelerate the body's own healing response as well as clearing the body's energy field in specific areas. And from recently received feedback, this tube is proving to be extremely successful in these uses. This tube is priced at \$239 and is shown on the next page.



Hand held mini P-tube shown in its energized state.



Hand held mini P-tube, shown unenergized.

#### Mini Phanotron tube

A fairly recent addition to the Phanotron tube lineup is what I call the mini Phanotron tube, or the mini P-tube. It was developed to be used with a portable/wearable Rife system. The tube is intended to be used with power levels in the 15 to 25 watt range. There are a few individuals who are now developing a Rife system that is small enough for a person to wear while going about their daily activities and get the beneficial effects of "Rifing" at the same time.

The tube does of course, work with a normal, full blown Rife system, but how well it will stand up to the higher power levels over time has not been fully tested yet.

The picture on the next page shows the tube energized with a standard Rife/Bare system set at low power. Note the 25  $\phi$  piece below the tube for size comparison. The mini P-tube is priced at \$125.



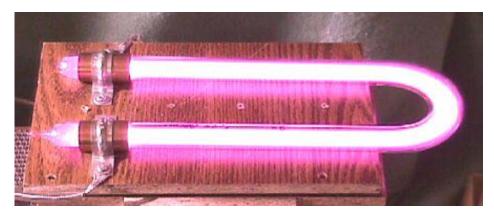
Mini P-tube shown energized.

## The U-Tube

The U-tube as indicated by it's name, is in the shape of a "U". Basically, it is a straight 27 inch tube bent in the shape of a U for space efficiency. The diameter of the tube is normally 1 inch (or 2 inches in the case of the Super U-tube). Special fabrication techniques are employed when the bend is created to ensure that the wall thickness of the glass at the bend does not thin out, but remains the same as the rest of the tube.

This tube has no internal electrodes and requires an external wire wrap and/or the use of copper collars as external electrodes to activate the tube. The tube lights very easily using the collars and very reasonable SWR's can be achieved. Since Pyrex can tolerate much higher temperatures and has a greater wall thickness than the equivalent item in the softer glasses, the major problem with external wire wrap tubes has been eliminated by the use of pyrex in this tube type. Namely, the perforation of the tube wall due to potential hot spots at points along the wire wrap. The tube comes with a getter and is warranted against wall perforation. The price is \$249.

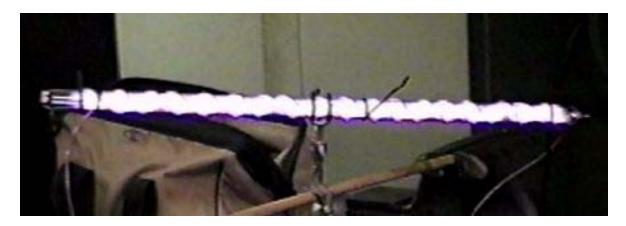
The 1 in. dia. U-tube is also available in a Quartz version. Many users prefer Quartz since Quartz will pass all wavelengths of light. Quartz tubes will also generate significant amounts of Ozone when energized, which many consider to be a major advantage. The 1 inch Quartz U-tube is priced at \$369.



Shown above is an energized 1 in Pyrex U-Tube.

#### The Straight tubes

Straight tubes normally come with a getter and without internal electrodes. As with the U-tube, the straight tube requires an external wire wrap and/or the use of copper collars to energize the tube. And like the other tubes shown here, is warranted against wall burn thru....a common occurrence with tubes made from leaded and other "softer" glass. This tube type is normally available in two different lengths; 18 in. long and 24 in. long and the tube diameter is 1 inch. Lengths and diameters other than what is listed above can be made to special order. Please contact me for details. This tube is often the one used by those just starting out to experiment with their new Rife system. The price for the 18 in. tube is \$189 and the 24 inch tube is \$249.

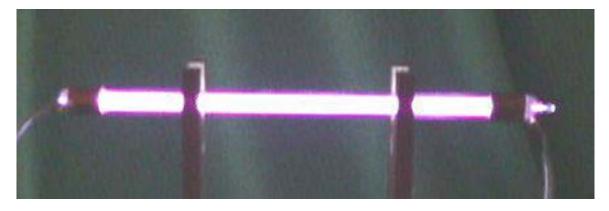


This is a wire wrapped 24 inch straight tube, shown energized.



This is the same tube energized, with copper collars as electrodes.

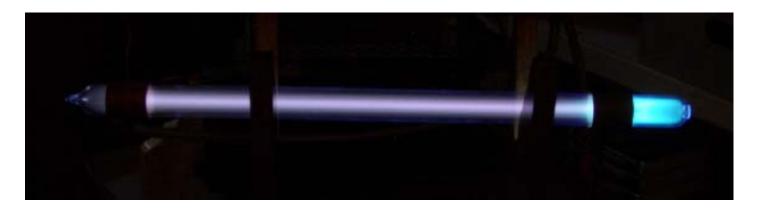
A very popular and effective tube is the 1 inch by 18 inch long Quartz tube. From feedback received from a number of users, the effects from this tube can often be felt by many while not felt from other tube types. The effects are most noticed when the tube is pulsed. The tube does not come with internal electrodes and is best used with external collars and/or an external wire wrap. For those into Ozone therapy, this tube, like other Quartz tubes, has the added benefit of generating considerable amounts of Ozone when energized. The tube is priced is \$229 and is pictured below. Other lengths of the 1 inch Quartz tube can be made to special order.



Energized 18 inch straight Quartz tube.

## **NEW!** Special 18 in. Quartz Straight Tube

This special high pressure Quartz straight tube was just recently developed for use with Jim Bare's new RF system. It is filled with a high pressure gas mix of Argon, Neon and Helium. Initial test results indicate that this tube is very very effective and the results are quite exciting. The tube can also handle very high power levels. The tube has been run with power levels up to 400 watts with no ill effects to the tube. And as with other Quartz tubes, this one also generates noticeable amounts of Ozone. Note the very tight plasma beam. This tube is priced at \$295 and can be seen in the picture on the next page.

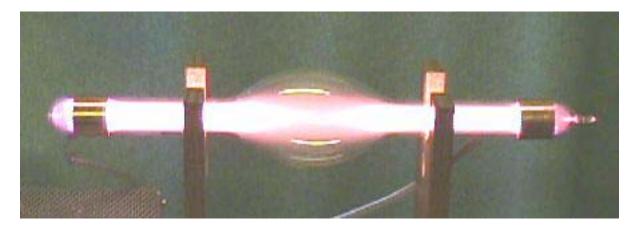


**Energized Special Quartz Straight tube using copper collars** 

#### The Bubble tube

Basically, this can be considered to be a modified straight tube. The tube is made from 25 mm Pyrex glass tube stock, and blown to have an egg shaped bubble in the centre. The bubble measures approx. 3 1/2 inches by 5 inches. And like the U-tube, special glass blowing techniques are used to ensure that the wall thickness of the glass at the bubble retains the same wall thickness as the rest of the tube. The overall length of the tube is 18 inches. Other lengths can be made to special order. Many consider the extra gas volume offered by this tube to allow stronger and more intense effects. This tube comes normally filled with our 90/10 Argon/Neon mix and comes with a getter.

The price is \$249. A premade set of copper collars for this tube and other 1 in. dia. tubes is \$29 per set, or you can make up a set yourself from 1 in. copper pipe.

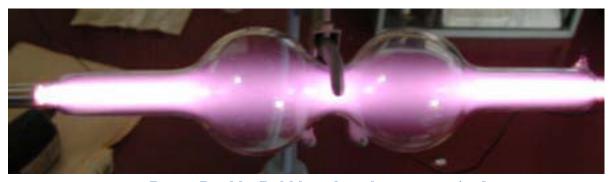


18 inch Pyrex Bubble tube shown energized, using copper collars as external electrodes.

Next we have a bubble tube made from Quartz. Note the purple/blue outline along the edges of the glass. This is due to the ability of Quartz to pass all wavelengths of light. And as with all Quartz tubes, this one also generates significant amounts of Ozone when energized, particularly when filled with H-gas. This tube is priced at \$349 and is normally filled with our Argon/Neon mix. You can see it on the next page.



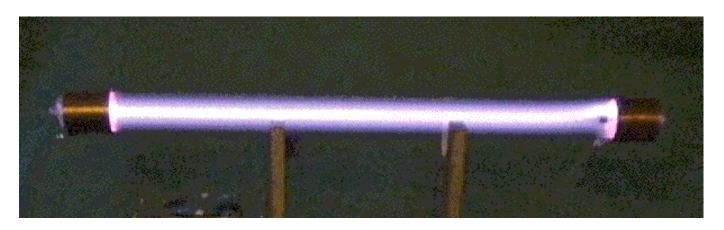
The most recent addition to the bubble style of tube is the Pyrex Double Bubble tube shown on the next page. And as with the single bubble tubes, the double bubble tube offers even more gas volume to the user to allow for increased intensity of effects. The tube measures 18 in. in length and has two round bubbles along the length of the tube. The bubbles measure 3.5 inches in dia. This tube is priced at \$299 with a getter. The Double Bubble tube in the Quartz version is priced at \$399.



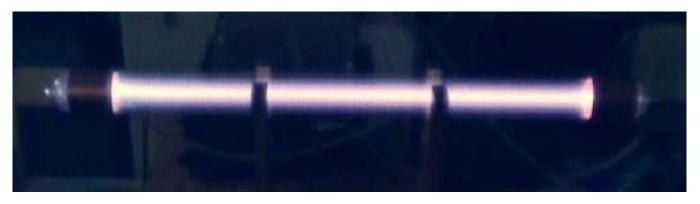
Pyrex Double Bubble tube, shown energized

#### The Super Tubes

A recent addition to the plasma tubes for use with Rife systems is what I call the "SuperTube". This tube was jointly developed by myself and Jim Bare. It is a 24 inch long straight tube that is 2 inches in diameter....much larger than what's been available to date. The tube comes normally filled with our 90/10 Argon/Neon gas mix. This tube comes with a getter incorporated within it. And the getter does make a huge difference in the color stability of the plasma and the stability of the plasma itself. This tube is easy to light and has a very stable plasma. You do need to run this tube with at least 150 watts...more is better. As a matter of interest, this tube is currently being used successfully with Rife systems that have output power levels of up to several hundred watts. After extensive testing, Jim Bare has determined that the Super Tube is currently the most powerful in terms of generating effects, particularly if the tube is pulsed. This tube is also very easy to light and is very stable and runs very nicely at the lower power levels...in the 90 watt range. It will of course handle much higher power levels if desired. The price of the Super Tube is \$298. Quartz versions of the SuperTube are also available. The price is \$395.



The Pyrex Super Tube shown energized.



Above is an energized Quartz Super Tube.

The most recent development in the Super Tube line is an Argon or Argon/Neon filled Super U-tube. Essentially, this is a straight 27 inch tube that is bent in the shape of a "U". The diameter is 2 inches. This tube is proving to work extremely well with typically powered Rife systems of 100 to 300 watts. This tube lights extremely easily and is very stable....more so than the straight version and offers the same advantages as the straight versions of the Super Tube. The user also has the big advantage of the space saving features of the U configuration. As with all Pyrex Super Tube versions, this tube comes with a getter. The price is \$389. If you want a pre-made set of 2 inch copper collars to use as external electrodes with the Super Tubes, the cost is \$49 per set. A Quartz version is available on special request.

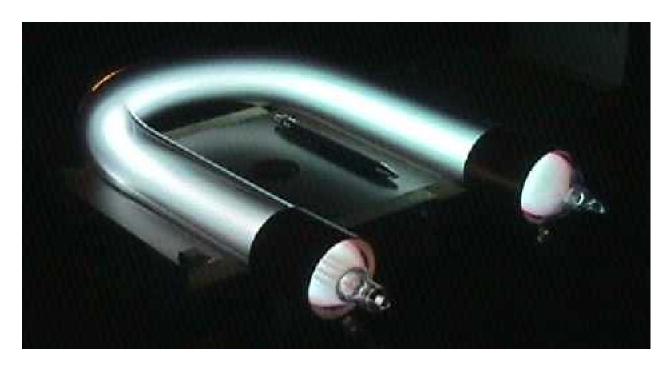


Photo above is an energized Pyrex Super U-tube.

### **Special Tubes**

There are a number tubes in this category. The first one is a Quartz only Mini tube, just 7 inches long. It was developed to be used with just a modified CB unit only....modified meaning that the CB is adjusted/modified to have it's output power level increased to 10 to 20 watts. And it works very well in this situation. This allows one to put together an "economy" Rife system that does not require the use of expensive antenna tuners and linear amplifiers. The tube can be filled with 100% Argon, an Argon/Krypton mix, or an Argon/Neon mix. As it turns out, it also works great with a standard Rife system having typical power output levels of 50 watts or better. As a matter of fact, it has extremely low SWR's (in the range of 1.1), is very stable, and always lights very easily. Being made from Quartz, this tube lets users get into Quartz tubes at a fairly low cost. See the photo on the next page. The price of the Quartz mini tube is \$49.

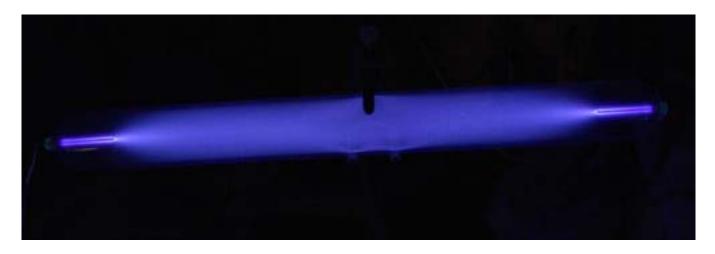


Our newest plasma tube for use with the EMEM or similar type of high voltage system is called the 'Spiral' Tube. So called because that's exactly what it is. The tube is in the shape of a flat spiral. It's size is a huge 12 inches in diameter and as a result, covers a very wide area which allows the user to work with a particularly large area of interest. The tube is normally filled with our Helium/Neon gas mix, but can be filled with other gases on special request. This tube also works extremely well with pretty much any of the hand held plasma tube devices out there. It's priced at \$395 and you can see a picture of the tube below.



### **NEW!** EMEM 2/3 SUPER Tube

We decided to extend the original and very sucessful Super Tube into the realm of high voltage devices like the EMEM 3, etc. And the result is what you see below. Because it is a Super Tube, the volume of gas is considerable and many consider the tubes with high gas volumes to be much more effective and efficient. There are those users who prefer to have physical contact with the plasma tube to get the effects they want and this 2 in. dia. tube allows you to very comfortably do that, although it now appears that this isn't really necessary with this tube. The overall length is 22 inches and the diameter is 2 in. The tube comes normally filled with the 90/10 Argon/Neon gas mix, but can be filled with our other standard gasses or gas mixes. The ends of the tube have part of the tungsten electrode sticking out to which you can make your connections You can see this in the photos below. The price of this tube is \$219.



**Energized EMEM Super Tube** 



Non-energized EMEM Super Tube

#### The Enhancer Bulb

The bulb pictured below is specifically made for the Molecular Enhancer and similar devices. It is 6 inches in diameter and is normally filled with either 100% Neon, a Helium/Neon mix or an Argon/Krypton mix, with the Helium/Neon mix being the most popular. These bulbs are made from lab quality Pyrex and are very solid and very sturdy. The 7 ft. long pearl colored lead-in cable is rated for very high voltages and is extremely flexible, so there's no 'drag' when moving the bulb about. As with the other hand held tubes we make, we consider the quality and electrical ratings of the connection cable to be extremely important. Some users have adapted their EMEM 2/3 machines to use this bulb in conjunction with a ground plate. This bulb is priced at \$219.



Shown above is the Molecular Enhancer Bulb

#### Hand Held Plasma Tube pair

This pair of tubes fall in the hand held category. They are designed to be used with devices like the BioTech 2000 and the Photon Sound Beam units and other devices using the same technology. These tubes are fabricated from Pyrex glass, which we believe is far superior to other tubes which are made from leaded glass. The reason being is that the high lead content of leaded glass tubes actually act to shield or prevent some of the energy from the plasma getting thru the glass and therefore to the subject, since we must remember that lead is a metal and metals have the property of shielding or blocking electromagnetic radiation. The other main advantage of Pyrex is its high mechanical strength and can therefore take much heavier use and abuse. The other unique and important aspect of these tubes is that there is a special mineral incorporated into the tubes that greatly intensifies or amplifies the magnetic field created by the energized plasma. And it is that magnetic field which contributes significantly to the effects generated by the tube. As well, the lead in wires are rated for very high voltage which insures that ALL the energy from your device will reach the tube and not be reduced due to cheaper, poorly rated wiring The wires are super ultra flexible and will not cause your instrument to be pulled about as you move the tubes. The wires are 7 feet long and are terminated with a standard banana plug. These tubes come filled with either straight Helium, a Helium/Neon mix, or an Argon/Krypton mix. These tubes are priced at \$279 a pair and you can see them on the next page.



#### The Omega Tube

This tube is fabricated to the shape of the Greek symbol Omega  $(\Omega)$ . It is designed to fit over and around a person's head as illustrated in the picture on the next page. It can be energized by any high voltage system like the EMEM 2/3 or Photon Sound Beam or BioTech 2000 or any other such similar system. The approach here is have the tube in close proximity to a person's own energy field and therefore interact with it to create positive effects, depending on the frequencies applied. Needless to say, the standard Rife or Hulda Clarke frequencies can also be applied to the tube to get the desired effects. The tube is fabricated from 1 inch dia. Pyrex and is normally filled with our Helium/Neon mix. The lead-in wires are our top quality super ultra flexible high voltage cable and are 7 feet long and terminated in the standard banana plugs. This tube is priced at \$329. The tube is pictured on the next page.

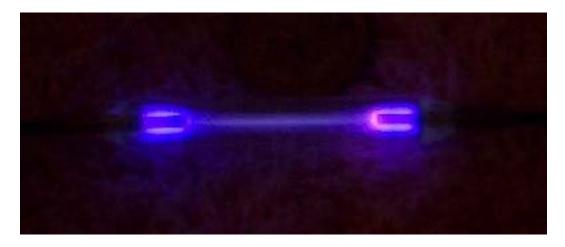


**Pyrex Micro Tube** 

This specialty tube was inspired by a customer engaged in plasma RF low power transmission research and a tube was required that could be worn continuously by the user. This plasma tube is the result. It is only 1/4 inch in diameter and 2 inches long and has internal electrodes. This tube would be ideal for anyone wanting to develop an ultra small wearable Rife system. The Micro Tube can be filled with any of our gasses or gas mixes and is priced at \$49. This tube is pictured below and on the next page.



Micro Tube shown un-energized. Note the 1 cent piece in the above photo for size.



Micro Tube shown energized.

## **Plasma Tube Accessories**

### **The Copper Collars**

Copper collars are intended to be used as external electrodes on plasma tubes designed for use with an R/B or similar radio frequency Rife system. The collars come in two sizes, a 1 inch dia. size and a 2 inch dia. size, which will fit over a 1 in. dia. tube and a 2 in. dia. tube respectively. Depending on your system, you may or may not need to incorporate an external wire wrap as well. In most instances, just the collars will do the job nicely. The 1 inch collars are priced at \$29/pair and the 2 inch collars are priced at \$49/pair. The photo on the next page shows both sizes.



## **High Voltage Cable**

This high voltage cable is ideal for use as the lead-in wire for tubes that are used with the EM and other types of high voltage systems. It is strong, extremely flexible (it's most desireable feature) and is rated to handle the voltages typically used in these systems. It also has a very nice Pearl colored finish. It is priced at \$4 per foot and normally comes in 7 foot lengths. Two lengths (one pair) are necessary to connect your tube to the device you're using. One pair of the high voltage cable is priced at \$49 and can be seen below.



#### **The Rubber Boots**

The rubber boots are used to fit over the end or ends of the 4 in Hand Held or Standard Phanotron tubes. Not only do they nicely finish off the tube, but more importantly, they provide additional protection for the user against accidental contact with the lead-in cable connections. The boots are priced at \$4.95 each.



#### A few words about Getters.

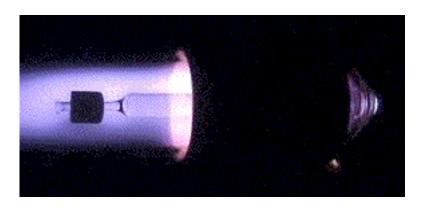
As many users of this technology know, a major problem exhibited by the various types of plasma tubes is the sometimes unpredictable instability, behaviour and color change of the energized plasma in a plasma tube....of whatever type and make....with the exception of Quartz. This can result in unreliable and unpredictable operating conditions which makes it very hard for users to get consistent performance. This is particularly true of tubes intended for use with RF based systems.

After having worked with the engineers at Corning Glass for several months, the cause of these problems have been identified as moisture in the form of a hydroxyl (OH) contaminating the inside of the tube. All glass types and formulations contain this moisture which is normally locked within the molecular structure of the glass itself. However, the action of an energized plasma can cause the release of this moisture from within the glass to the inside, thereby creating the plasma instability problems. The only notable exception to this is Quartz, which is pure silica and as such, does not contain any moisture within it and therefore does not require a getter. It should be noted here that this effect of gas contamination by moisture from within the glass structure, only seems to occur with a tube which is energized by an RF system, and then only with the heavier gasses, like as Argon or Neon.

To solve the problem of this moisture contamination, I've introduced the optional addition of what is known as a "getter" to the inside of Pyrex plasma tubes. Basically, a getter is a specially processed combination of several rare earths whose job it is to permanently absorb any impurities and contaminants from within a vacuum vessel, such as a plasma tube, thereby assuring a permanently ultra clean environment within the tube. The other big advantage of using a getter in a plasma tube is the absorbtion of any residual air after vacuum pumping. No vacuum pumping system is 100% perfect, and the getter removes that small trace amount of air that the vacuum pump did not get. It should be mentioned here that the Noble gasses (Argon, Neon, Helium etc.) are not affected or absorbed by the getter.

Getters are also commonly used in very high quality industrial vacuum tubes such as high power lasers, X-ray tubes, image intensifier tubes, etc. Once the getter is activated, it remains so....to always be on the job, so to speak.

The photo below shows a getter button (actual size) mounted on a glass rod in an energized 1 inch Argon filled Pyrex tube.



## **Plasma Tube Price List**

(Prices quoted are in US Dollars)

<b>Standard Phanotron Tube</b>	<b>\$269</b>
1939 Phanotron Tube	\$398
8 inch Phanotron Tube	<b>\$529</b>
Standard Hand Held Phanotron Tube	\$369
Mini Hand Held Phanotron Tube	\$239
Mini Phanotron Tube	\$125
1 inch dia. Pyrex U-Tube	\$249
1 inch dia. Quartz U-Tube	\$369
1 inch by 18 inch Pyrex Straight Tube	\$189
1 inch by 18 inch Quartz Straight Tube	<b>\$229</b>
1 inch by 24 inch Pyrex Straight Tube	<b>\$249</b>
Special 18 inch Quartz Tube	\$295
Pyrex Single Bubble Tube	\$249
<b>Quartz Single Bubble Tube</b>	\$359
Pyrex Double Bubble Tube	<b>\$299</b>
<b>Quartz Double Bubble Tube</b>	\$399
Pyrex Straight Super Tube	<b>\$298</b>
Quartz Straight Super Tube	\$395
Pyrex Super U-Tube	\$389
Quartz Mini Tube	<b>\$49</b>
12 Inch Spiral Tube	\$395
EMEM 2 Straight Tube	\$189
Enhancer Bulb	\$219
Hand Held Straight Tube Pair	\$279/pair
Omega Tube	\$329
Pyrex Micro Tube	<b>\$49</b>
1 inch finished Copper Collars	<b>\$29/Pair</b>
2 inch finished Copper Collars	<b>\$49/Pair</b>
High Voltage Cable	<b>\$49/Pair</b>
<b>End Cap Rubber Boots</b>	\$4.95 each

#### **Payment and Shipping**

The shipping costs are not included in the tube prices. Shipping costs vary considerably depending on the tube type, destination and preferred method of shipment. In general, we ship via air mail within North America. Shipment by postal airmail to Europe or Asia is quite variable. Email me for a shipping quote Shipping by private courier (FedEx) is available at added cost and is almost essential when shipping some of the larger tubes.

Payment can be by credit card (M/C or Visa) bank or postal money order, cashier's check, bank transfer of funds, Western Union money transfer, or by on line payment thru <u>PayPal.com</u>. If paying by PayPal (you need to have an account setup with themit's free), please let us know and we will email you thru PayPal an invoice detailing the tube or tubes and other items you wish to purchase.

Please note that there is a 15% charge for returns and exchanges.



#### **Afterword**

The tubes shown here are the result of many hours of development and research, and this still continues. These tubes have reached the point where they can be offered for sale and the user can be confident that they will perform as intended. If anyone has any special questions or inquires regarding these or other plasma tubes, please don't hesitate to contact us at the places indicated at the beginning of this document.

Some have made the observation that our tubes are somewhat expensive...and they are, compared to the cheap and flimsy tubes that neon sign shops usually turn out. If one were to make a side by side comparison of a similar tube type made by us and by others, the difference in quality would be immediatly obvious, not only in the construction but in the operation of the tube. The old saying, "you usually get what you pay for" is as true today as it was in the past.

I invite you to visit my Rife Web Site at; http://www.geocities.com/rifetube/gallery.html where you will see some fascinating descriptions and photos of plasma tubes and how they're made.