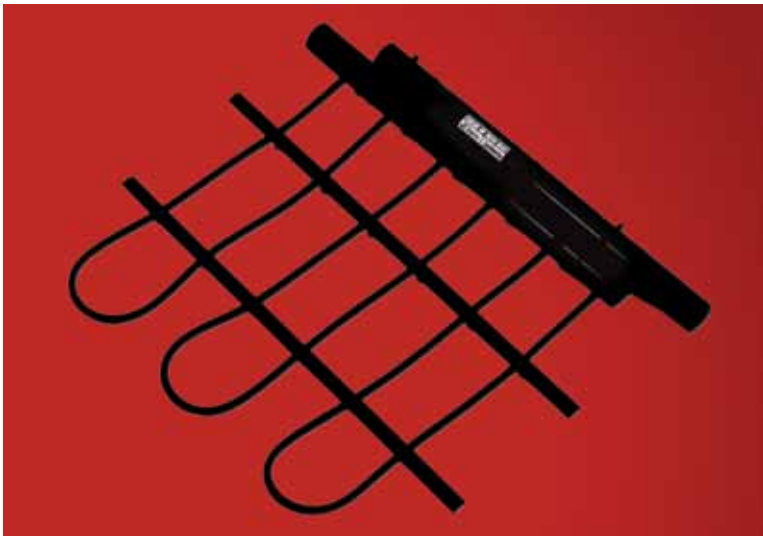
Delta T Solutions
Engineering, Integrating, Innovating Systems

DELTA-TUBE™ LD
EPDM Rubber Tube In-Ground Heating

The DELTA-TUBE™ LD EPDM rubber tube heating system heats the greenhouse at the soil level, where the heat is needed.

Heat rising from the bed warms the soil and plant roots. By controlling the soil temperature, both rooting and plant growth can be accelerated. Growers who use our ground heating systems have shown 30% reduction of fuel usage, along with shorter production times and superior product quality.

This material excels in the nursery industry for general growing and rooting of cuttings and is ideal for starter houses. Growers who use this material for heating soil or nutrient bags of tomatoes and cucumbers have shown a 50% increase in yield. Grape growers have found a quicker and more even callusing pattern by using bottom heat to callus grape stock.



DELTA-TUBE™ LD EPDM rubber tubing is ideal for use in a hot water heating system, due to its resistance to temperature and chemicals, and its superior heat transfer capabilities. Small tube design reduces the system water volume and enables it to respond quickly and efficiently.

Tubing is typically spaced 4 or 6 inches apart, which provides even temperatures to the soil and the crop for optimum environment of all types of growing.

The DELTA-TUBE™ manifolds use a unique plastic fitting that is pressed into the PVC pipe, creating a water tight fit that is guaranteed not to leak. Each fitting is pressed into the top of the manifold so that the tubing is easily installed. Each manifold is custom manufactured for each system.

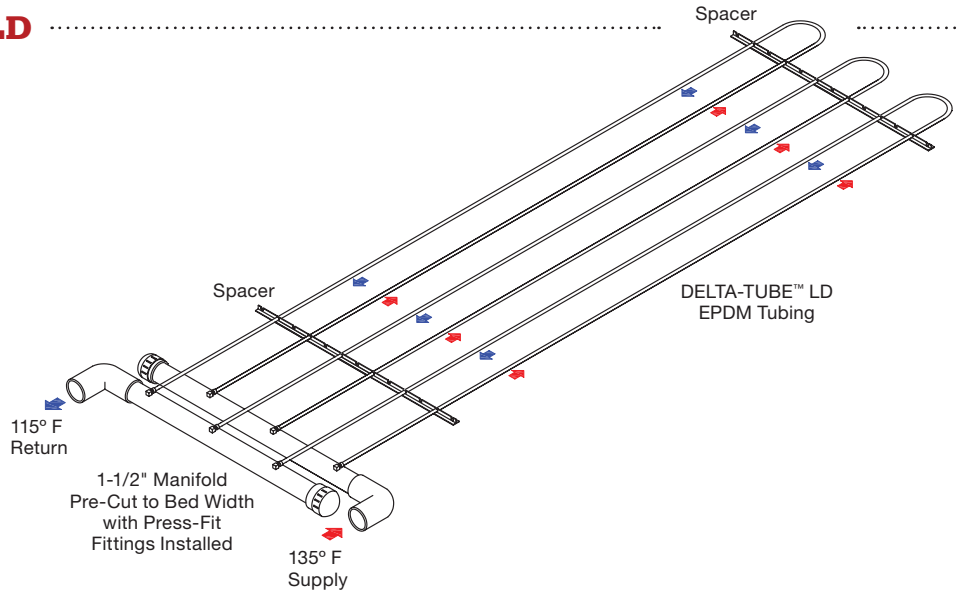
The exclusive tubing spacers secure the Delta T tubing at the optimum design spacing. They are cut to the bed width for ease of installation. Maximum length is 8 feet.

Specifications:

The hydronic heating system is the DELTA-TUBE™ LD EPDM rubber tube system using 135°F water temperature and will consist of the following components:

- Ridged plastic spacers with spaces every 2 inches holds the EPDM tube in place and spaces tube on 10-foot spacing. Spacers are cut to bed width up to 8 foot long.
- High quality EPDM rubber tubing 0.30" ID x 0.45" OD shall be on 4 or 6-inch centers. Tubing shall be able to resist ozone, chemicals, fertilizers and temperatures up to 230°F. Tubing shall be provided on 500-foot spools for easy handling.

DELTA-TUBE™ LD



Some of the many advantages of the DELTA-TUBE™ LD systems are:

- Direct contact from tubing to root zone for maximum soil and plant temperature control.
- Even temperatures are maintained throughout the system, resulting in even crop growth.
- Compatible with any type of hot water heat source.
- Different temperature zones for flexible growing.
- Cost-effective system for the grower who wants to get into a hot water heating system inexpensively.
- 1.5" plastic manifolds make it easy to install on plastic mainlines.
- Special pressed fit barb fittings installed on top of manifold make installation of tubing neat and quick.
- Long ridged spacers can easily be installed without having to install more than two or three fasteners.
- High quality tubing withstands UV light, fertilizers and high temperatures.
- Flexible tubing is easily installed and comes in 500-foot rolls.

Delta T Solutions can provide a performance engineered heating system that can meet the needs of any grower. Performance packages include: Heating system components (heat source, controls, radiation), performance engineered drawings (pipe layouts and electrical diagrams), installation supervision and installation (as required).

Contact your local Delta T Solutions Representative for additional details.

DELTA-TUBE™ LD Ratings

	LD - BTU/SQ FT Output (Average water temperature)								Volume
Tube Spacing	100°F	110°F	120°F	130°F	140°F	150°F	160°F	170°F	100 SF
4"	46	57	69	81	92	104	115	127	1.1 gal.
6"	30	38	46	54	61	69	77	84	.73 gal.

Maximum water temperature 140°F (when using PVC manifolds). Maximum water pressure 30PSI (higher pressures available). Elbows and caps available upon request. Any temperature over 140°F supply water will require high temperature manifolds

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