



Innovation and Quality

Commercial Vacuum Distiller



The commercial vacuum distiller is the world's most advanced and versatile extractor. It offers five different methods of extracting botanicals and four different ways of distilling. We offer 25, 100, and 500 gallon stainless steel models of this design.

Tanks are built with 304 stainless steel with an internal polish. All ports are FDA sanitary style certified to dairy industry standards. The caps have swing bolt closures which provide a vacuum tight seal. Units are not pressure rated but are designed to relieve pressure before an accident could take place due to operator error. Tanks are all jacketed meaning there is an outside vessel and an inside vessel. The space between the two vessels is filled with glycol and water. Immersion heaters protrude into the liquid in the jackets for heating the entire system. 25 gallon unit has two 4,500 watt, 30 amp 240 volt Watlow brand heaters. 100 gallon unit has three of the same heaters. 500 gallon has several options for heating. All models can be steam heated if preferred. Tanks have a vertical sight glass for viewing liquid level in tank. They have a Yamada brand airdrive diaphragm liquid pump FDA sanitary certified for liquid transfer. Standard vacuum pump is a Robinare two-stage rated to 10cfm, and 50 micron vacuum. Other vacuum options are available. All units have an electric hoist for lifting components in and out of tank. Hoists are mounted on a rotating L-shaped boom. Tanks sit suspended in a stainless steel stand.

Eden Labs LLC

1601 W. 5th. Ave., Suite 240

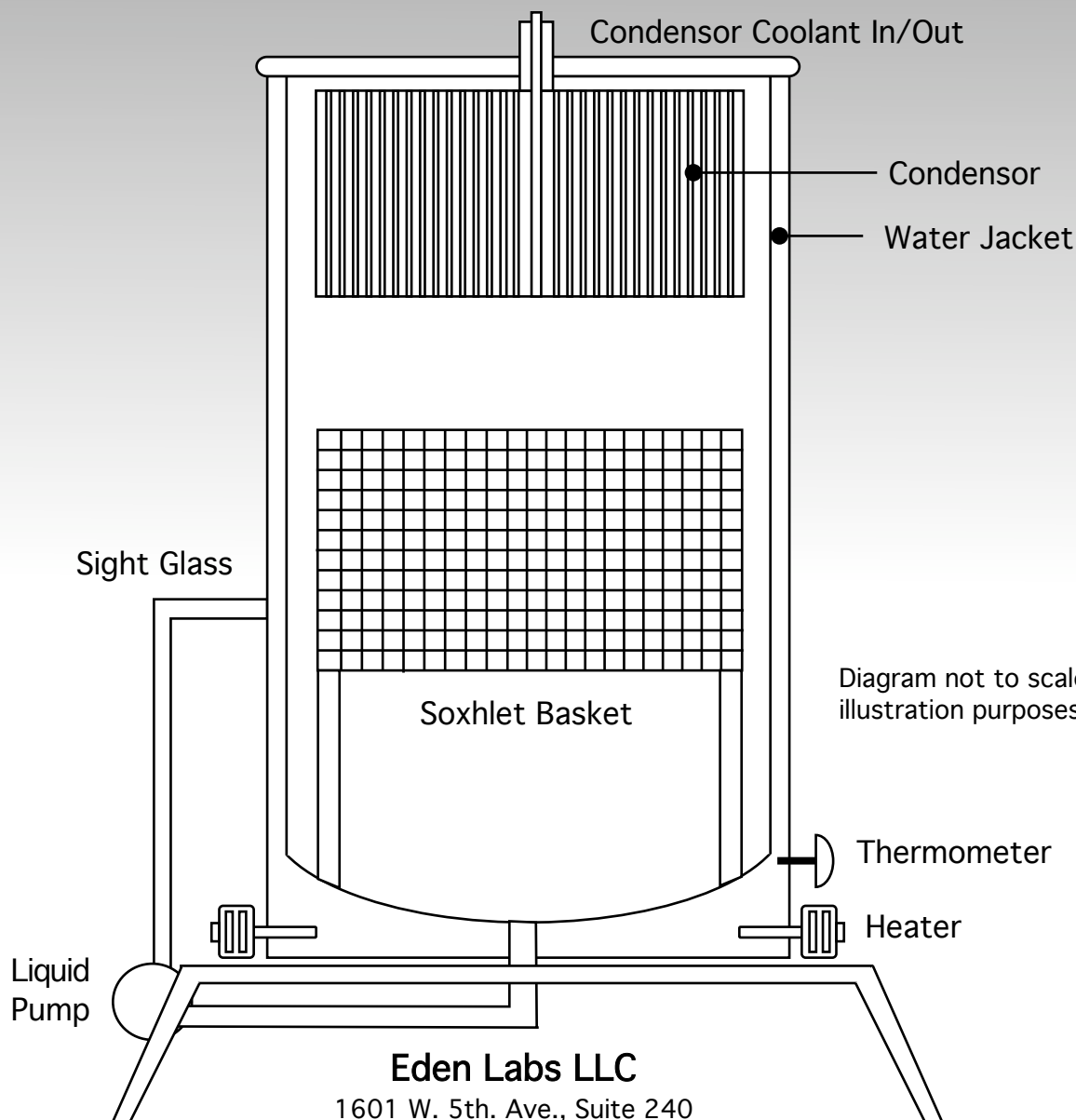
Columbus, Ohio 43212

edenlabs@gmail.com

www.edenlabs.com

Colfinger Extraction Unit

Coldfinger Extraction is the proprietary extraction method pioneered by Eden Labs LLC. It combines a soxhlet style solvent distillation with steam distillation. This is achieved by suspending a basket of ground herb material just above the heated solvent. A condenser is suspended just above the basket of herb. Gentle heat and/or vacuum vaporizes solvent which then liquefies on the condenser and drips through the herb thereby extracting it. While this is taking place, solvent vapors are condensing directly on the herb and extracting it as well. Tests have shown this process gives better yields than all other methods. In some cases, analysis of extracts made with this method has shown compounds that were not even known to be in the botanical. This led researchers to conclude that the previous extractions were either not extracting these constituents or were destroying them in the process.



Eden Labs LLC

1601 W. 5th. Ave., Suite 240

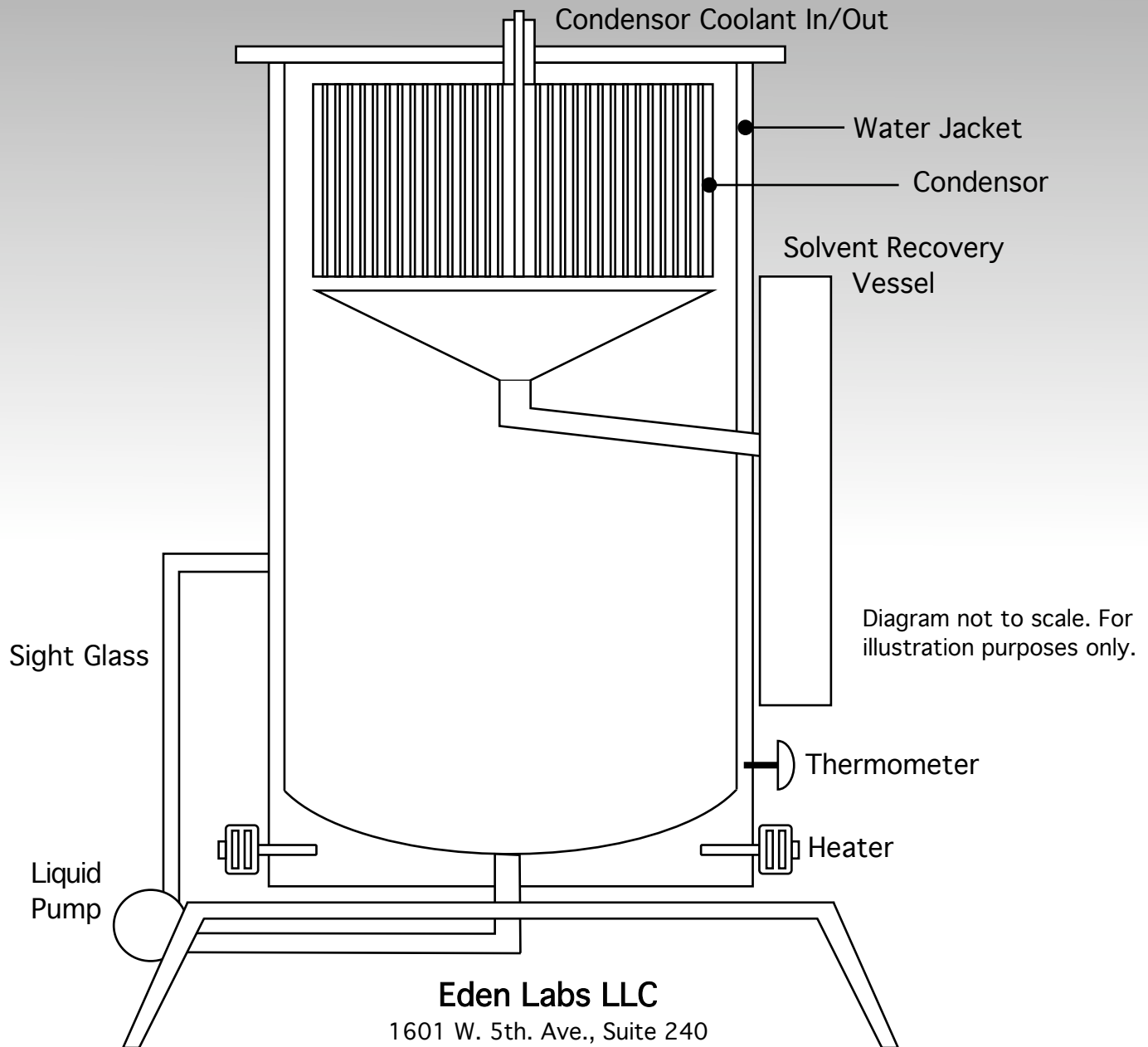
Columbus, Ohio 43212

edenlabs@gmail.com

www.edenlabs.com

Accelerated Solvent Recovery Extraction Unit

The method of solvent distillation recovery shown here is four times faster than the conventional method whereby vapors flow out of the boiling chamber and liquefy on a condenser outside of the vessel. As the diagram shows, the condenser is inverted inside of the boiling chamber. Condensate drips off the condenser and in to the funnel below it. The recovered solvent then flows out to a separate vessel. Tests show that using the conventional distillation method with the chamber at 120F and 20" of mercury vacuum, one gallon per hour of ethanol will distill off. With the Eden Labs accelerated solvent recovery method shown in this diagram, one gallon is recovered every 15 minutes.



Eden Labs LLC

1601 W. 5th. Ave., Suite 240

Columbus, Ohio 43212

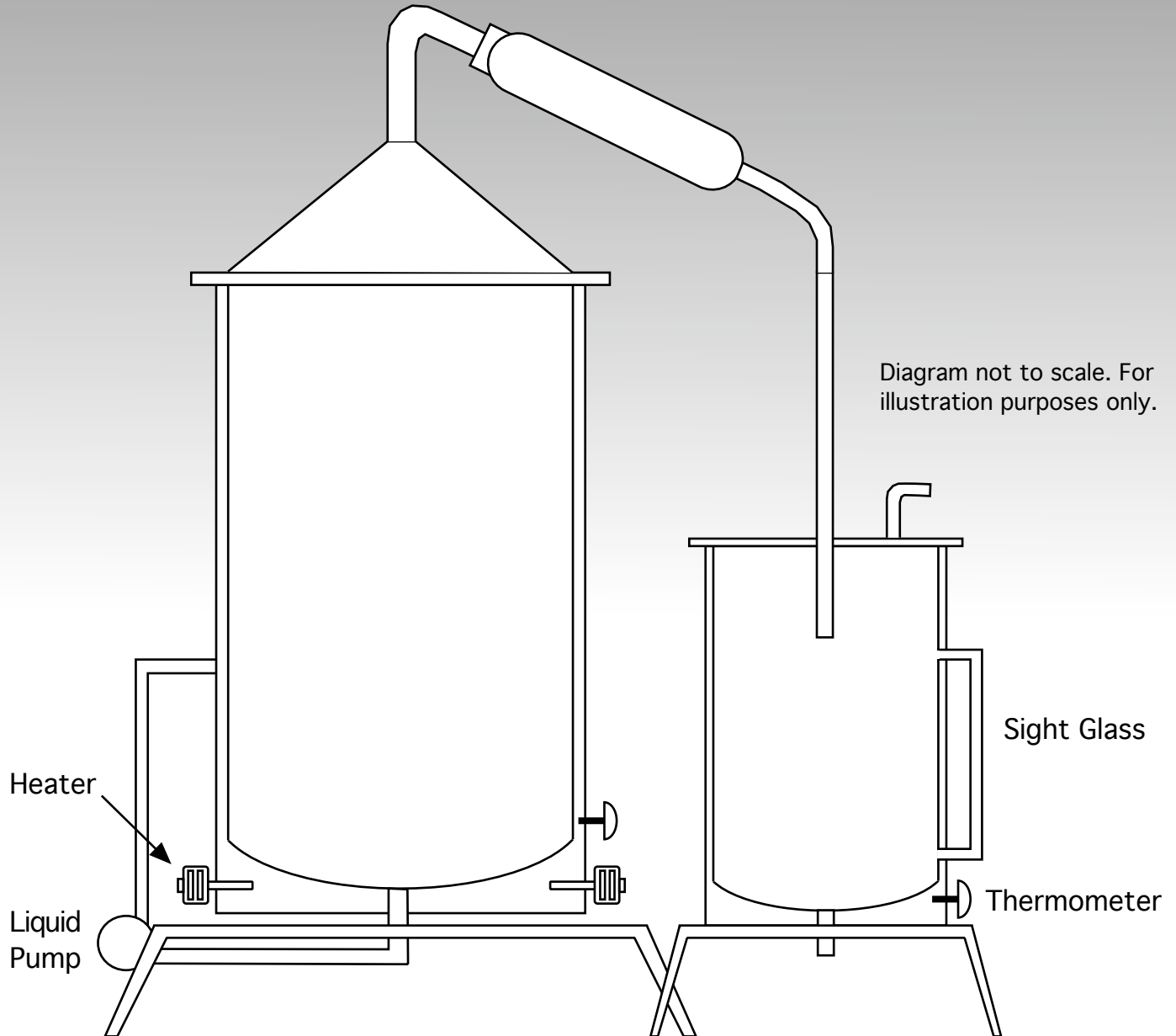
edenlabs@gmail.com

www.edenlabs.com



FRACTIONATING COLUMN

By adding a packed column or fractionating column, the commercial vacuum distiller can be used to separate various liquids with different boiling points. This unit has become increasingly popular with fuel ethanol enthusiasts. 100 gallon unit can produce 20-25 gallons of fuel ethanol per day.



Eden Labs LLC

1601 W. 5th. Ave., Suite 240

Columbus, Ohio 43212

edenlabs@gmail.com

www.edenlabs.com



Stirred Reactor Unit

This is the standard method of making extracts used by countless food, pharmaceutical and herb processors world-wide. 8 lbs. of solvent to 1 lb. of ground botanical is put in the tank where it is heated and stirred for 90 minutes. Then the liquid is drained off. What makes the Eden Labs design unique is the option of heating and putting vacuum to the tank at the end of the process. This allows the user to recover every last drop of solvent saving money and bringing your facility into compliance with the ever expanding regulations regarding solvent vapor emissions.

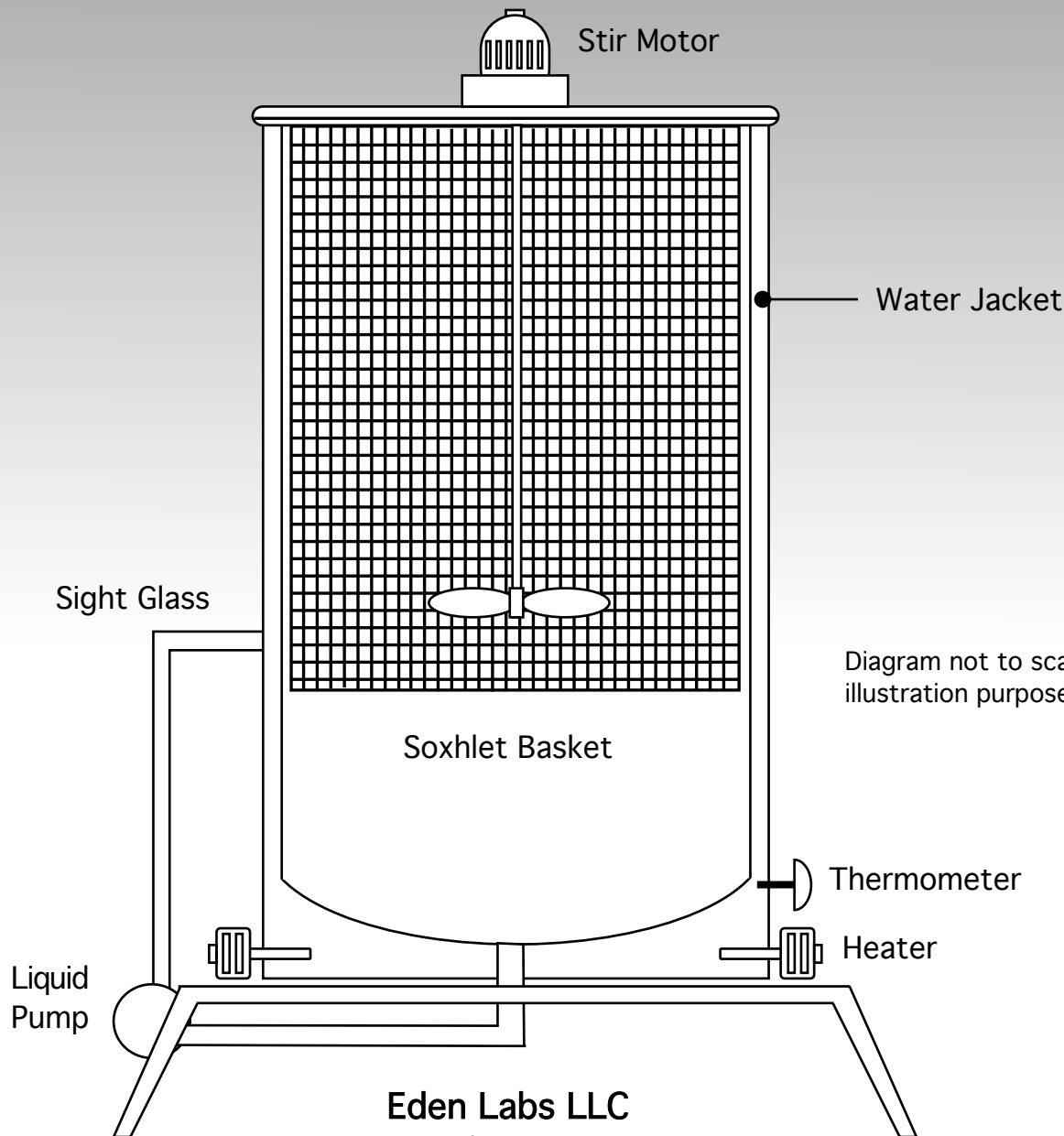


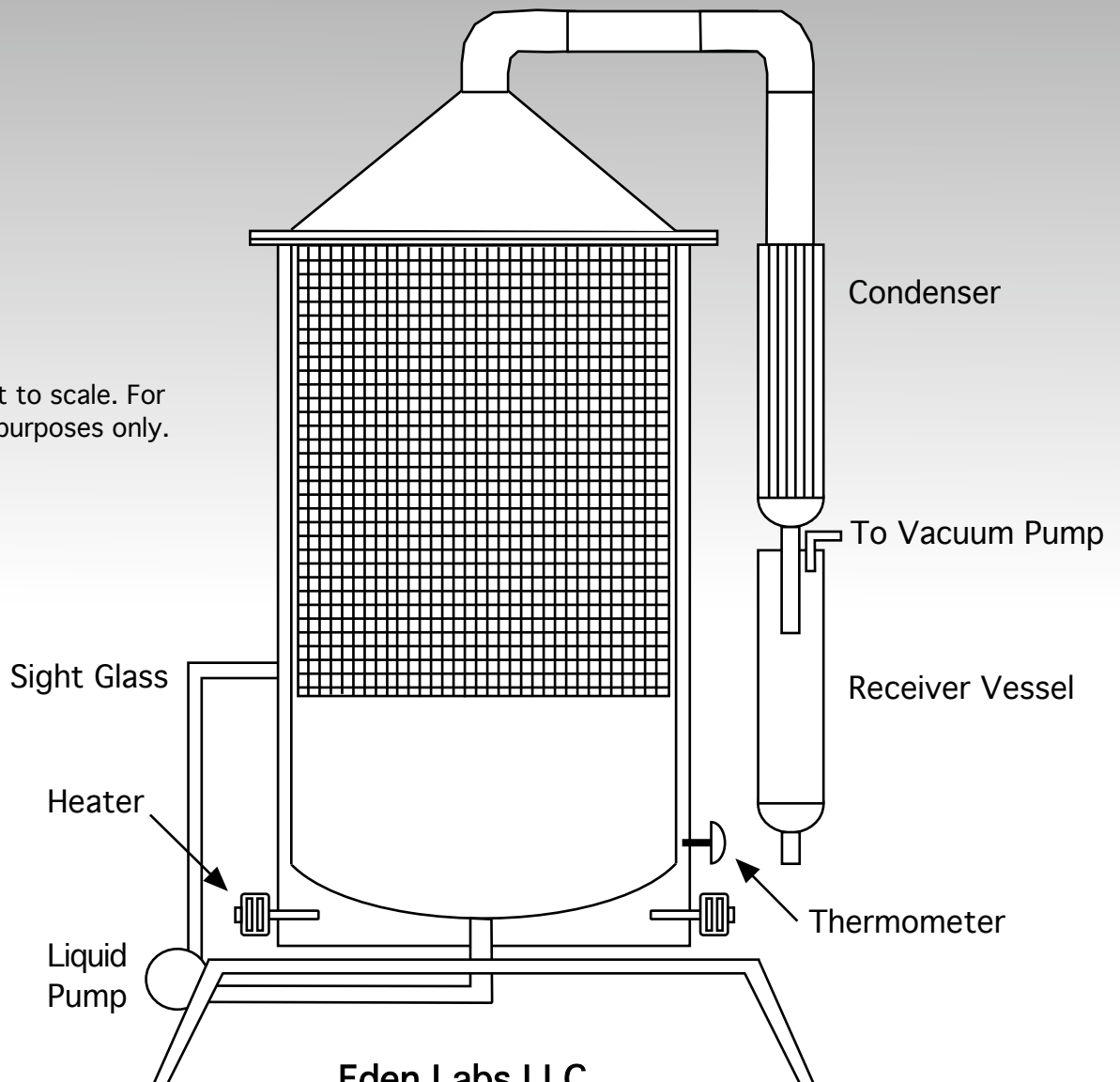
Diagram not to scale. For illustration purposes only.

Eden Labs LLC
1601 W. 5th. Ave., Suite 240
Columbus, Ohio 43212
edenlabs@gmail.com
www.edenlabs.com

Vacuum Steam Distillation

This is another Eden Labs breakthrough. By putting the extraction tank under vacuum, steam can be created at much lower temp. This creates new steam distillation parameters which have never been seen before. Delicate volatile oils which suffer from thermal degradation under conventional steam distillation may be able to be extracted with little or no damage.

Diagram not to scale. For illustration purposes only.



Eden Labs LLC

1601 W. 5th. Ave., Suite 240

Columbus, Ohio 43212

edenlabs@gmail.com

www.edenlabs.com