

# LECTRODRYER

ADSORPTION TECHNOLOGY EXPERTS



## LLT REFRIGERATION-TYPE INDUSTRIAL GAS DRYERS



# The LLT Lectrodryer combats moisture damage.

Moisture is a major cause of poor product quality in industrial gas systems. Moisture-related impurities lead to downtime, costly repairs, product rejection, and lost production.

LLT Lectrodryer refrigeration type industrial dryers reduce the amount of moisture in gas system and greatly reduce the possibilities of product rejection caused by moisture. The LLT Lectrodryer is designed for simple trouble-free operation, providing the least expensive most thorough method of gas drying. The compact design requires a minimum of floor space.

A system using low-pressure, controlled atmosphere gases, hydrogen, nitrogen, or others, is typical of the situation in which refrigeration-type gas dryers can provide dependable service. The LLT Lectrodryer is designed to supply dried gas continuously for low-pressure applications. In fact, practically all low-pressure, gas-drying applications can be handled efficiently by a Lectrodryer.

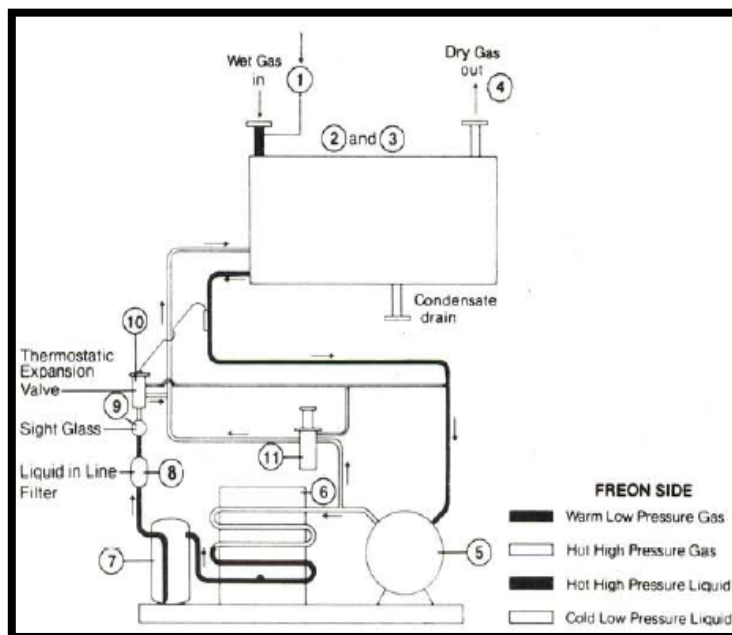
The LLT is designed to reduce gas dewpoint temperatures to 35-40°F. This reduction in temperature effected by the Lectrodryer system causes the gas to lose approximately 85% of its moisture through condensation. And that's moisture that could cause serious problems.

If you're concerned about what moisture might be doing to your industrial gas system contact your Lectrodryer representative. He will conduct a free plant survey and recommend the proper dryer installation to meet your specifications and production requirements.



## Here's how the LLT Lectrodryer works.

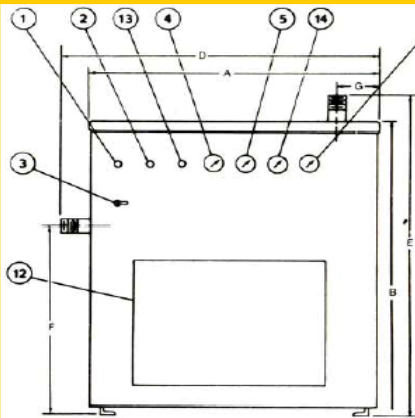
1. Hot, saturated gas from the aftercooler, typically 100°F, enters the gas-to-refrigerant heat exchanger.
2. Heat transfer takes place. Freon in the tube side absorbs the heat from the gas side, reducing gas temperature to 35°F.
3. As the gas travels through the exchanger the condensed moisture is removed reducing the dewpoint to 35-40°F.
4. The cooled gas enters the system as dried gas.
5. The low-pressure Freon gas is compressed to a very hot high-pressure gas.
6. Hot high-pressure gas enters the condenser, where much of its heat is transferred either to the ambient air or cooling water. With the reduction of heat the Freon changes from high-pressure gas to a high-pressure liquid.
7. The receiver serves as a holding vessel for the high-pressure liquid. Constant flow on demand is assured and fluctuations in dewpoints are avoided.
8. The high-pressure liquid passes through a filter in the line to insure purity of the Freon to maintain maximum performance.
9. A sight glass with a moisture indicator allows the operator to check periodically on the purity of the liquid Freon.



10. A thermostatic expansion valve meters the Freon precisely to satisfy the actual load conditions within the dryer capacity.
11. The hot gas bypass valve operates to allow a portion of hot gas, prior to the condenser, to pass in to the system preventing freeze-up at reduced load conditions.



# LLT Lectrodryers Size 2 through 20



### Standard Features

1. Power on Light
2. High temperature warning light
3. ON/OFF switch
4. Refrigerant analyzer gauge
5. Inlet gas temperature gauge
6. Compressor overload protection.
7. Hot gas bypass capacity control
8. Compressor low suction pressure cut-out.

12. Ambient air filter
13. High pressure drop warning light
14. Gas out temperature gauge
15. Refr. head pressure gauge
16. Crankcase heater

### Note:

- All dimensions in inches
- Tolerances: Connections  $\pm 1/8"$ , overall or  $1/2"$
- All models are air cooled (water cooling optional)
- Welded hermetic sealed compressor
- Refrigerants: R-134a
- Electrical Nema-1 general purpose
- 3-phase electrical available on LLT-10 to LLT-20 consult factory for details

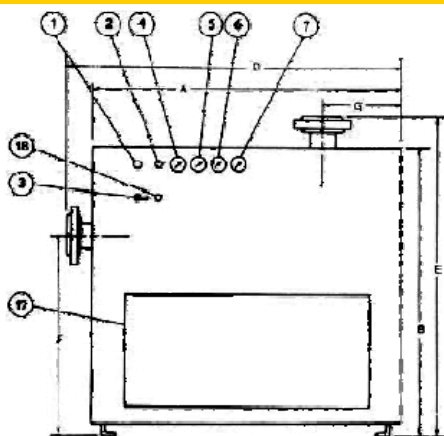
### Optional Features

9. Low suction pressure cut-out
10. High head pressure cut-out
11. Low ambient control

### Typical Specifications

| Size   | A  | B  | C  | D    | E    | F  | G   | H | Conn. Size N.P.T. | Ship Weight | HP  | Power Supply<br>208/230<br>-1-60 | 230-1-60 | KV<br>A | Capacity<br>SCFH |
|--------|----|----|----|------|------|----|-----|---|-------------------|-------------|-----|----------------------------------|----------|---------|------------------|
| LLT-2  | 27 | 29 | 29 | 29.5 | 31.5 | 20 | 2.5 | 6 | 1                 | 150         | 1/6 | N/A                              | N/A      | 0.4     | 250              |
| LLT-3  | 27 | 29 | 28 | 29.5 | 31.5 | 20 | 2.5 | 6 | 1                 | 160         | 1/5 | N/A                              | N/A      | 0.6     | 350              |
| LLT-5  | 27 | 29 | 28 | 29.5 | 31.5 | 20 | 2.5 | 6 | 1                 | 200         | 1/4 | N/A                              | Opt.     | 0.7     | 500              |
| LLT-7  | 27 | 29 | 28 | 29.5 | 31.5 | 20 | 2.5 | 6 | 1                 | 220         | 1/3 | Opt.                             | N/A      | 1.0     | 700              |
| LLT-10 | 27 | 29 | 28 | 29.5 | 31.5 | 20 | 2.5 | 6 | 1                 | 230         | 1/2 | N/A                              | Opt.     | 1.4     | 1000             |
| LLT-13 | 24 | 26 | 35 | 26.5 | 30.5 | 18 | 2.5 | 6 | 1.5               | 450         | 3/4 | Opt.                             | N/A      | 1.8     | 1350             |
| LLT-16 | 24 | 26 | 35 | 26.5 | 30.5 | 18 | 2.5 | 6 | 1.5               | 480         | 1   | Std.                             | Std.     | 2.1     | 1600             |
| LLT-20 | 24 | 26 | 35 | 26.5 | 30.5 | 18 | 2.5 | 6 | 1.5               | 500         | 1   | Std.                             | Std.     | 2.1     | 1900             |

# LLT Lectrodryers Size 25 through 200



### Standard

1. Power on light
2. High temperature warning light
3. ON/OFF switch
4. Refrigeration analyzer gauge
5. Refrigeration head pressure gauge
6. Gas in temperature gauge
7. Gas out temperature gauge
8. Low suction pressure cut-out
9. High head pressure cut-out
10. Hot gas bypass capacity control

17. Ambient air filter
18. High pressure drop warning light

### Note

- All dimensions in inches
- Tolerances: connections or  $\pm 1/8"$ , overall or  $\pm 1/2"$
- All models air cooled (water cooling optional)
- Size LLT-25 through LLT-100 welded hermetic compressor
- LLT-120 through LLT-200 semi-hermetic compressor
- Refrigerants: R-134a sizes LLT-25 thru LLT-65, R22 sizes LLT-80 thru LLT-200
- Electrical Nema 1 general purpose

### Options

15. Low ambient control
16. Crankcase heater

### Typical Specifications

| Size    | A  | B  | C  | D  | E  | F  | G | H    | Conn. Size N.P.T. | Ship Weight | HP  | 230-1-60 | 208/230-1-60 | Power Supply<br>208/230-3-60 | 460-3-60 | 575-3-60 | KVA  | Capacity<br>SCFH |
|---------|----|----|----|----|----|----|---|------|-------------------|-------------|-----|----------|--------------|------------------------------|----------|----------|------|------------------|
| LLT-25  | 39 | 37 | 44 | 42 | 40 | 25 | 6 | 10.5 | 2                 | 700         | 1.5 | Std.     | Opt.         | Opt.                         | Opt.     | Opt.     | 2.9  | 2500             |
| LLT-30  | 39 | 37 | 44 | 42 | 40 | 25 | 6 | 10.5 | 2                 | 750         | 2   | Std.     | Opt.         | Opt.                         | Opt.     | Opt.     | 4.2  | 3000             |
| LLT-40  | 39 | 37 | 44 | 42 | 40 | 25 | 6 | 10.5 | 2                 | 800         | 2   | Std.     | Opt.         | Opt.                         | Opt.     | Opt.     | 4.2  | 4000             |
| LLT-50  | 39 | 37 | 44 | 42 | 40 | 25 | 6 | 10.5 | 3                 | 850         | 3   | N/A      | Opt.         | Opt.                         | Std.     | Opt.     | 5.7  | 5000             |
| LLT-65  | 39 | 37 | 44 | 42 | 40 | 25 | 6 | 10.5 | 3                 | 1000        | 3   | N/A      | Opt.         | Opt.                         | Std.     | Opt.     | 5.7  | 6500             |
| LLT-80  | 42 | 58 | 77 | 45 | 61 | 45 | 6 | 15.5 | 3                 | 1400        | 4   | N/A      | Opt.         | Opt.                         | Std.     | Opt.     | 8.5  | 8000             |
| LLT-100 | 42 | 58 | 77 | 45 | 61 | 45 | 6 | 15.5 | 3                 | 1500        | 5   | Opt.     | N/A          | Opt.                         | Std.     | Opt.     | 9.9  | 10000            |
| LLT-120 | 42 | 58 | 77 | 45 | 61 | 45 | 6 | 15.5 | 4                 | 1600        | 7.5 | N/A      | N/A          | Opt.                         | Std.     | Opt.     | 13.6 | 12000            |
| LLT-150 | 42 | 58 | 77 | 45 | 61 | 45 | 6 | 15.5 | 4                 | 1700        | 7.5 | N/A      | N/A          | Opt.                         | Std.     | Opt.     | 13.6 | 14500            |
| LLT-200 | 42 | 58 | 77 | 45 | 61 | 45 | 6 | 15.5 | 4                 | 1900        | 10  | N/A      | N/A          | Opt.                         | Std.     | Opt.     | 20.1 | 20000            |



# LECTRODRYER HAS THE SOLUTION FOR ALL COMPRESSED AIR AND GAS DRYING PROBLEMS

Lectrodryer offers a complete range of drying and purification equipment:  
For atmospheric or high pressure conditions  
For very small or very large air volumes  
For air, gases, and certain organic fluids

## Regenerative Adsorption Dryer

### Typical applications:

Drying compressed air for instruments; purging of refrigeration coils, compressors, and systems; drying air for ozone generators; vacuum-breaking operations controlled atmosphere gas



### Features:

Carbon steel pressure vessels with ASME Code (where applicable) for up to 150 PSIG Stainless steel perforated metal desiccant support and inlet flow diffuser, sheathed or non sheathed heating element in which each adsorber vessel with thermostatic over temperature protection in the heater bundle, two 4-way lubricated plug valves with air piston operator and solenoid valve controls, thermal pressure relief valves, pressure gages, dial thermometer in the purge outlet, 110 volt controls and NEMA 1 electrical enclosures.

### Optional Features:

Special controls and electrical enclosures.

## Refrigeration-Type Industrial Gas Dryer

### Typical Application:

Low pressure situations for controlling atmospheric gases.

### Features:

Power-on light, high temperature warning light, on/off switch, refrigeration analyzer gage, gas-out gage, gas-in temperature gage, low suction pressure cut-out, high head pressure cut-out, hot gas bypass capacity control, start push button pump down shut off cycle, oil pressure control, and suction accumulator.



### Optional Features:

Special control and electrical enclosures.

## Lectrodryer Filters

The Lectrodryer type SF and type F filters provide high efficiency filtration with ten sizes available in each type for flows to 8400 SCFM, larger sizes available on application. Both types have a high level filter efficiency of 99.985% retention (0.015 DOP penetration) for filtration to a 0.3 micron



## Lube Oil / Air Tanks

Lectrobreather tank vent dryers prevent atmospheric moisture from entering storage during "breathing" due to ambient temperature changes and draining periods. Valuable oils and chemical solutions remain free of water contamination.



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# LECTRODRYER

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