

# Aircel

## Refrigerated Air Dryers

### VF Series

Non-Cycling

10 - 2,000 scfm



# VF Series Non-Cycling Refrigerated Air Dryer | 10 - 2,000 scfm

Since 1994, Aircel has been delivering quality, industry leading compressed air dryers and accessories for production lines and facilities all over the world.

Our precise engineering and designs provide reliable products that will protect your operations for years to come.

Based in Maryville, Tennessee, Aircel is a multi-industry manufacturing leader. Aircel's highly-specialized, engineered products and technologies are powering facilities all over the world. Our products serve industries such as textile, food and beverage, automotive, production, PET market, breathing air, pneumatic instrumentation, and more.



The Aircel VF Series (10 - 2,000 scfm) offers the highest efficiencies at varying flow conditions in a lightweight, compact design. No other dryer in the industry can offer the efficiency ratings achieved by the VF Series dryers in variable flow operation. VF Series dryers are built with the Variable Flow heat exchanger, which allows for desired dew point performance regardless of flow variations. Typically, other dryers with mechanical moisture separators lose performance as compressed airflow velocity increases or decreases substantially around the nominal design point.

The VF Series high efficiency heat exchanger utilizes a three-step process to thoroughly remove condensed moisture from the chilled, compressed air. This process provides **separation efficiency in excess of 99% throughout the entire flow range**. Our VF non-cycling range is focused on reliable, constant dew point performance in all flow conditions.

With its excellent heat transfer coefficients and low-pressure drop, these dryers will outperform the competition in protecting your compressed air system, machinery, and tools; and will improve your manufacturing processes.

## VF Series Features

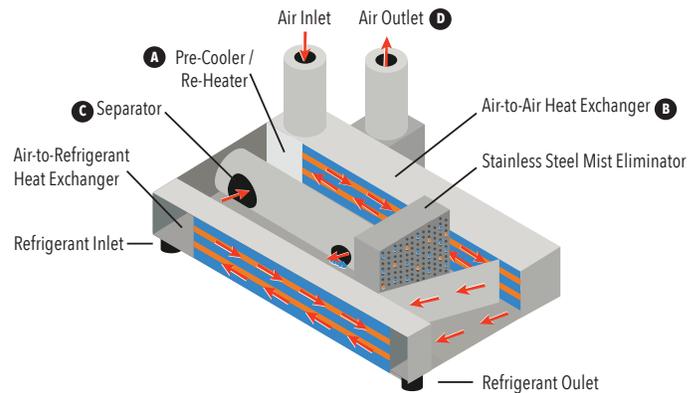
- Timer drain (VF-10 to VF-600)
- Zero air loss drain (VF-800 to VF-2,000)
- Refrigerant suction pressure gauge standard
- Discharge gauge (VF-200 to VF-2,000)
- Inlet pressure gauge (VF-400 to VF-2,000)
- Inlet temperature gauge (VF-400 to VF-2,000)
- Internal, high efficiency separator (VF-10 to VF-600)
- External, high efficiency separator (VF-800 to VF-2,000)
- R-134a refrigerant (VF-10 to VF-800)
- R-404a refrigerant (VF-1,000 to VF-2,000)
- NEMA 1 standard
- NEMA 4 standard (VF-1,6000 to VF-2,000)

## VF Series Options

- Various voltage options
- Water cooled condenser
- Condenser cleaner assembly
- Low ambient temperature protection<sup>1</sup>
- Two valve bypass
- NEMA 4
- NEMA 4X
- Corrosion resistant package<sup>2</sup>

<sup>1</sup> Low ambient package brings ambient temperature down to 32°F  
<sup>2</sup> Corrosion resistant package includes: NEMA 4 enclosure, e-coated condenser, isolation pads, vibration absorbers, and epoxy painted refrigeration lines

## How It Works



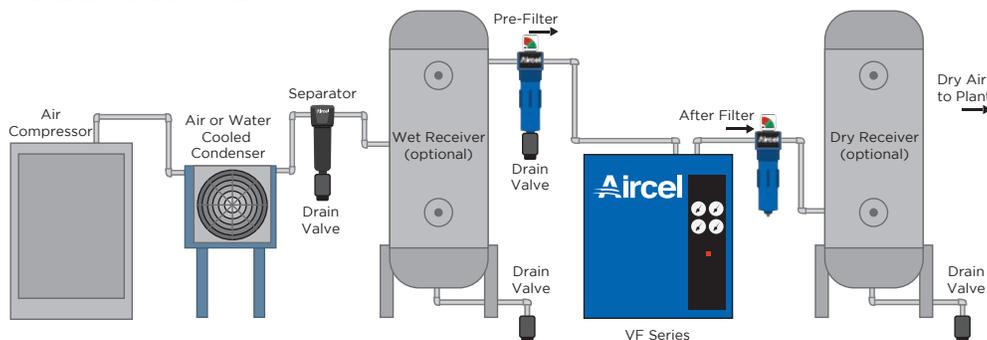
- Saturated, compressed air enters the system and moves into the pre-cooler/re-heater (A), where it is pre-cooled by the cold outgoing air.
- The air is then directed through the air-to-refrigerant heat exchanger (B), where it is cooled to 38°F by the refrigeration system.
- The cold, saturated air flows into the three-stage separator (C), where liquids are removed from the air. This separated condensate is then ejected from the system via the Aircel condensate drain (D).
- The cold, dry air is then reheated by the incoming warm air (E) before leaving the dryer.

## Recommended Filtration



To protect your dryer investment, we recommend that you install a high performance pre-filter directly in front of your refrigerated air dryer. By doing this, you will prevent insulating oil and dirt build-up in the heat exchanger and ensure optimal performance and reliability of the dryer throughout its lifetime.

## Recommended Installation



## Specifications

### Dimensions (in.)

Model Number	Capacity	Voltage	Connection (NPT)	Weight (lbs)	Height	Width	Depth	Refrigerant	Air-Cooled kW (full load)	Nominal Ref HP Installed (size)	Max. Pressure	Optional Voltage Ratings	
VF-10	10	115-1-60	1/2"	70	15	16	16	R-134a	0.29	0.20	232	208/230-1-60; 230-3-60; 430-3-60; 575-3-60	
VF-15	15		1/2"	72	15	16	16	R-134a	0.29	0.20	232		
VF-25	25		1/2"	74	15	16	16	R-134a	0.29	0.20	232		
VF-40	40		3/4"	78	15	16	16	R-134a	0.42	0.25	232		
VF-50	50		3/4"	80	15	16	16	R-134a	0.42	0.25	232		
VF-60	60		3/4"	102	15	16	16	R-134a	0.57	0.33	232		
VF-75	75		1"	128	22	24	18	R-134a	0.83	0.50	200		
VF-100	100		1"	132	22	24	18	R-134a	0.83	0.50	200		
VF-125	125		1"	156	22	24	18	R-134a	1.05	0.75	200		
VF-150	150		1"	162	22	24	18	R-134a	1.05	0.75	200		
VF-200	200	230-1-60	1 1/2"	240	30	36	25	R-134a	1.35	1.25	200	230-3-60; 430-3-60; 575-3-60	
VF-250	250	460-3-60	1 1/2"	332	30	36	25	R-134a	1.35	1.25	200	208/230-1-60; 230-3-60; 575-3-60	
VF-300	300		2"	345	30	36	25	R-134a	1.99	1.50	200		
VF-400	400		2"	567	45	34	45	R-134a	1.99	2.00	200		
VF-500	500		2"	582	45	34	45	R-134a	2.53	3.50	200		
VF-600	600		3"	598	45	34	45	R-134a	4.38	3.50	200		
VF-800	800		3"	790	48	38	54	R-134a	4.38	5.00	200		
VF-1000	1000		3"	800	48	38	54	R-404a	3.81	5.00	200		
VF-1200	1200		3"	852	48	38	54	R-404a	6.25	6.00	200		
VF-1600	1600		4" FLG	1,625	83	41	58	R-404a	7.59	7.00	200		575-3-60; 208/230-3-60
VF-2000	2000		4" FLG	2,250	83	41	58	R-404a	9.19	10.00	200		

Capacity rated in accordance with CAGI ADF 100 @ 100 psig, 100°F inlet, 100°F ambient and a PDP of 38°F

Operating pressure: 40 to 200 psig | Ambient air temperature: 40°F to 120°F (32°F with ambient low temperature option) | Inlet air temperature: 40°F to 120°F

For larger capacities and custom dryer options, please contact an Aircel factory representative

## Capacity Correction Factors

### To Size the Dryer Capacity for Actual Conditions

Adjusted Capacity = scfm x (C1 x C2 x C3 x C4)

Example:

Dryer Model: VF-100  
 Standard Capacity: 100 scfm  
 Actual Operating Conditions:  
 90°F ambient: C1 = 1.05  
 125 psig system pressure: C2 = 1.07  
 100°F inlet: C3 = 1  
 38°F required dew point: C4 = 1

Adjusted Capacity: 100 scfm x (1.05 x 1 x 1.07 x 1) = 112.4 scfm

### To Size the Dryer Model for Actual Conditions

Adjusted Capacity = scfm / (C1 / C2 / C3 / C4)

Example:

Given Flow: 75 scfm  
 Actual Operating Conditions:  
 80°F ambient: C1 = 1.07  
 100 psig system pressure: C2 = 1  
 90°F inlet: C3 = 1.21  
 38°F required dew point: C4 = 1

Adjusted Capacity: 75 scfm / (1.07 / 1.21 / 1 / 1) = 57.9 scfm  
 Selected Dryer Model: VF-60

### Correction Factors for Differing Ambient Temperature (C1)

Ambient Temperature (°F)	70	80	90	100	110	115	120
Correction Factor	1.1	1.07	1.05	1	0.94	0.85	0.65

### Correction Factors for Differing System Air Pressure (C2)

System Pressure (psig)	50	75	100	125	150	175	200	225
Correction Factor	0.85	0.95	1	1.07	1.13	1.18	1.2	1.22

### Correction Factors for Differing Inlet Air Temperature (C3)

Inlet Temperature (°F)	80	90	100	110	120
Correction Factor	1.5	1.21	1	0.82	0.75

### Correction Factors for Differing Pressure Dew Point Requirements (C4)

Dew Point (°F)	38	41	45	50
Correction Factor	1	1.12	1.17	1.22



1100 NW Loop 410 #764 · San Antonio, TX 78213 | 210-366-8805 | [support@airtec.global](mailto:support@airtec.global)

Please visit us at <https://airtec.global>

Aircel, LLC. reserves the right to update or change specifications at any time without prior notice.