

# Large Plenum Rated Heater CKL Series

## How to Size a CKL Heater

### Step1: Customer Supplied Specs Example:

1. Voltage Required	480V
2. Phase Required	3 Phase
3. ΔT (Temperature Rise)	70
4. Air Volume (CFM)	6000 CFM
5. Static Pressure	1.2" WG

### Step2: Calculate KW Requirement

- Calculate BTUH Requirement  
BTUH Formula = (CFM x 1.08) x Temperature rise  
(1.08 factor assumes air density at sea level)  
**Example: (6000 x 1.08) x 70 = 453,600 BTUH Requirement**
- Convert BTUH to KW Requirement  
KW Conversion Formula = BTUH/3413  
**Example: 453,600/3413 = 133KW.**  
Then round up to nearest kW in BASE MODELS CHART  
= **140KW Requirement**

### Step3: Select Base Model

- Refer to **BASE MODELS CHART**
- Select model matching Voltage, Phase and KW Requirements  
**Example: 480V, 3-Phase, 140kW**

### Step4: Select Motor Horsepower

- Refer to **AIR DELIVERY / MOTOR SELECTION CHART**
- Find CFM (Column B) matching customer requirement  
**Example: 6000 CFM**
- Refer to Static Pressure (Column E).  
Based on system static requirement  
**Example: 1.2" WG**, find the closest " WG  
that is equal or above the system requirement.  
**Example: 2.9" WG**
- Refer to Motor HP (Column D) and select related Motor HP  
**Example: 5HP**

### Step5: Select Additional Options

- SSR - Solid State Relays (SSR) for modulating 1 Stage (Vernier Stage)
- PT - Proportional Thermostat and remote sensor to control discharge temperature.
- D - (XX) Disconnect Switch  
**Example: No Additional Options Required**

### Step6: Compile Final Complete Model Number Based on Model Code Legend

**Example:** Final Model: CKL48140-3-8-6.0-1.2-VFD5

## How to Determine ΔT (Temperature Rise)

**Step1:** Winter Design Temp For Location

**Step2:** Desired Heater Discharge Temp

**Step3:** ΔT (Temperature Rise) = Heater Discharge Temp - Winter Design Temp

**Example:** 75°F 5°F = 70°F ΔT (Temperature Rise)

## Air Delivery / Motor Selection Chart

	A	B	C	D	E
				Motor HP	Max External Static ("WG")
ITEM NUMBER	CFM	FPM			
-2.5-x.x-VFD2	2,500	870		2	2.4
-2.5-x.x-VFD3	2,500	870		3	3.3
-3.0-x.x-VFD2	3,000	1,045		2	2.2
-3.0-x.x-VFD3	3,000	1,045		3	3.1
-3.5-x.x-VFD3	3,500	1,220		3	2.8
-3.5-x.x-VFD5	3,500	1,220		5	4.1
-4.0-x.x-VFD3	4,000	1,394		3	2.6
-4.0-x.x-VFD5	4,000	1,394		5	3.9
-4.5-x.x-VFD3	4,500	1,586		3	2.3
-4.5-x.x-VFD5	4,500	1,586		5	3.7
-5.0-x.x-VFD3	5,000	1,742		3	2.0
-5.0-x.x-VFD5	5,000	1,742		5	3.5
-5.5-x.x-VFD5	5,500	1,916		5	3.1
-5.5-x.x-VFD7.5	5,500	1,916		7.5	4.4
-6.0-x.x-VFD5	6,000	2,265		5	2.9
-6.0-x.x-VFD7.5	6,000	2,265		7.5	4.2
-6.5-x.x-VFD5	6,500	2,091		5	2.6
-6.5-x.x-VFD7.5	6,500	2,091		7.5	4.0
-7.0-x.x-VFD5	7,000	2,439		5	2.3
-7.0-x.x-VFD7.5	7,000	2,439		7.5	3.8
-7.5-x.x-VFD5	7,500	2,613		5	2.0
-7.5-x.x-VFD7.5	7,500	2,613		7.5	3.4
-8.0-x.x-VFD7.5	8,000	2,787		7.5	3.2
-8.0-x.x-VFD10	8,000	2,787		10	4.0
-8.5-x.x-VFD7.5	8,500	2,962		7.5	2.7
-8.5-x.x-VFD10	8,500	2,962		10	3.7
-9.0-x.x-VFD7.5	9,000	3,136		7.5	2.4
-9.0-x.x-VFD10	9,000	3,136		10	3.5
-9.5-x.x-VFD7.5	9,500	3,310		7.5	2.1
-9.5-x.x-VFD10	9,500	3,310		10	3.3
-10.0-x.x-VFD7.5	10,000	3,484		7.5	1.8
-10.0-x.x-VFD10	10,000	3,484		10	2.9
-10.0-x.x-VFD10	10,500	3,659		10	2.5
-11.0-x.x-VFD10	15,000	3,833		10	2.2
-11.0-x.x-VFD10	11,500	4,007		10	1.8
-12.0-x.x-VFD10	12,000	4,148		10	1.5

## Motor Amps Chart

Motor HP	208V FLA	240V FLA	480V FLA
2HP	7.8	6.8	3.4
3HP	11.0	9.6	4.8
5HP	17.5	15.2	7.6
7.5HP	25.3	22.0	11.0
10HP	N/A	N/A	14.0