



**KÜÜL®**  
**PADS**



**MADE IN  
U.S.A.**

## Agricultural



Küül® pad is the highest quality rigid cooling media on the market today. Specifically, Küül® pads are constructed with a heavier, virgin quality kraft paper containing a higher resin content which provides effective and efficient cooling while giving KÜÜL® pads greater durability, strength and longevity.

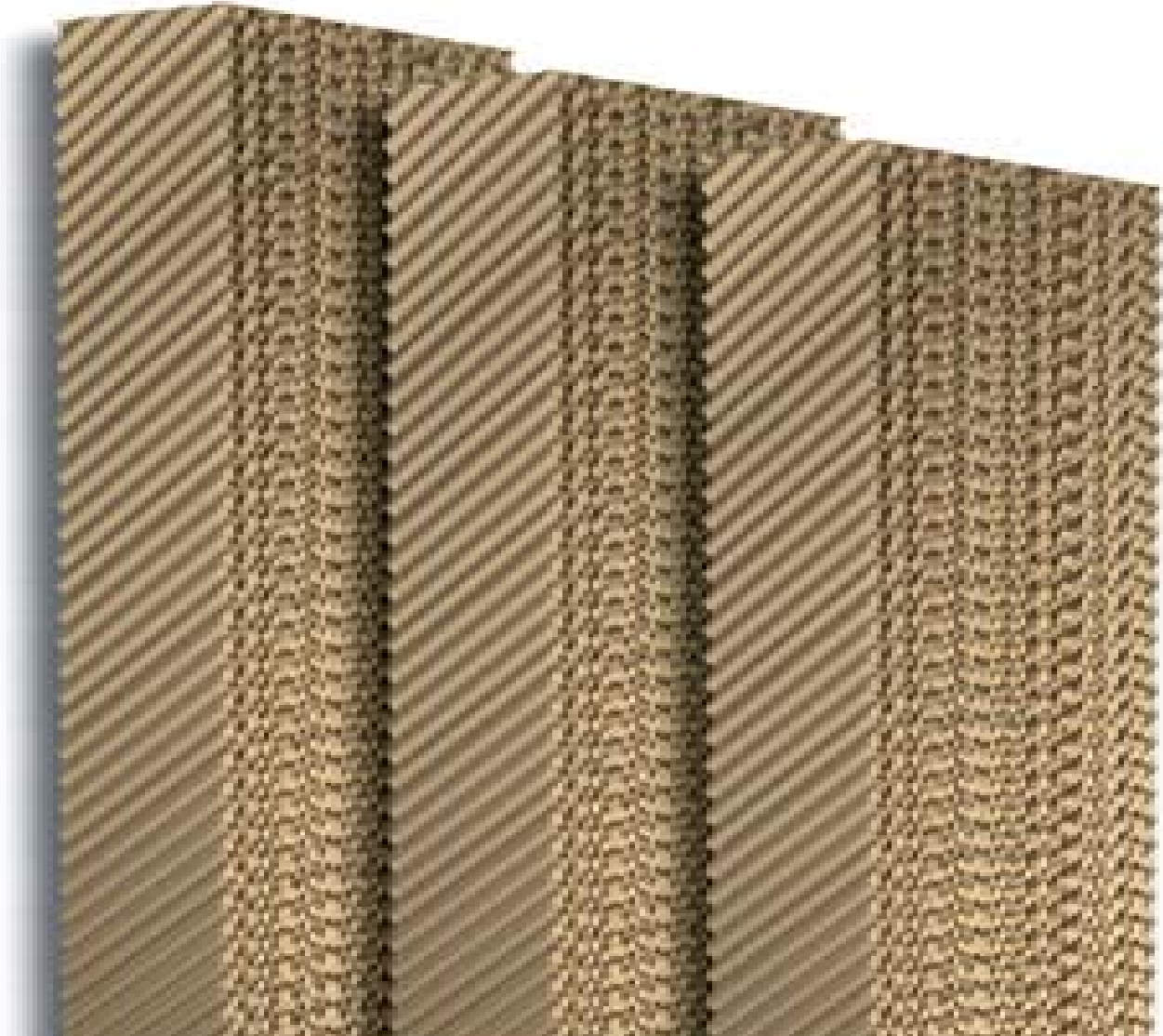
The agriculture and horticulture industries demanded more longevity from their media. KÜÜL® pads responded with the strongest, most durable pad on the market. The Ag-Hort, KÜÜL® pad design includes the heaviest basis weight paper used in the industry, as well

as the highest percentage of resin. The results of this combination are evident in the Ag-Hort, KÜÜL® pad's unmatched strength, rigidity, and pad life.

Küül® pads are cellulose cooling cells generally cut in 2", 4", 6", 12", even up to 24" thickness, and available in any length up to 78.75" with 12" and 24" standard width. Ag-Hort Küül® pads are generally manufactured in 2", 4", or 6" thickness. The cooling media is constructed of a specially formulated paper impregnated with insoluble resin. It is designed with a cross-fluted configuration, which induces highly turbulent mixing between the water and the air inside the pad; the air is bent at angles designed to maximize the evaporative efficiency while offering the least restriction of airflow. The cross-fluted design makes the pad strong, self-cleaning and self-supporting with high evaporative efficiency and low-pressure drop (resistance to airflow). The unique system used for manufacturing Küül® pads allow the manufacture of custom flute angle designs as well as the standard angles.

## Horticulture Applications

KUUL® pads cooling media is constructed of a specially formulated paper impregnated with insoluble resin. KUUL® pads are designed with a cross-fluted configuration, which induces highly turbulent mixing between the water and the air inside the pad. The air is bent at angles designed to maximize the evaporative efficiency while offering the least restriction of airflow. The cross-fluted design makes the pad strong, self-cleaning and self-supporting with high evaporative efficiency and low-pressure drop (resistance to airflow). The unique system used for manufacturing KÜÜL® pads allow the manufacture of custom flute angle designs as well as the standard angles.





## Commercial

KÜÜL® pads are the only cooling media designed and engineered specifically for different marketplaces.

The HVAC, KÜÜL® pad design rises to the demands of the heating, ventilation, and air conditioning industries by improving the saturatability of the media while surpassing the existing longevity standards. The HVAC, KÜÜL® pad has developed through years of research in the paper, saturation, and corrugation industries resulting in a product with

superior saturating capabilities.

Port-A-Cool, LLC KÜÜL® pads have been engineered to consider the product demands associated with application in the agricultural/horticultural and commercial evaporative cooling markets.

Port-A-Cool, LLC utilizes its own specialized method of manufacturing evaporative cooling media, the Thru-Cure method, which ensures that each individual sheet in a KÜÜL® pad is cured separately prior to its formation into block media thereby providing unmatched structural integrity.

Q. How long will my pads last?

A. The life of your pads depends on the quality of water used and proper maintenance. Please consult the instruction sheet.

Q. Why are KUUL pads better than the competition?

A. KUUL pads are better than the competitor's products because KUUL Pads are produced using the heaviest weight paper and resin content as well as a unique curing process that cures each sheet individually, making the pads more durable and long-lasting.

Q. How should I break-in my new pads?

A. New pads will often emit an odor when they are first soaked with water. The odor will dissipate after using the pads. To break-in new pads, thoroughly wet the pads before turning the cooling system on.

Q. How do I treat for scale?

A. Port-A-Cool LLC offers MK-47, an effective water treatment for scaling and mineral build-up on pads. MK-47 can be purchased by the bottle through distributors or online at [www.port-a-coolparts.com](http://www.port-a-coolparts.com).

Q. How do I treat for algae?

A. Use an algicide like Evap 100 and keep the pads and pump shaded. Algae will grow anywhere that is wet and exposed to direct sunlight. Also, if possible, identify and eliminate sources of nutrients in the water and dry the pads completely every 24 hours.

Q. Where are KUUL pads made and shipped from?

A. KUUL pads are manufactured in the United States at the Port-A-Cool, LLC facility located in East Texas where the products are also shipped to points all over the world.

Q. What chemicals are safe to use with my pads? A. Please see the Approved Chemicals sheet in the instruction sheet.

Q. How much bleed-off do I need?

A. The manufacturer recommends a 3 to 5 percent water bleedoff daily.

# KÜÜL® PADS

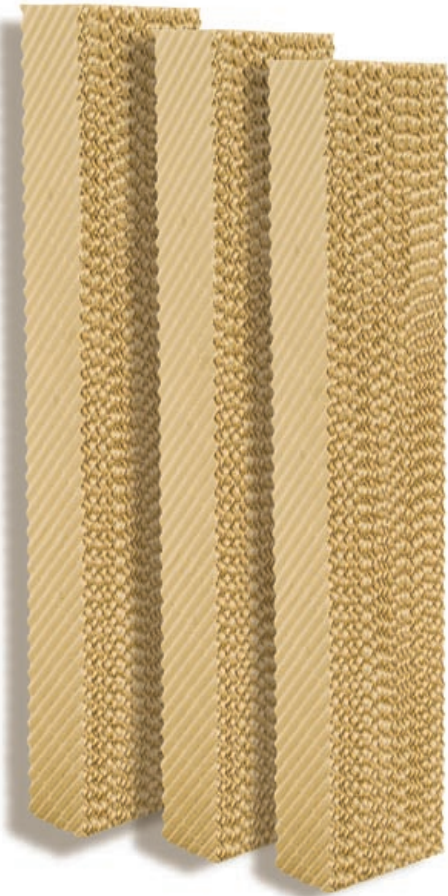
## SETTING THE STANDARD IN EVAPORATIVE COOLING MEDIA

KÜÜL® evaporative cooling media is manufactured in the USA by Port-A-Cool, LLC

## Maintenance Guide

Küül® pads are a durable and long lasting cooling media. Following are suggestions that will maximize the life and efficiency of the cooling pads.

- Port-A-Cool, LLC, recommends that the **pH** of the water be maintained at a **level between 6 and 8**. Exceeding these limits will seriously deplete the resin content of the pad and thus reduce its structural integrity.
- Remove and brush pads with a soft bristled brush and then **flush system to remove debris**. This should be done every 4 to 6 weeks during operating season.
- A **clean water distribution** system is the most important aspect for maintaining the entire evaporative cooling system. This, coupled with quarterly inspection/maintenance checks, will ensure a properly operating evaporative cooling system.
- **Frequently check system** for damaged or clogged cooling pads.
- **Minimize** the number of **on/off wetting cycles** for the cooling pads.
- Completely **dry the cooling pads** once every 24 hours.
- Maintain a **water bleed off** rate of 3-5% per day.
- Ensure sump tank is enclosed and cleaned bi-weekly.
- Clean water filters weekly.





## **SETTING THE STANDARD IN EVAPORATIVE COOLING MEDIA**

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### **Algae Growth and Mineral Build-up: Prevention Guide**

#### **Algae Growth**

Algae will grow on any surface that is wet and exposed to direct sunlight. Following are suggestions that will aid in the prevention of algae growth on your Küül® pads.

- Dry the pads at least once every 24 hours.
- Keep the pads and sump shaded from direct sunlight.
- Use an algaecide (i.e. *Evap 100™*).
- Identify and eliminate sources of nutrients in the water.
- Completely flush system every 4 to 6 weeks during the operating season.
- DO NOT use chlorine at levels that exceed 1ppm (parts per million).

#### **Mineral and Scale Build-up**

When water has a high mineral content, scale and mineral deposits form throughout the cooling pad. In order to aid in the prevention of mineral build-up follow these tips:

- Maintain the water at a pH level between 6 and 8.
- Avoid or minimize on/off wetting cycles.
- Use a daily water bleed off rate of 3-5%.
- Use a mineral prevention aid.
- Increase the amount of water flowing over the face of pads.



# the best choice for evaporative cooling systems

## Strongest, heaviest pad available

- Made with the heaviest, highest-quality virgin kraft paper in the industry for maximum longevity
- Highest resin content in the industry
- Out-performs the competition in tests:
  - High tensile strength, psi
  - High dry crush strength, psi
  - High wet crush strength, psi

## Available in custom sizes and flute angles

## Advanced resin technology

- Improves strength, longevity, absorption and cooling efficiency

## Produced using the most advanced curing process, Thru-Cure™, patent-pending

- Port-A-Cool, LLC cures each individual sheet separately
- Specializing in custom flute angles and sizes
- Cure is consistent and completely established throughout the entire pad, providing unequaled stability

## Edge coating available

- Most durable edge coating in the marketplace

## KÜÜL® pad service

- Custom orders welcomed
- Industries best lead time
- Custom orders welcomed
- Ongoing product development & research



# outperform the competition in tests

## PRODUCT PROPERTIES

### KÜÜL®, Glacier-Cor®\* and Munters®\*\*

Products tested by Dynea Overlays, Inc. in Hayward, WI

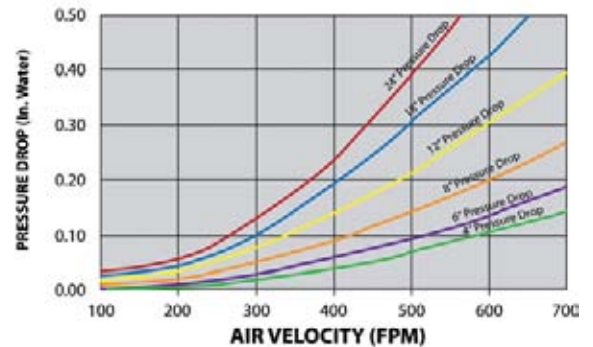
Pad Type	Tensile Strength psi***	Dry Crush Strength psi	Wet Crush Strength psi
KÜÜL®	68.15	42.62	30.63
Glacier-Cor®	63.19	35.21	20.49
Munters®	59.78	26.24	14.79

\*Glacier-Cor® is a registered trademark of Munters Corporation

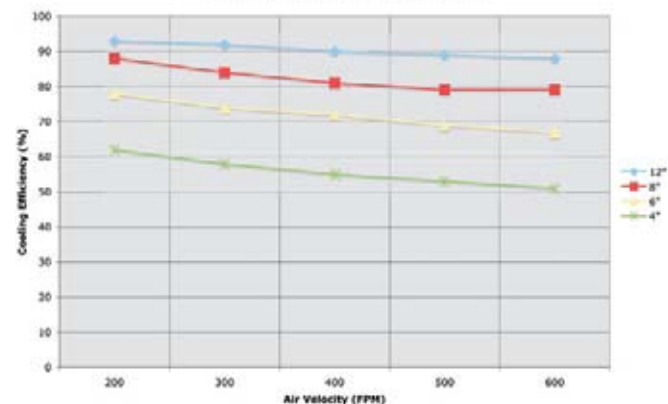
\*\*Munters® is a registered trademark of Munters Corporation

\*\*\*psi is pounds per square inch

Pressure Drop Performance



EFFICIENCY PERFORMANCE





# KÜÜL® PADS

# Meeting the evaporative cooling pad needs of all marketplaces

Custom sizes up to 24" thick and up to 78.75" in height. The unique system used for manufacturing KÜÜL® pads allows the manufacture of custom flute angle designs as well as the standard angles.



Available in Edge-Coated. Add "EC" to order number.

- **Agriculture**  
Poultry, Hog, and Dairy
- **Greenhouse**  
Space Cooling

## What is a KÜÜL® pad?

A KÜÜL® pad is the highest quality rigid cooling media on the market today. Specifically, KÜÜL® pads are constructed with a heavier, virgin quality kraft paper containing a higher resin content which provides effective and efficient cooling while giving KÜÜL® pads greater durability, strength and longevity.

KÜÜL® pads are cellulose cooling cells generally cut in 2", 4", 6", 12", even up to 24" thickness, and available in any height up to 78.75". Ag-Hort KÜÜL® pads are generally manufactured in 2", 4", or 6" thickness and 78" in height, while the HVAC KÜÜL® pads are available in up to 78 inches in height and 24 inches in width. The cooling media is constructed of a specially formulated paper impregnated with insoluble resin. It is designed with a cross-fluted configuration, which induces highly turbulent mixing between the water and the air inside the pad. The air is bent at angles designed to maximize the evaporative efficiency while offering the least restriction of airflow. The cross-fluted design makes the pad strong, self-cleaning and self-supporting with high evaporative efficiency and low-pressure drop (resistance to airflow). The unique system used for manufacturing KÜÜL® pads allow the manufacture of custom flute angle designs as well as the standard angles.

### Agriculture / Horticulture Specifications

Model No.	H x W x D (In.)	Shpg. Wt. (lbs.)
PAD6072	72 x 12 x 6	8.10
PAD6060	60 x 12 x 6	6.75
PAD6048	48 x 12 x 6	5.40
PAD6036	36 x 12 x 6	4.05
PAD4072	72 x 12 x 4	5.40
PAD4060	60 x 12 x 4	4.51
PAD4048	48 x 12 x 4	3.59
PAD2060	60 x 12 x 2	2.24

\*Available in EdgeCoat. Add EC to part number when ordering.

## KÜÜL® pad use - Climate Control

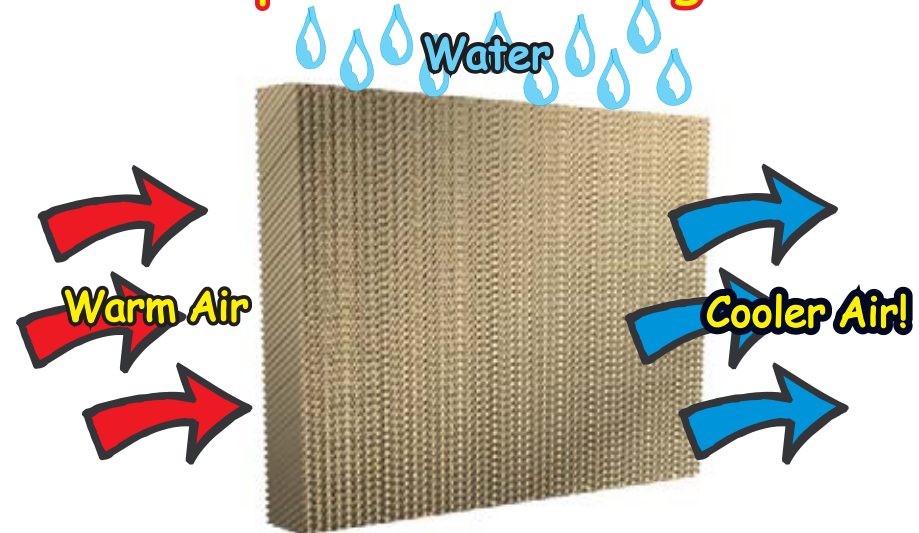
Direct evaporative cooling is most often associated with temperature reduction.

With an evaporative cooling pad, air is drawn through the wet media. The heat exchange occurs as air moves over the layered, fluted surfaces of the wet pad causing water to evaporate off the pad, thus removing heat from the air.

The key in achieving the best performance from an evaporative cooling system is maximizing the amount of air that comes into contact with the cooling pad surface area. Evaporative cooling pads typically produce the most efficient evaporative cooling when they are designed to provide the maximum interaction possible between air and water.

A properly designed and maintained pad-and-fan evaporative cooling system will effectively cool ventilation air without wetting a room and its contents. Proper design supplies: 1) water impartially over and through the pad area and 2) the desired air flow through the room. Good maintenance practices preserve the pad and keep the water delivery system in proper working condition.

## How Evaporative Cooling Works



## Why are KÜÜL® pads unique?

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## Why are KÜÜL® pads the strongest?

Single sheets of fluted cellulose virgin Kraft paper are impregnated and treated to provide both longevity and efficient wetting. The sheets are adhered together to form a block and KÜÜL® pads are cut from the blocks to meet size specifications. Thermal-setting resins are used to strengthen the paper and achieve water resistance. The resin impregnation and cure creates a rigid paper product that is self-supporting and water-resistant.

## Why are KÜÜL® pads the best choice

KÜÜL® pads are available in custom sizes and with or without edge coating. KÜÜL® pads are the best choice for your unique cooling needs.

- **LONG LIFE** - Utilizing the Thru-Cure method makes KÜÜL® pads more structurally durable and long-lasting
- **HIGH EFFICIENCY** - Cross-fluted pad configuration maximizes evaporative efficiency and makes the pad self-cleaning
- **MAXIMUM COOLING** - HVAC pads are specially manufactured to meet the demanding needs of that industry by providing the maximum saturation possible
- **SELF-SUPPORTING** - Ag-Hort pads include the heaviest paper, as well as the highest percentage of resin, making them rigid and long-lasting



Available in Edge-Coated. Add "EC" to order number.

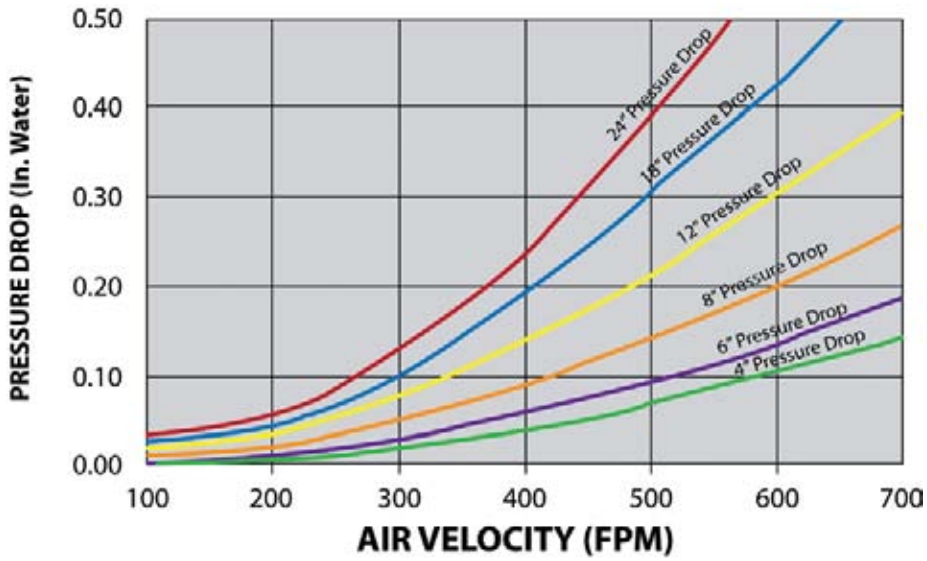
- **Commercial / Industrial**  
Evaporative Cooling Systems, Precoolers, Humidification,

### Commercial / Industrial Specifications

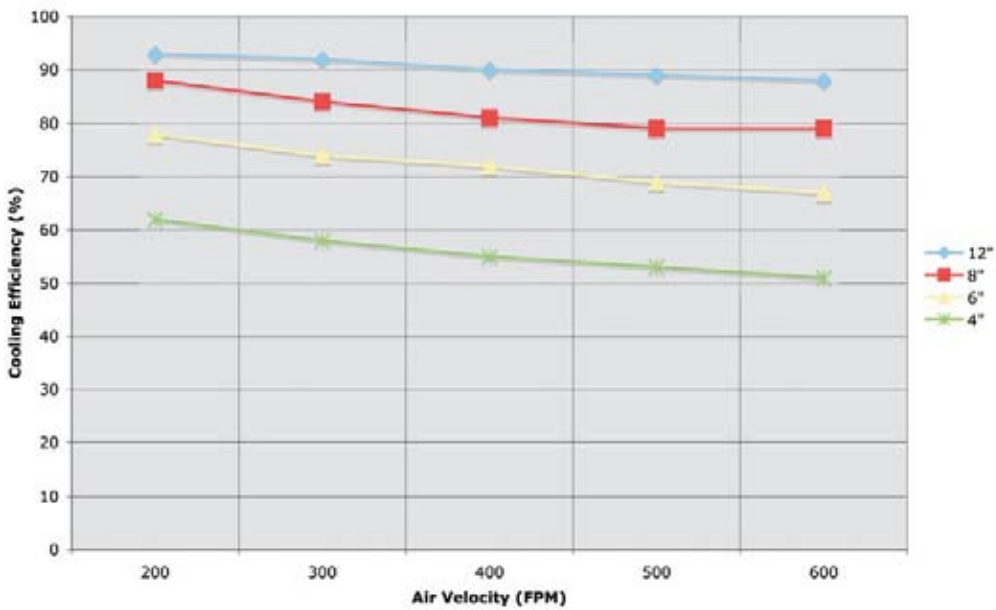
Mfr.	Mfr. Prt. No.	Dimensions (In.) H x W x D	Model No.	Shpg. Wt. (lbs.)
Champion/Essick	AS/ADA35	17 3/8 x 36 x 8	PAD801	10.0
Champion/Essick	S1500-S/D		PAD802	15.0
Champion/Essick	ADA/ASA/AUA50	22 1/2 x 41 1/4 x 8	PAD121	22.0
Champion/Essick	ADA/ASA50-12			
Champion/Essick	PCRN 8600	30 3/4 x 36 x 4	PAD401	9.0
Champion/Essick	PCRN 7000			
Champion/Essick	PCRN 6600	38 3/8 x 47 x 6	PAD601	22.0
Champion/Essick	PCRN 16000			
Champion/Essick	AUA70	29 1/8 x 41 1/4 x 8	PAD804	19.0
Champion/Essick	ADA70/ASA70			
Champion/Essick	S1700-S/D	29 1/8 x 41 1/4 x 12	PAD122	26.0
Champion/Essick	ADA7012/ASA7012			
Champion/Essick	PCRN 16000/-2	36 5/8 x 48 x 8	PAD806	28.0
Champion/Essick	PCRN 13000/-2			
Champion/Essick	PCRN 15000/-2	36 5/8 x 44 1/4 x 8	PAD807	26.0
Champion/Essick	PCRN 11000/-2			
Champion/Essick	AS/AD 100B	36 5/8 x 44 1/4 x 12	PAD123	37.0
Champion/Essick	AS/AD10012B			
Champion/Essick	AS/AD 150B	46 3/8 x 48 x 8	PAD808	35.0
Champion/Essick	AS/AD15012B			
Champion/Essick	46 3/8 x 48 x 12	23 x 40 x 8	PAD100	13.0
Champion/Essick	PM100			
Adobe	PM200	28 x 40 x 8	PAD200	17.0
Adobe	PM120			
Adobe	PM220	23 x 40 x 12	PAD120	22.0
Adobe	PM200			
Adobe	PM220	28 x 40 x 12	PAD220	26.0
Adobe	PM200			
Industrial M/C	PM300	37 1/2 x 40 1/2 x 8	PAD300	24.0
Industrial M/C	PM400			
Industrial M/C	PM500	44 1/2 x 48 x 8	PAD400	34.0
Industrial M/C	PM500			
Industrial M/C	PM500	44 1/2 x 48 x 12	PAD500	52.0
Industrial M/C	PM500			
Phoenix Aerocool	5-2-44	22 3/4 x 40 x 8	PAD244	14.0
Phoenix Aerocool	5-4-44			
Phoenix Aerocool	5-4-44	29 3/4 x 40 x 8	PAD444	19.0
Phoenix Aerocool	5-4-44			
UMP CelAir	CD550	24 x 36 x 8	PAD550	12.0
UMP CelAir	CD550			
UMP CelAir	CD850	30 x 48 x 8	PAD850	22.0
UMP CelAir	CD850			
Industrial M/C	PM422	30 x 40 x 8	PAD422	19.0
Industrial M/C	PM422			

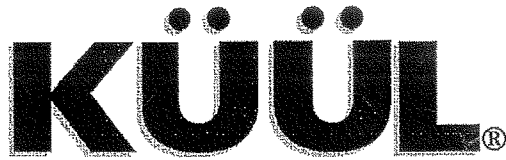


## Pressure Drop Performance



## Efficiency Performance





**APPROVED Products and Chemicals  
for use with KÜÜL® pads:**

Product Names

- Evap 100
- Aquamax
- Ice Wand
- PWT by Jones Hamilton Co.
- Agri-Cool II by RXV Products
- Ice Guard AP Nu-Calgon Wholesaler, Inc.
- VIROCIDE
- Bio Stop
- Kool-N-Kleen

Chemicals

- Quaternary amine
- Sodium hydrogen sulfate
- Alkyl dimethyl benzyl ammonium chloride

Note: Do not exceed recommended dosage by manufacturer.  
Water pH range must be 6-8 for maximum longevity.

**Products and Chemicals NOT recommended  
for use with KÜÜL® pads:**

Product Names

- SYNTRxpH Powder and pHresh Air SYNTRx Chemicals
- Peraclean 5
- Physan 20
- Greenshield CA
- Chlorine Bleach
- Proxy-Clean
- AguaKlen
- Chem Fresh

Chemicals

- Oxidizing agents or oxidizing biocides  
Ex. Chlorine dioxide, Sodium hypochlorite (chlorine bleach), Calcium hypochlorite, Hydrantoin (bromine), Sodium Chlorite
- Caustic chemicals or compounds  
Ex. Sodium hydroxide
- Strong Acids  
Ex. Hydrochloric and sulfuric acids

**Disclaimer Statement:** The above recommendations are based on general principals that have been known to have an effect on either the resin or the cellulose. It is not based on actual test results using the chemical in either lab or end application. If the chemical supplier disagrees with our opinion, it is recommended that they show proof that the chemical would not harm the evaporative pad.

Revised 9/25/2007