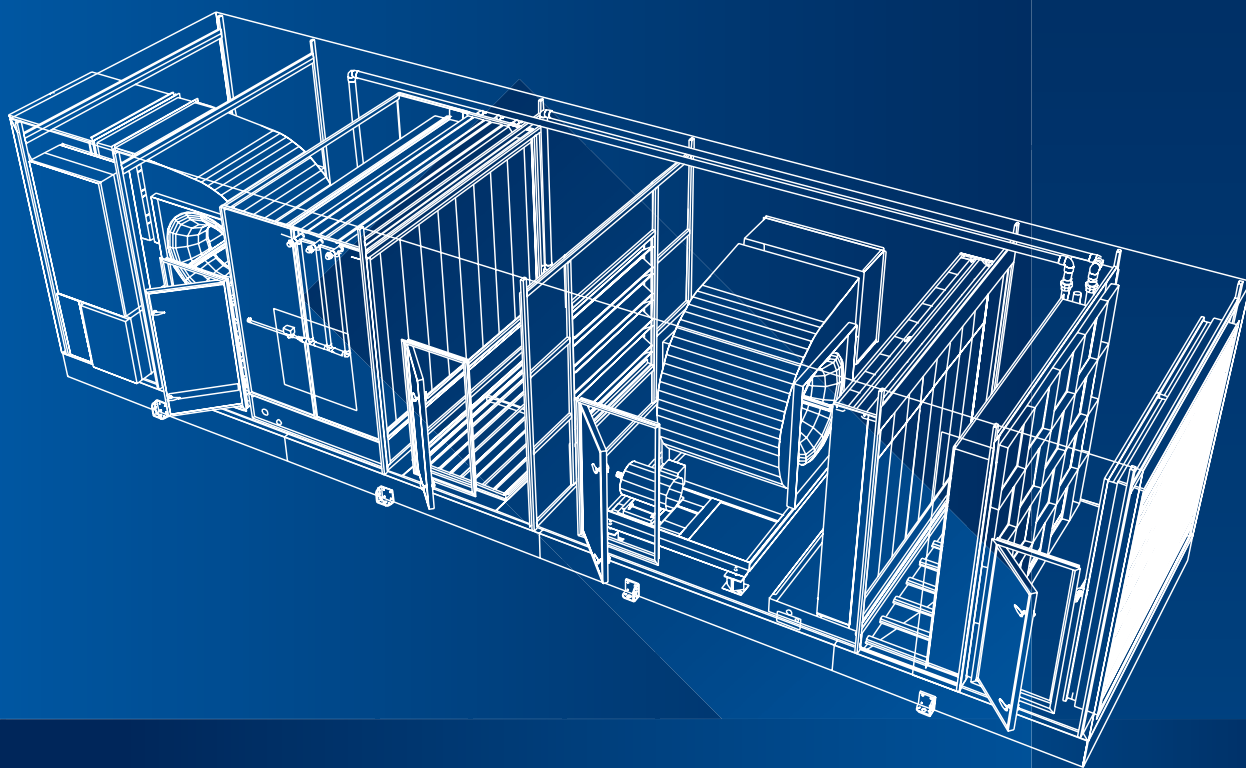




**United Metal
Products®**

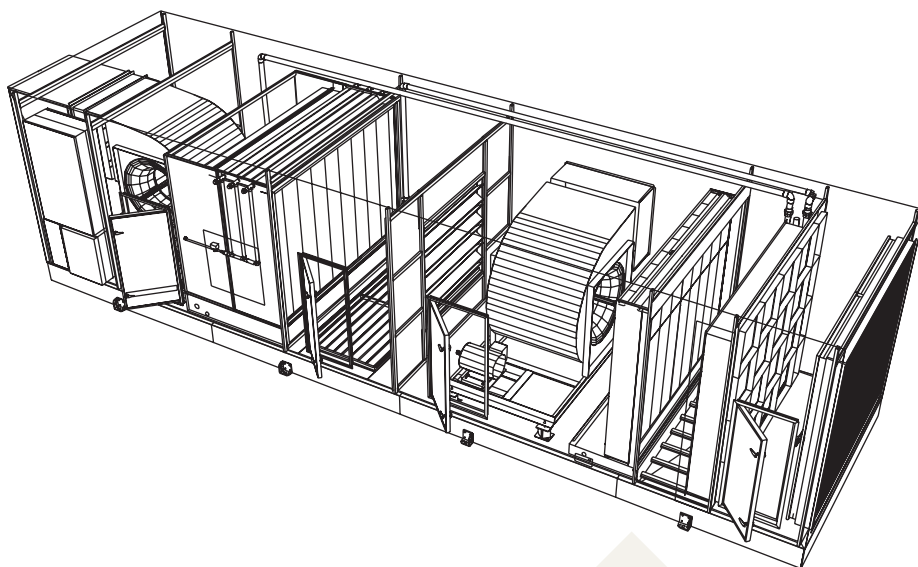
ERU

Energy Recovery Units



- *Production or custom design*
- *Package or split system*
- *Energy recovery: heat pipe, air to air, air to water, heat wheels*
- *ETL labeling available*
- *Powder coated*

Manufacturer of Quality Air Moving Equipment



Super Efficient Energy Recovery Units 5,000 to 40,000 CFM and higher

Why?

Designed specifically for high outside air capacity requirements and up to 60% savings in cooling cost, ease of maintenance, and quality construction, United Metal Products' Energy Recovery Units (ERU) is the cool solution. In applications where energy recovery is needed in colder climates, our Energy Recovery Units can be fitted with cross flow, heat pipe, or heat wheel exchangers as required by engineers. These energy recovery units are "super efficient", ranging from 60% to over 100% effective in high dry bulb applications. They are available in either production or custom design.

Design Options:

- 0-100% outside air
- 5,000 to 40,000 CFM and higher
- Production or custom design
- Package or split system

- Energy recovery: heat pipe, air to air, air to water, heat wheels
- Engineered primarily for high outside air requirements: 30%–100%
- Powder coated
- ETL labeling available

Applications:

- Airports
- Clean rooms
- Factories
- Hospitals
- Kitchens
- Prisons
- Terminals
- Call centers
- Convention centers
- Indoor Pools
- Offices
- Schools
- Theaters
- Casinos

Resources Available for This Product

- Catalog By Mail
- Catalog Online

United Metal Products

1920 E Encanto Drive Tempe, AZ 85281

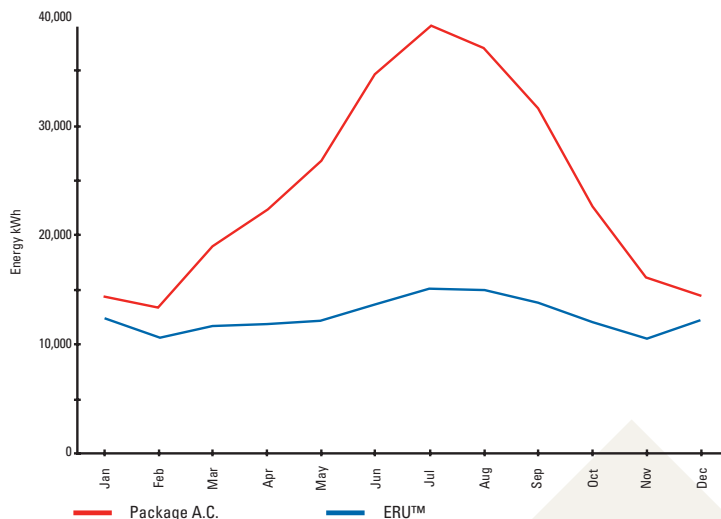
T 480.968.9550

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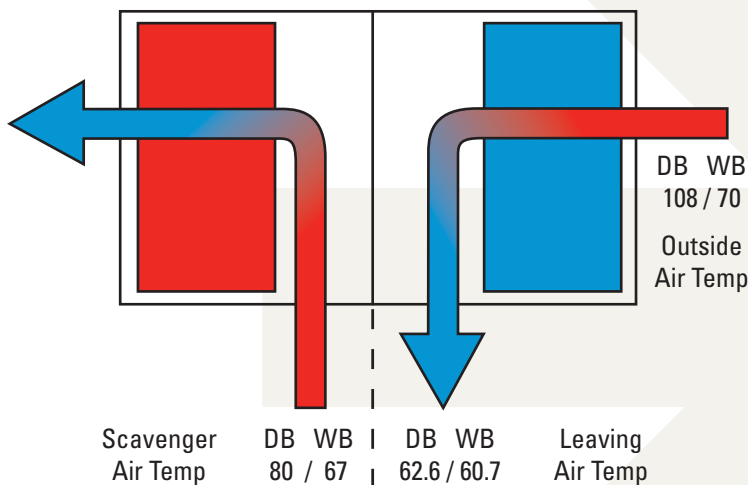


Yearly Cooling Demand



SEA™ Comparison Program—DOE-2 basis of analysis for Phoenix, AZ
Building Description: 100 feet wide X 100 feet deep

The Wet Bulb Energy Recovery System



Location	1% Coincident		Indirect LAT		Direct LAT	
	Dry Bulb	Wet Bulb	Dry Bulb	Wet Bulb	Dry Bulb	Wet Bulb
Albuquerque, NM	93	60	68.3	51.3	53	51.3
Denver, CO	90	59	66.8	50.6	52.2	50.6
El Paso, TX	98	64	72.5	55.3	57	55.3
Los Angeles, CA	81	64	68.3	59.4	60.3	59.4
Las Vegas, NV	106	66	76	55.6	57.6	55.6
Phoenix, AZ	108	70	79.5	60.7	62.6	60.7
Sacramento, CA	97	69	76	62	63.4	62
Salt Lake City, UT	94	62	70	53.6	55.2	53.6
San Jose, CA	89	66	71.8	60	61.2	60

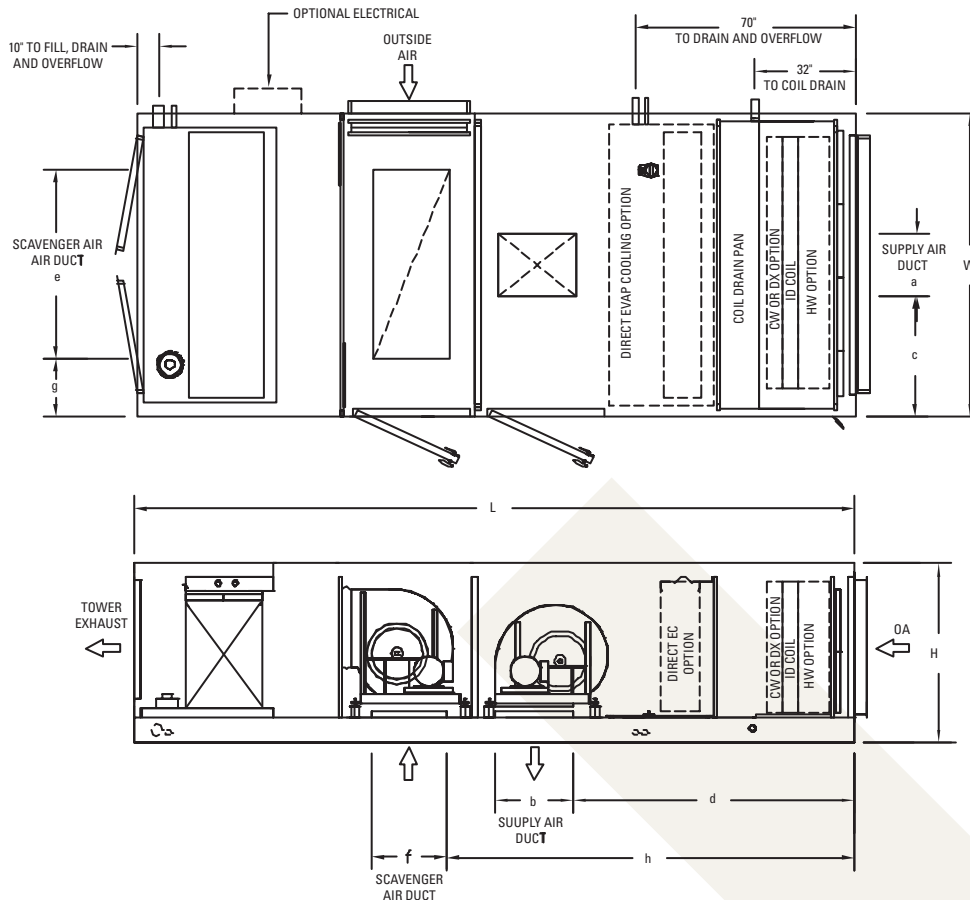
United Metal Products, the leading manufacturer of industrial and commercial air handling equipment in the Southwest, is introducing a revolutionary new product—ERU™. The key to this breakthrough is as old as the millennium—evaporative cooling. The ERU's unique configuration captures this simple, yet powerful, principle.

Energy recovery over the past decade has been largely centered around sensible recovery. Although this works well in the colder climatic regions of the world, it has not been as effective in areas where higher dry bulb temperatures exist. The principle is simple—exchanging temperature at the wet bulb level can increase efficiency by more than 50% over a standard dry bulb exchanger. This means big savings for the building owner.

Designed specifically for high outside air capacity requirements and up to 60% savings in cooling cost, ease of maintenance, and quality construction, United Metal Products' ERU is the cool solution.



Production ERU Layout Styles #1 thru #16

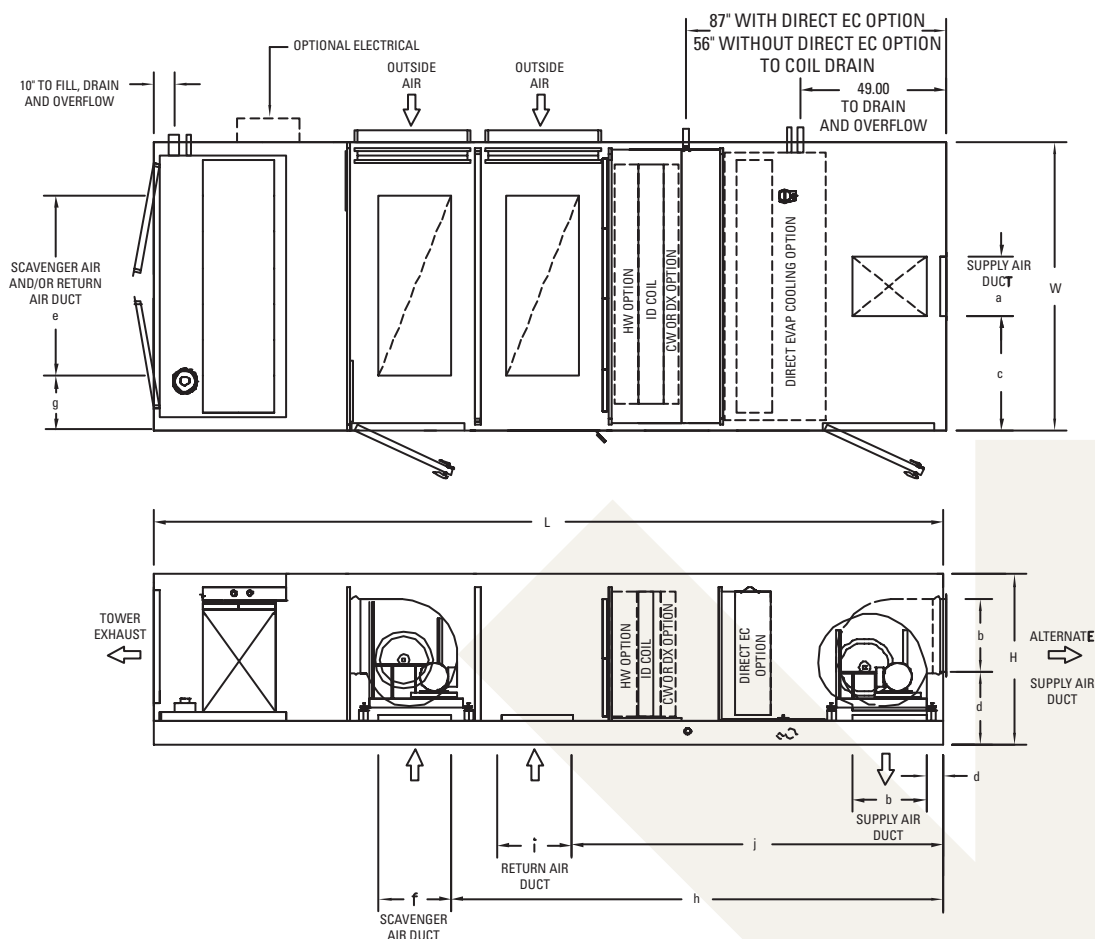


Air Volume (CFM)		5,000	10,000	15,000
Supply ESP (available at higher S.P.) ("WG)		0.5	0.5	0.5
Supply Motor: HP / Volt/Phase/Hz / Amps		5 / 460/3/60 / 7.6	7.5 / 460/3/60 / 11	15 / 460/3/60 / 21
Unit Dimesions (inches) - see drawing. Dimensions shown in parenthesis apply when Direct Evap Cooling option is included.				
Overall Unit Length	(L)	197.50 (228.00)	197.50 (228.00)	197.50 (228.00)
Overall Unit Width	(W)	60.00	96.00	96.00
Overall Unit Height	(H)	58.00	58.00	76.00
Supply Air Duct Width	(a)	14.70	19.75	27.25
Supply Air Duct Height	(b)	15.88	24.75	27.25
Supply Air Duct Location	(c)	22.65	38.12	34.38
Supply Air Duct Location	(d)	67.62 (98.12)	58.75 (89.25)	56.25 (86.75)
Scavenger Air Duct Width	(e)	24.00	60.00	60.00
Scavenger Air Duct Height	(f)	24.00	24.00	24.00
Scavenger Air Duct Location	(g)	30.00	30.00	30.00
Scavenger Air Duct Location	(h)	98.50 (129.00)	98.50 (129.00)	98.50 (129.00)
Return Air Duct Height	(i)	N/A	N/A	N/A
Return Air Duct Location	(j)	N/A	N/A	N/A
Shipped Weight (Lb) *		4,300 (5,150)	5,200 (6,200)	5,600 (6,750)
Operating Weight (Lb) *		5,500 (6,700)	6,500 (7,900)	7,000 (8,550)

* Weights based on indirect cooling option only (and direct evaporative cooler option shown in parenthesis). Weights will change as HW coil, CW coil and DX coil are added. Establish actual unit weight before calculating structural loadings. Specifications subject to change without notice.



Production ERU Layout Styles #17 thru #80



Air Volume (CFM)		5,000	10,000	15,000
Supply ESP (available at higher S.P.) ("WG)		0.5	0.5	0.5
Supply Motor: HP / Volt/Phase/Hz / Amps		5 / 460/3/60 / 7.6	7.5 / 460/3/60 / 11	15 / 460/3/60 / 21
Unit Dimensions (inches) - see drawing. Dimensions shown in parenthesis apply when Direct Evap Cooling option is included.				
Overall Unit Length	(L)	233.50 (264.00)	233.50 (264.00)	233.50 (264.00)
Overall Unit Width	(W)	60.00	96.00	96.00
Overall Unit Height	(H)	58.00	58.00	76.00
Supply Air Duct Width	(a)	14.70	19.75	27.25
Supply Air Duct Height	(b)	15.88	24.75	27.25
Supply Air Duct Location	(c)	22.65	38.12	34.38
Supply Air Duct Location (End / Down)	(d)	19.75 / 8.00	26.64 / 8.00	27.38 / 8.00
Scavenger Air Duct Width	(e)	24.00	60.00	60.00
Scavenger Air Duct Height	(f)	24.00	24.00	24.00
Scavenger Air Duct Location	(g)	30.00	30.00	30.00
Scavenger Air Duct Location	(h)	134.50 (165.00)	134.50 (165.00)	134.50 (165.00)
Return Air Duct Height	(i)	24.00	24.00	24.00
Return Air Duct Location	(j)	95.50 (126.00)	95.50 (126.00)	95.50 (126.00)
Shipped Weight (Lb) *		4,600 (5,450)	5,500 (6,500)	5,900 (7,050)
Operating Weight (Lb) *		5,800 (7,000)	6,800 (8,200)	7,300 (8,850)

* Weights based on indirect cooling option only (and direct evaporative cooler option shown in parenthesis). Weights will change as HW coil, CW coil and DX coil are added. Establish actual unit weight before calculating structural loadings. Specifications subject to change without notice.



Custom ERU Standard Features

All items listed here are a sample of what is typical. As these systems are custom built to site requirements in construction and performance they will be unique. We can include almost any component items into a unit whether they are listed here or not:

- ☒ 16ga pre-painted steel single skin cooling tower casing and double wall supply air casing
- ☒ Smooth or perforated inner liners with 1" or 2", 1.5# or 3# insulation
- ☒ Fans can be ordered for up, down or horizontal discharge
- ☒ Fans have powder coated fan housing, heavy duty L-50 200,000 hour bearings, belts & pulleys-fully installed, aligned and tensioned, 1" deflection springs, anti-vibration mounts with seismic restraints and flexible connector
- ☒ 460v/3ph/60Hz ODP standard efficiency motors on adjustable motor slide base
- ☒ Double-wall hinged access doors
- ☒ Cooling Towers have fully welded and painted G-90galvanized sump and media support with up to 36" thick CELdek® evaporative cooling media (not available with ETL label)
- ☒ Heavy duty cooling tower pumps with adjustable water flow, bleed lines and pipe work clean-out points
- ☒ 6 or 8 Row indirect cooling coils with 5/8" copper tubes and aluminum fins
- ☒ Schedule 80 PVC or copper piping for water distribution between cooling tower and indirect coil
- ☒ 2" 30% panel filters plus bag or cartridge filters (front or side access)

- ☒ Scavenger air exhausted from building by cooling tower fan
- ☒ Return air recirculation
- ☒ Fully weatherproof
- ☒ 4" double drainable weather louver with bird screen
- ☒ Fan door mechanical safety locks
- ☒ Pre-wired motors and pumps to a single external junction box

Custom ERU Optional Features

- ☐ Split or packaged systems designed and built to customer requirements
- ☐ 16ga G-90 galvanized single skin casing with tough powder coated finish to casing-baked at 375°F
- ☐ HW or steam heating coils
- ☐ CW or DX cooling coils
- ☐ Direct evaporative cooling
- ☐ Air-to-air plate heat exchangers - with or without bypass/recirculation dampers
- ☐ Heat wheels - either total heat or sensible heat transfer available
- ☐ Heat pipes
- ☐ Steam humidifiers
- ☐ Gas heating
- ☐ Sound attenuation
- ☐ HEPA filtration
- ☐ Filter pressure differential gauge or switch
- ☐ 90% efficient GLASdek® UL900 Class 2 evaporative media for ETL labeled units per UL 1995 standard
- ☐ Premium efficiency ODP or TEFC motors
- ☐ Extended fan bearing lubrication lines
- ☐ Fan bearings upgraded to L-10 200,000 hours
- ☐ Fan belt guards
- ☐ Safety door screens
- ☐ 2" deflection spring anti-vibration mounts with seismic restraints
- ☐ Stainless steel evaporative media holding rack

- ☐ Stainless steel sump & pumps
- ☐ Aluminum cabinet (for reduced operating weight)
- ☐ Stainless steel cabinet
- ☐ 2" double wall cooling tower
- ☐ Single point power connection with electrical transformers & magnetic motor starters
- ☐ Discharge temperature control
- ☐ Building static pressure control
- ☐ Total integration with building management systems
- ☐ Internal lights with weatherproof switch
- ☐ GFI receptacle
- ☐ Fan door safety disconnect switches
- ☐ Automatic flush kit with timer
- ☐ Automatic drain-down with timer
- ☐ Automatic drain-down & freeze protection with timer
- ☐ Roof curb-flat or pitched, insulated or uninsulated

Typical Applications

- Airports
- Call centers
- Casinos
- Clean rooms
- Convention centers
- Factories
- Hospitals
- Indoor Pools
- Kitchens
- Offices
- Prisons
- Schools
- Terminals
- Theaters



Production ERU Standard Features

- ☒ 16ga pre-painted steel single skin cooling tower casing and double wall supply air casing
- ☒ Smooth or perforated inner liners with 1" or 2", 1.5# or 3# insulation
- ☒ Fans can be ordered for down or horizontal discharge
- ☒ Fans have powder coated fan housing, heavy duty L-50 200,000 hour bearings, belts & pulleys-fully installed, aligned and tensioned, 1" deflection springs, anti-vibration mounts with seismic restraints and flexible connector
- ☒ 460v/3ph/60Hz ODP standard efficiency motors on adjustable motor slide base
- ☒ Double-wall hinged access doors
- ☒ Cooling Towers have fully welded and painted G-90galvanized sump and media support with 24" thick CELdek® evaporative cooling media (not available with ETL label)
- ☒ Heavy duty cooling tower pumps with adjustable water flow, bleed lines and pipe work clean-out points
- ☒ 6 Row indirect cooling coils with 5/8" copper tubes and aluminum fins
- ☒ Schedule 80 PVC piping for water distribution between cooling tower and indirect coil
- ☒ 2" 30% panel filters (side access)
- ☒ Scavenger air exhausted from building by cooling tower fan
- ☒ Return air recirculation (styles 17 - 80 only)
- ☒ Fully weatherproof
- ☒ 4" double drainable weather louver with bird screen
- ☒ Fan door mechanical safety locks
- ☒ Pre-wired motors and pumps to a single external junction box

Production ERU Optional Features

- ☐ 16ga G-90 galvanized single skin casing with tough powder coated finish to casing-baked at 375°F
- ☐ HW or steam heating coils
- ☐ CW or DX cooling coils
- ☐ Direct evaporative cooling
- ☐ Filter pressure differential gauge or switch
- ☐ 90% efficient GLASdek® UL900 Class 2 evaporative media for ETL labeled units per UL 1995 standard
- ☐ Premium efficiency ODP or TEFC motors
- ☐ Extended fan bearing lubrication lines
- ☐ Fan bearings upgraded to L-10 200,000 hours
- ☐ Fan belt guards
- ☐ Safety door screens
- ☐ 2" deflection spring anti-vibration mounts with seismic restraints
- ☐ Stainless steel evaporative media holding rack
- ☐ Stainless steel sump & pumps
- ☐ Aluminum cabinet (for reduced operating weight)
- ☐ Stainless steel cabinet
- ☐ 2" double wall cooling tower
- ☐ Single point power connection with electrical transformers & magnetic motor starters
- ☐ Discharge temperature control
- ☐ Building static pressure control
- ☐ Internal lights with weatherproof switch
- ☐ GFI receptacle
- ☐ Fan door safety disconnect switches
- ☐ Automatic flush kit with timer
- ☐ Automatic drain-down with timer
- ☐ Automatic drain-down & freeze protection with timer
- ☐ Roof curb-flat or pitched, insulated or uninsulated

Typical Applications

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