ARID-Dry™

Advanced Reactive Drying

PSYCHROMETRIC CHART

Normal Temperature • Sea Level

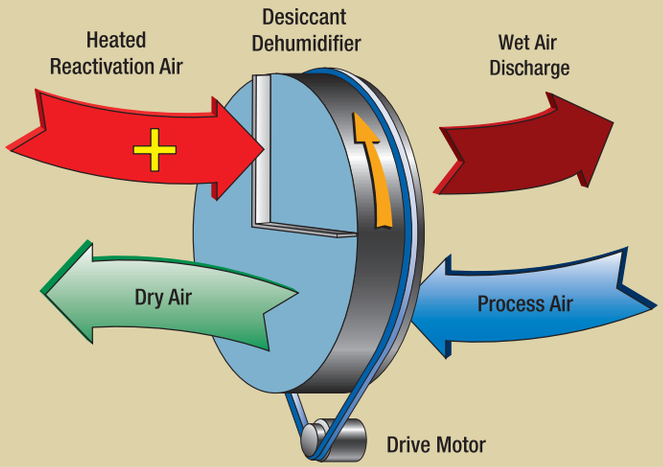
I-P Units • Barometric Pressure 29.921 in. HG

Controlled Dehumidification IMS (CDIMS)

ARID-Dry™ by Controlled Dehumidification IMS provides the power of desiccant dehumidification with optional discharge temperature control. Using vapor pressure reduction to deliver the deepest drying system available.

Adding the **ARID-Dry™** system to your drying business or indoor ice arena facility benefits your customers as well as your bottom line.

Call **810.229.7900** for complete drying solutions.



MS Series Capacity Data

Series	Max Air Volume*	Electric Reactivation FLA Load 220/1/60	Electric Reactivation FLA Load 460/3/60	Gas Reactivation FLA Load 220/1/60	Gas Reactivation FLA Load 460/3/60	CFH Gas Max Usage Natural	Gallon/HR Max Usage LP
MS-600	600	24	8.2	NA	NA	NA	NA
MS-1000	1,000	72	NA	NA	NA	NA	NA
MS-2400/2000	2,400	NA	51	30	NA	120	2
MS-3600/3000	3,600	NA	84	39	NA	200	2
MS-4800/4000	4,800	NA	104	45	NA	320	3
MS-6000/5000	6,000	NA	138	NA	13	400	4
MS-8500/7500	8,500	NA	200	NA	17	600	6
MS-14500/12000	14,500	NA	268	NA	35	900	10
MS-17500/15000	17,500	NA	335	NA	44	1,200	13
MS-27500/25000	27,500	NA	640	NA	82	1,724	18

Series	Max Air Volume*	Moisture Removal Lbs per hr. 80°/60% RH	Moisture Removal Gals per day 80°/60% RH	Moisture Removal Lbs per hr. 55°/80% RH	Moisture Removal Gals per day 55°/80% RH	Moisture Removal Lbs per hr. 40°/80% RH	Moisture Removal Gals per day 40°/80% RH
MS-600	600	8	23	6	18	5	16
MS-1000	1,000	24	68	21	59	14	39
MS-2400/2000	2,400	50	143	42	120	25	71
MS-3600/3000	3,600	82	236	70	201	45	129
MS-4800/3000	4,800	102	295	87	251	56	161
MS-6000/5000	6,000	136	392	115	331	75	216
MS-8500/7500	8,500	210	605	175	504	121	348
MS-14500/12000	14,500	334	962	281	809	193	556
MS-17500/15000	17,500	424	1,221	355	1,022	242	697
MS-27500/25000	27,500	678	1,953	568	1,635	387	1,115

*Moisture removal is nominal only for reference; Actual Performance will be based on specified conditions. *Maximum volume rated at 0" ESP.*

Mathematical Formulas

L= Length	W= Width	H= Height
D= Diameter	R= Radius	C= Circumference
A= Area of Surface	V= Volume	π= Pi= 3.1416
S= Length from Top to Side of a cone		
B= Length of Base		
Circle	D = 2R	
	C = 2πR	=D(3.1416)
	A = πR²	=D²(.7854)
Cylinder (i.e. Tank)	V = πR²H	=D²(.7854)H
	A = 2πR(H+R)	
Sphere	V = 4πR³/3	=D³(.5236)
	A = 4πR²	=D²(3.1416)
Cone	V = πR²H/3	=D²(.2618)
	A = πR(H+S)	
Rectangle	A = W x L	
Rectangle Solid	V = W x L x H	
	A = 2(WL + LH + HW)	
Triangle	A = (B x H)/2	

Electrical Formulas

V = Volts I = amps R = ohms kVA = kilovolt amps

kW = kilowatts HP = horsepower

pf = power factor (if known, for 1ϕ use 0.8, for 3ϕ use 1.0)

Eff = motor efficiency (if known, use .85)

To Obtain	Single Phase	Three Phase
kw	V x I x pf / 1000	1.73 x V x I x pf / 1000
kVA	V x I / 1000	1.73 x V x I / 1000
Amps	(kW x 1000) / (V x pf)	(kW x 1000) / (1.73 x V x pf)
Amps	(kVA x 1000) / V	(kVA x 1000) / (1.73 x V)
Amps	(hp x 746) / (V x pf x Eff)	(hp x 746) / (1.73 x V x pf x Eff)
HP	(V x I x Eff) / 746	(V x I x Eff x 1.73) / 746
Either Phase, Any Voltage		
Amps	Volts / Ohms	
Volts	Amps x Ohms	
Ohms	Volts / Amps	

Transformer (primary amps) = (kVA x 1000) / primary voltage {1ϕ}

Transformer (secondary amps) = (kVA x 1000) / second voltage {1ϕ}

Cost to operate equipment = kW x Hours x kW cost per hour

Air Calculations

Sensible Heating:	Btuh capacity	=Temperature Change x cfm x 1.08
	kW of heating capacity	=Btuh / 3,414
Sensible Cooling:	Btuh capacity	=Temperature Change x cfm x 1.08
	Tons of cooling capacity	=Btuh / 12,000
Sensible / Latent Cooling	Btuh capacity	=Enthalpy Change x cfm x 4.5
	Tons of cooling capacity	=Btuh / 12,000
Temperature Change:	ΔT	=Btuh / (cfm x 1.08)
(sensible only)		
Buth Needed:	Btuh	=cfm x 1.08 x ΔT needed
(sensible only)		
Humidification:	Lbs. / Hr	=cfm x 4.5 x ΔM / 700
Blended Air Streams:	Tblend=((TA x CFMA) + (TB x CFMB)) / (CFMA + CFMB)	
	Mblend=((MA x CFMA) + (MB x CFMB)) / (CFMA + CFMB)	
	Where: T is temperature of the air stream (°F)	
	M is moisture of the air stream (gr/lb)	
Air Volume:	cfm: =FPM x Face Area in Sq. Ft.	
	Where: FPM = Velocity of airstream in feet/minute	
	Face Area in Sq. Ft. for:	18" duct = 1.7671 ft²
		12" duct = .7854 ft²
		8" duct = .3490 ft²
Air Velocity:	FPM	=cfm / Face Area in Sq. Ft.

Controlled Dehumidification IMS (CDIMS)

5931 Ford Court, Brighton, MI 48116
810.229.7900 • Fax: 810.229.7908
sales@cdims.com • www.cdims.com

ETL-C, ETL and CE Rated

Conversion Formulas

To Convert…	Into…	Multiply by…
Weight:		
Ounces	Grams	28.35
Pounds	Kilograms	0.45
Grams	Ounces	0.035
Kilograms	Pounds	2.21
Grains/Pound (gr/lb)	Grams/Kilograms (k/kg)	0.143
Air Volume:		
Cubic Feet	Cubic Meters	0.0283
Cubic Meters	Cubic Feet	35.31
Feet³ / Minute (CFM)	Meters³ / hour	1.699
Meters? / Hour (CMH)	Feet³ / Minute	0.5882
Miscellaneous:		
Tons (refrigeration)	Btu / H	12000.00
Tons (refrigeration)	Kilowatts	3.52
Kilowatts	Btu / H	3414.0
Watts	Horsepower	1.34 x 10^{-3}
Fahrenheit	Celsius	(°F32) x .56
Celsius	Fahrenheit	(1.8 x °C) + 32