



Evaporator Power Consumption

The following is actual loaded fan operation data collected by AC Electric at our request to determine actual power consumption. This test utilized a chart recorder and the following summary is from information taken from that chart recorder.

Listed below is record 51 as an average record.

AMP	KW	POWER FACTOR	VOLT	KVA CODE	EFFICIENCY @ OPERATING
23.49	10.45	.99	450	G	94.2

FORMULAS FOR ELECTRICAL CIRCUITS

TO FIND	DIRECT CURRENT	SINGLE PHASE	THREE PHASE
AMPERES	Watts/volts	Watts/volts x Power factor	Watts/1.732 x Volts x Power factor
VOLT-AMPERES	-----	Volts x Amperes	1.732 x Volts x Amperes
WATTS	Volts x Amperes	Volts x amperes x power factor	1.732 x Volts x Amperes x power factor

FORMULAS FOR ELECTRIC MOTORS

TO FIND	DIRECT CURRENT	SINGLE PHASE	THREE PHASE
HORSEPOWER	$E \times I \times \text{EFF}/746$	$E \times I \times \text{EFF} \times \text{PF}/746$	$1.732 \times E \times I \times \text{Xeff} \times \text{PF} / 746$
CURRENT	$746 \times \text{HP}/E \times \text{Xeff}$	$746 \times \text{HP}/ E \times \text{EFF} \times \text{PF}$	$746 \times \text{HP}/ 1.732 \times E \times \text{EFF} \times \text{XPF}$
EFFICIENCY	$746 \times \text{hp}/E \times I$	$746 \times \text{HP}/E \times I \times \text{PF}$	$746 \times \text{HP}/1.732 \times E \times I \times \text{XPF}$
POWER FACTOR	_____	Input watts/ $E \times I$	Input Watts/ $1.732 \times E \times I$

E = Volts

I = Amperes

EFF = Efficiency (decimal)

PF = Power Factor (decimal)

HP = Horsepower

Utilizing these formulas allow us to determine the operational cost of running our motor which has a plated horse power of 40 but actually operates at 23 horsepower as you shown on the following page, using our chart recorder figures to do the calculations.

POWER CONSUMPTION OF THE S30P EVAPORATOR

Watts = volts x amperes

Using record 51 as an average from our chart recorder the results are as follows:

Watts = $450.1 \times 23.49 = 10,572.85$ watts or 10.572 Kilowatts

Since this unit is running on three-phase power we have to utilize the correct formula for 3 phase to determine the kilowatts per hour consumed by this motor.

Watts= 1.732 x volts x amperes x power factor

Watts = 1.732 x 450.1 x 23.49 .941 x .99

Watts = 17059.37

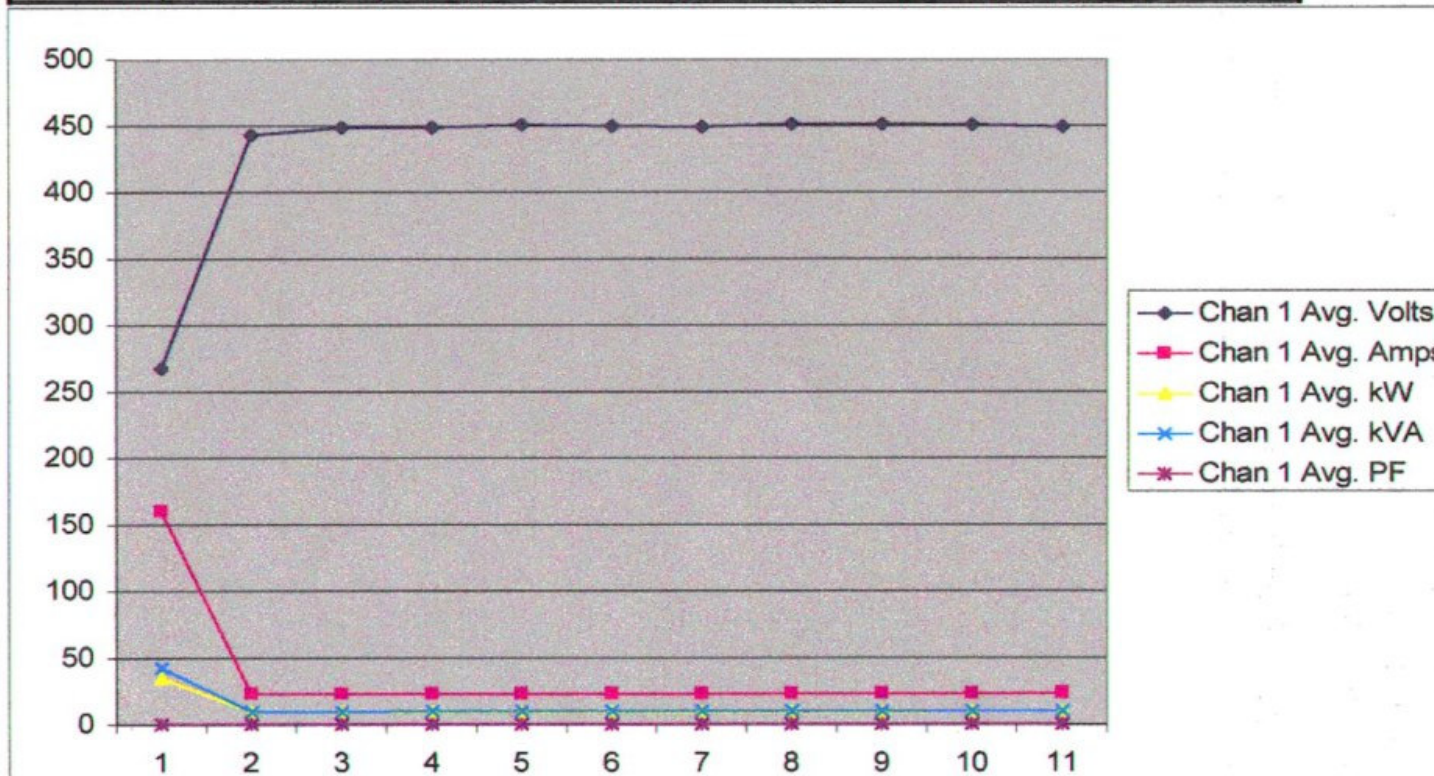
Kilowatts = 17.059

Power Rate (cents per hour)	2.5	3.0	3.5	4.0	5.0	6.0
Hourly Cost	\$0.43	\$0.51	\$0.60	\$0.68	\$0.5	\$0.02
24 Hour Cost	\$10.32	\$12.24	\$14.40	\$16.32	\$20.40	\$24.48

All test data was recorded at 1200 feet above sea level at 40 degree F, by independent service agency. Complete chart recorder data available upon request.

Below is sample of the chart recorder taken for Slimline Manufacturing Ltd by AC Electric, an independent contractor located in Penticton,

Record Number	Record Date	Record End Time	Chan 1 Avg. Volts	Chan 1 Avg. Amps	Chan 1 Avg. kW	Chan 1 Avg. kVA	Chan 1 Avg. PF
45	12/16/99	13:45:00	268.3	160.36	36.012	43.028	0.84
46	12/16/99	13:46:00	443.6	23.49	10.317	10.418	0.99
47	12/16/99	13:47:00	449.2	23.4	10.389	10.511	0.99
48	12/16/99	13:48:00	449.1	23.51	10.44	10.56	0.99
49	12/16/99	13:49:00	451.1	23.54	10.491	10.619	0.99
50	12/16/99	13:50:00	450.1	23.49	10.454	10.571	0.99
51	12/16/99	13:51:00	449.6	23.57	10.487	10.598	0.99
52	12/16/99	13:52:00	451.7	23.43	10.473	10.582	0.99
53	12/16/99	13:53:00	451.9	23.46	10.49	10.599	0.99
54	12/16/99	13:54:00	451.5	23.63	10.558	10.669	0.99
55	12/16/99	13:55:00	449.6	23.89	10.644	10.738	0.99



BC.