

Updated Cryometrix B-90 Blast/Thaw Freezer Cost Analysis

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Cryometrix B-90 Blast Freezer

- 400 Units Max @ 2 Hours Cycle Time
- 200 Units/Hour Throughput
- 1,404 Annual Hours Runtime
- 0.80 kW-hr/hr Usage
- 15 gal/hr LN2 Usage
- \$850 Annual Maintenance Cost
- 20 ft² Required Floor Space
- 20 Year Service Life

Traditional Mechanical Freezer

- 36 Units Max @ 1.5 Hours Cycle Time
- 24 Units/Hour Throughput per Unit
- 8,372 Annual Electric Hours Runtime per Unit
- 1.25 kW-hr/hr Usage
- No LN2 Usage
- \$5,930 Annual Maintenance Cost per Unit
- 32 ft² Required Floor Space per Unit
- 7 Year Service Life

ROI		Mechanical	Cryometrix
Freezer Cost	Note: Freezer ratio = 8:1 for equivalent throughput	# Units =	8
		Price per Unit =	\$ 36,000.00
		Total Price =	\$ 288,000.00
Annual Operating Cost	Electric Power Consumption @ \$0.160/kW-hr =	\$ 10,716.16	\$ 179.71
	HVAC Power Consumption @ \$0.160/kW-hr =	\$ 2,679.04	-
	Liquid Nitrogen Consumption @ \$0.950/Gallon =	-	\$ 20,007.00
	Maintenance & Repairs =	\$ 47,440.00	\$ 850.00
	Lab Floor Space @ \$27/Yr/SqFt =	\$ 6,912.00	\$ 540.00
	Replacement Cost @ Service Life 7 Yrs =	\$ 41,142.86	-
	Replacement Cost @ Service Life 20 Yrs =	-	\$ 3,000.00
	Total Annual Operating Expenses =	\$ 108,890.06	\$ 24,576.71
ROI =			8.5 months

Capacity & Throughput	Load Capacity	Cycle Time	Throughput
Mechanical Blast Freezer =	36 Units Max	90 Minutes	24 Units/Hour
B-90 Blast Freezer =	400 Units Max	120 Minutes	200 Units/Hour

Conclusions

- Reduces costs by eliminating traditional mechanical refrigeration systems
- Replaces most electric power usage with energy efficient LN2 Technology
- Eliminates usage of harmful refrigerants
- Demonstrates a return on investment (ROI = 8.6 months)
- Offers increased load capacity (101%) and throughput (73%) in freezer-to-freezer comparisons at maximum load
- Yearly Savings of \$84,300
- Operational Lifetime Savings of \$1,686,000