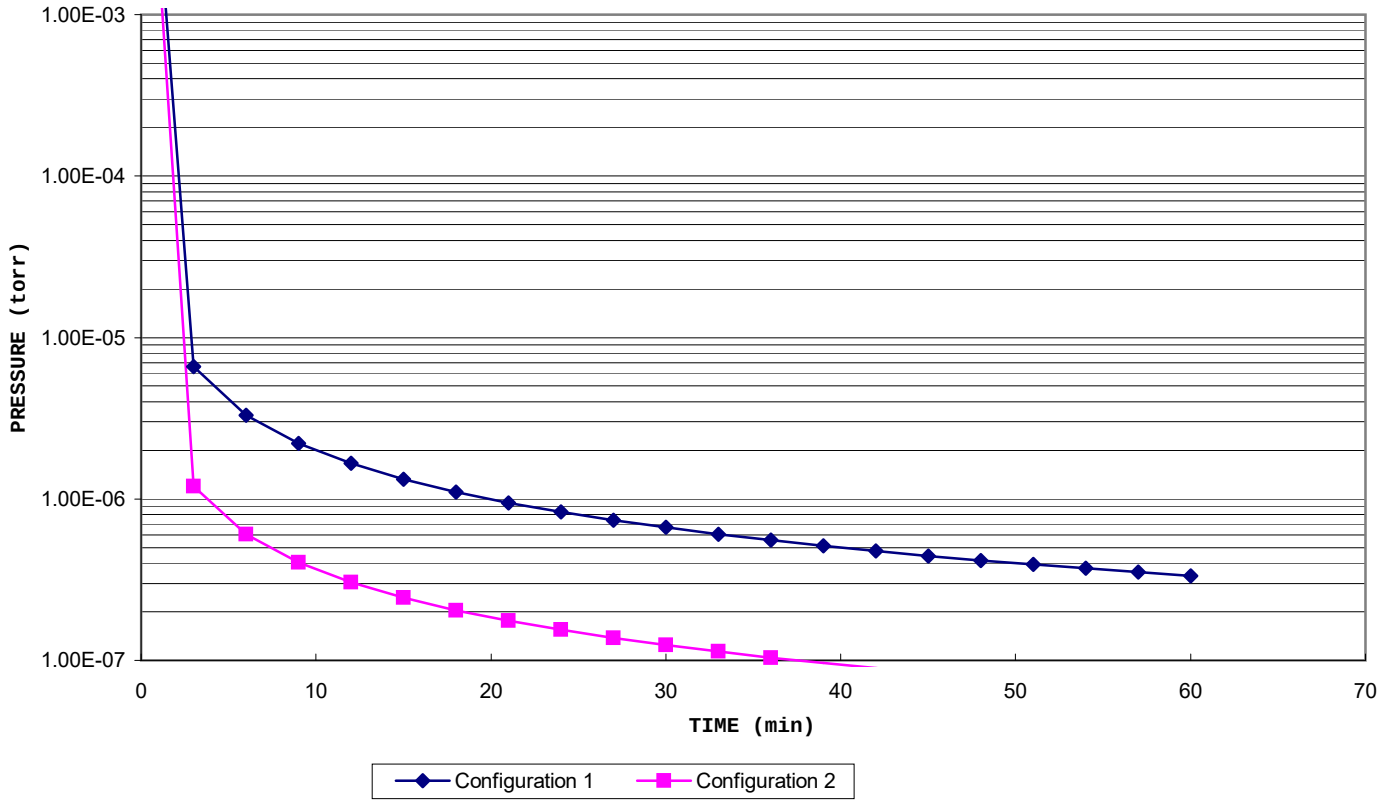
Chamber Pump Down Calculations

CTI-CRYOGENICS
HELIX TECHNOLOGY CORPORATION

Customer: **CPA Sputtering Systems, Inc.**
Machine: **MK50**

Configuration:	**CT-400 (blue)**	**CT-400 w/ Polycold 40' coil (red)**	
Assumptions:	**Configuration 1**	**Configuration 2**	
Chamber Surface Area	7.48E+04	7.48E+04	sq cm
Chamber Volume	792	792	liters
Cross Over Pressure	100	100	microns
Diameter of Hi-Vac Port	40.00	40.00	cm
Conductance Limiters	1	1	
Argon Flow Rate	scc/min		
Chamber Pumping Speeds:			
Air Net Pumping Speed at Chamber	4749	4749	l/sec
Water Net Pumping Speed at Chamber	10895	60895	l/sec
Argon Net Pumping Speed at Chamber	3975		l/sec



These vacuum performance projections are not a guarantee of system performance. This model accounts for residual air removal and approximates water outgassing from metal surfaces and o-ring permeation; the model does not account for real or virtual leaks or poor assembly techniques (e.g. poor cleanliness). These results are not to be used as performance specifications.

CTI-Cryogenics Engineer: S Y Cheung

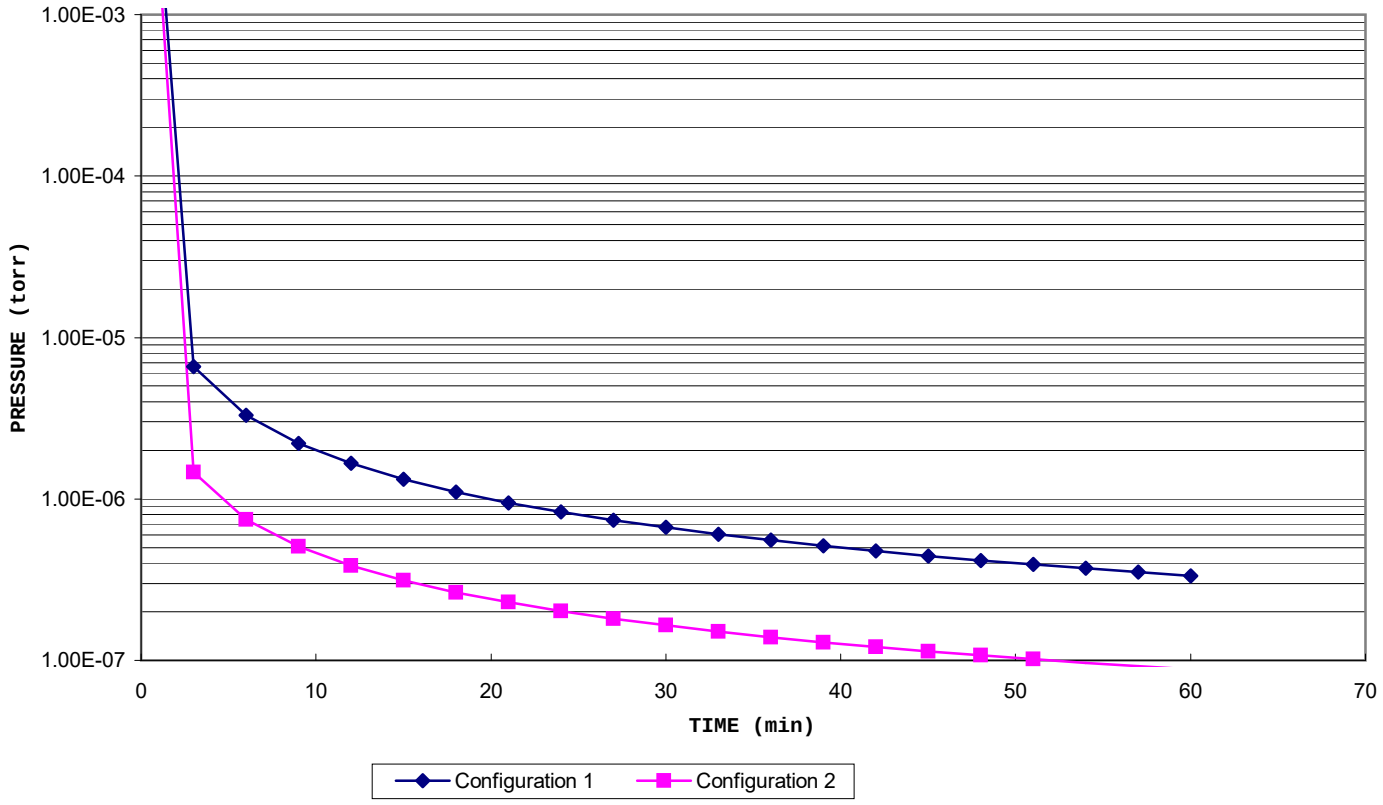
Rev E 11/14/02

Chamber Pump Down Calculations

CTI-CRYOGENICS
HELIX TECHNOLOGY CORPORATION

Customer:
Machine:

Configuration:	**CT-400 (blue)**	**CT-8 w/ Polycold 40' coil (red)**	
Assumptions:	**Configuration 1**	**Configuration 2**	
Chamber Surface Area	7.48E+04	7.48E+04	sq cm
Chamber Volume	792	792	liters
Cross Over Pressure	100	100	microns
Diameter of Hi-Vac Port	40.00	20.00	cm
Conductance Limiters	1	1	
Argon Flow Rate	scc/min		
Chamber Pumping Speeds:			
Air Net Pumping Speed at Chamber	4749	1101	l/sec
Water Net Pumping Speed at Chamber	10895	52270	l/sec
Argon Net Pumping Speed at Chamber	3975		l/sec



These vacuum performance projections are not a guarantee of system performance. This model accounts for residual air removal and approximates water outgassing from metal surfaces and o-ring permeation; the model does not account for real or virtual leaks or poor assembly techniques (e.g. poor cleanliness). These results are not to be used as performance specifications.

CTI-Cryogenics Engineer: S Y Cheung

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