Jupiter Scientific

Callisto Dry Scrubber

Jupiter Scientific's Callisto Dry Scrubber is a point-of-use exhaust treatment system with a broad range of process gas scrubbing capability. The Callisto Dry Scrubber retains all of the features of the larger Callisto Systems in a smaller package. The Callisto system employs Jupiter Scientific's 140 Liter Callisto Scrubbing Cartridges to offer the lowest emissions of any scrubber available today at an extremely affordable price. In all cases where the Callisto is employed it offers guaranteed scrubbing of the target gases to levels below Threshold Limit Values.

The Callisto Dry Scrubbing system employs chemisorption to abate a wide array of industrial emissions. Our chemisorbents ensure that gases have the fastest rate of mass transfer to the adsorbent. The chemisorbents also convert pollutants to stable solids that will not desorb at a later time.

Callisto 145 liter cartridges are custom blended to each application to ensure maximum abatement of all process gases. This guarantees that customers will achieve compliance for all gases in their process recipe. Custom blending also ensures that adsorbents are not poisoned or fouled since potential poisons and fouling agents are removed before they can harm adsorbents.

In addition, the sophisticated control system of the Jupiter Scientific Callisto maintains a history of all scrubber alerts, temperatures, and exhaust concentration to verify performance and compliance with regulations.

Standard Features of the Callisto Dry Scrubbing System:

- Employs Callisto Scrubbing Cartridges for guaranteed sub TLV emissions
- Color Touch Display
- Integrated cabinet and exhaust gas monitoring system to ensure user safety and verify regulatory compliance
- Interlocks to ensure Callisto is operating within specifications
- Real time permanent exhaust concentration data logging
- Ability to extract pressure, temperature and exhaust gas history to USB thumb drive
- Interlock connections to prevent reactor operation when Callisto is offline or in an error state
- Visual and audible alarms
- Integrated flow management
- Integrated temperature monitoring
- Integrated vacuum pump
- Native MODBUS slave (Profibus and Devicenet optional)
- Integrated canister leak check function
- Integrated air oxidation capability
- Ethernet remote access
- Integrated PID pressure control to ensure constant inlet pressure
- Made in the United States of America

Call us for further information at (888) 511 - 2479, or visit us on the web at
www.jupitersci.com. Jupiter Scientific Inc., 4608 Enterprise Commons, Fremont, CA 94538

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Callisto Dry Scrubber

Dual Callisto

The Callisto Dry Scrubbing System is available in a dual configuration also. The Dual Callisto system employs two canisters which can run in a configuration where canister supplies a hot backup to the other or in a configuration where the canisters share duty with time scheduled switching.

Standard Features of the Dual Callisto Dry Scrubbing System:

- Employs Callisto Scrubbing Cartridges for guaranteed sub TLV emissions
- Color Touch Display
- Integrated cabinet and exhaust gas monitoring system to ensure user safety and verify regulatory compliance
- Interlocks to ensure Callisto is operating within specifications
- Real time permanent exhaust concentration data logging
- Ability to extract pressure, temperature and exhaust gas history to USB thumb drive
- Interlock connections to prevent reactor operation when Callisto is offline or in an error state
- Visual and audible alarms
- Integrated flow management
- Integrated temperature monitoring
- Integrated vacuum pump
- Native MODBUS slave (Profibus and Devicenet optional)
- Integrated canister leak check function
- Integrated air oxidation capability
- Ethernet remote access
- Integrated PID pressure control to ensure constant inlet pressure
- Dual canisters with automated switchover to ensure continuous uptime and abatement
- Made in the United States of America

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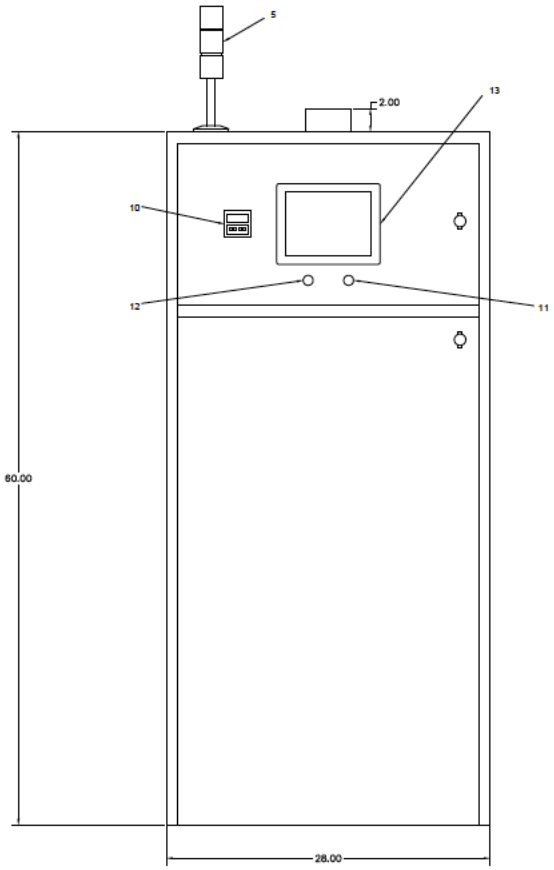
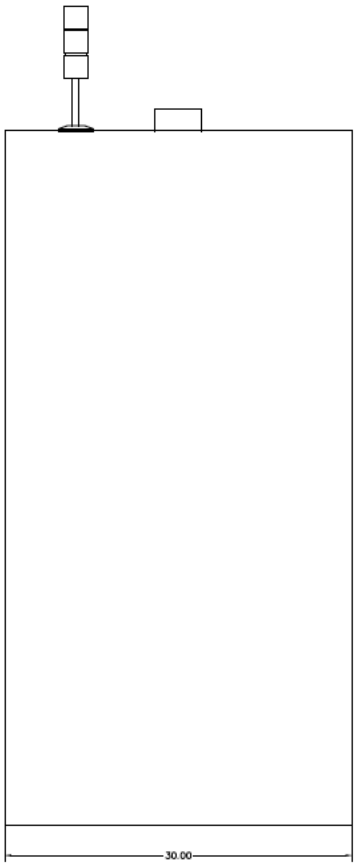
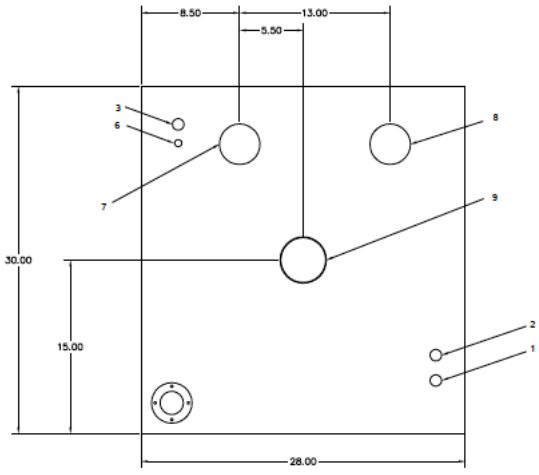
Callisto Dry Scrubber

Single Callisto Dimensions







ITEM	SERVICE	CONNECTION	FLOW	PRESSURE	REMARK
1	POWER	7/8" THROUGH HOLE			120 VAC, 1 PHASE, 7 A
2	CUSTOMER ALARM	7/8" THROUGH HOLE			
3	N2 PORT, PURGE	1/2" SWAGELOK, SS	10 CFM	60-80 PSI	3 CFM continuous. 7 CFM for emergency purge.
4					
5	LIGHT TOWER/STATUS INDICATOR				
6	CDA PORT (AIR OX)	1/4" SWAGELOK, SS	25 LPM	60-80 PSI	
7	GAS INLET	KF40, SS	180 LPM (NOM)		LOCATED 1/2" BELOW TOP PANEL
8	GAS EXHAUST	KF40, SS	180 LPM (NOM)		LOCATED 1/2" BELOW TOP PANEL
9	CABINET DRAW	4" O.D. X 2" HIGH	140 CFM	1/2" W.C.	
10	PID CONTROLLER				
11	EMO				
12	POWER ON INDICATOR				
13	LCD DISPLAY				

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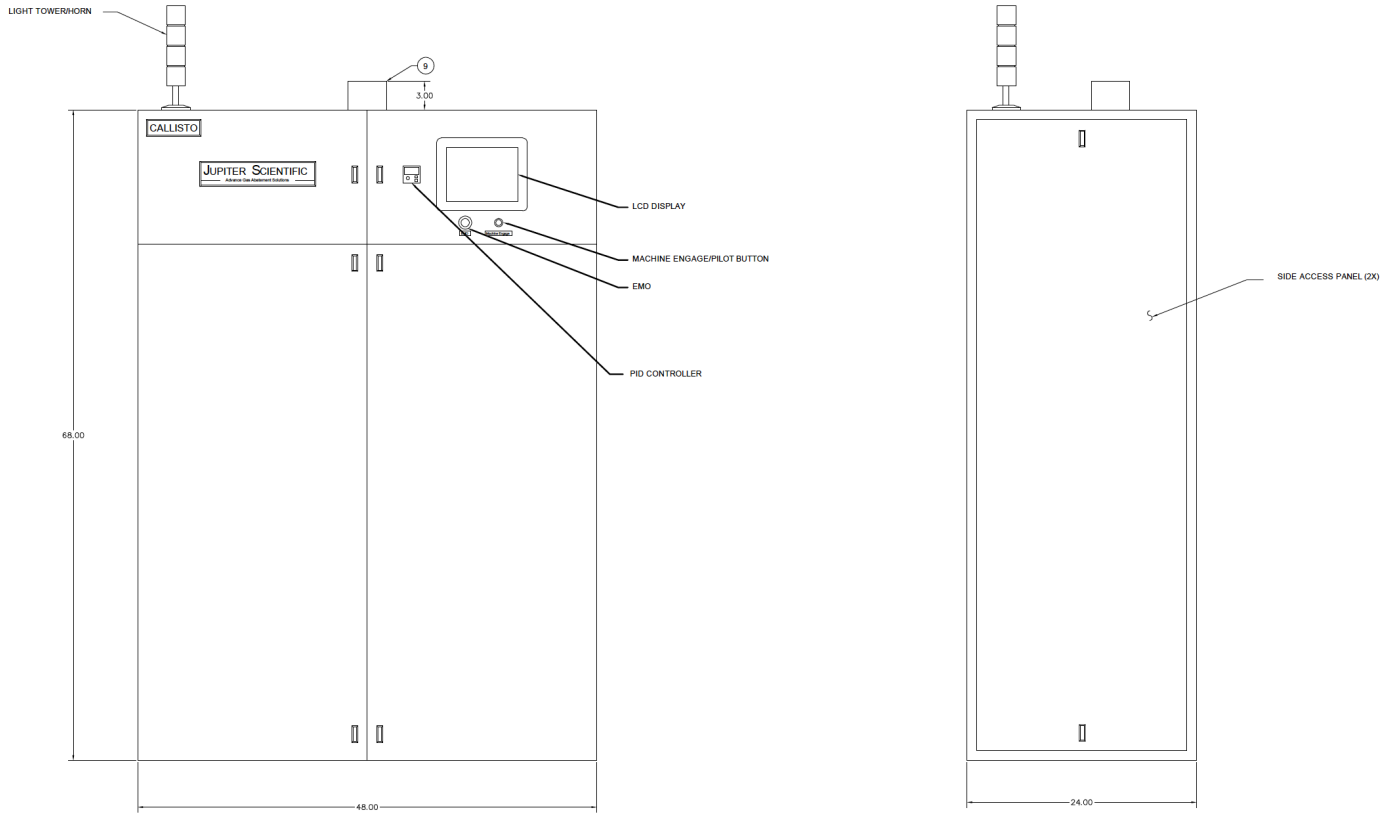
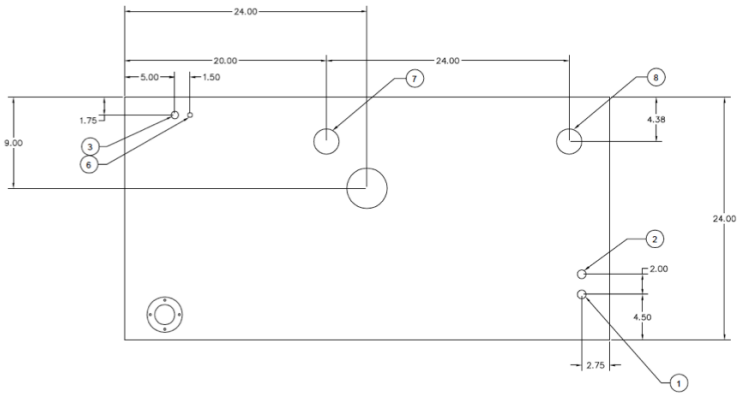
Callisto Dry Scrubber

Dual Callisto Dimensions





ITEM	SERVICE	CONNECTION	FLOW	PRESSURE	REMARK
1	POWER	7/8" THROUGH HOLE			110/220 VAC, 5 A
2	CUSTOMER ALARM	7/8" THROUGH HOLE			
3	N2	1/2" SWAGELOK, SS	10 CFM	60-80 PSI	3 CFM continuous. 7 CFM for emergency purge.
4					
5					
6	CDA AIR OX	1/4" SWAGELOK, SS	25 LPM	60-80 PSI	
7	GAS INLET	KF50, SS	180 LPM (NOM)		LOCATED 1/2" BELOW TOP PANEL
8	GAS EXHAUST	KF50, SS	180 LPM (NOM)		LOCATED 1/2" BELOW TOP PANEL
9	CABINET DRAW	4" O.D. X 3" HIGH	140 CFM	1/2" W.C.	

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Callisto Key Operating Parameters

Parameter	Single Callisto	Dual Callisto
Dimensions	28 in x 30 in x 60 in	48 in x 24 in x 68 in
Weight (without canisters)	280 lbs.	380 lbs.
Throughput (all gases)	180 LPM (more is possible with pump upgrade)	250 LPM (more is possible with pump upgrade)
Power	120 Volt, 1P, 7 Amp	120 Volt, 1P, 7 Amp
Nitrogen	30-90 LPM	30-90 LPM
CDA	5 LPM (Purge Only)	5 LPM (Purge Only)
Pressure Drop	NA (Active Pumping System)	NA (Active Pumping System)
Communications	Modbus/Ethernet	Modbus/Ethernet
Process Connections	NW 40	NW 50

Note: Inlet and outlet connections can be customized to your facilities

Partial List of Gases Abated By Callisto Scrubbing Canisters (abated to less than ½ OSHA PEL)

ACID GASES and HALOGENS	HYDRIDES	SEMICONDUCTOR & SOLAR	ORGANICS
Bromine	Ammonia	III-V	Methane
Boron Trichloride	Arsine	II-VI	Alcohols
Boron Trifluoride	Diborane	MOCVD	Propane, Butane, other Alkanes
Chlorine	Germane	PECVD	Acetylene
Fluorine	Phosphine	Tungsten Hexafluoride	Metal Organics
Hydrogen Bromide	Hydrogen Selenide	CIGS	Carbon Monoxide
Hydrogen Chloride	Hydrogen Sulfide	NO, NO_2	Halogenated Organics
Hydrogen Cyanide	Silane, Disilane	Nitride Deposition	Aromatics (Benzene, Toluene, Xylene, etc)
Hydrogen Fluoride	Stibine	Metal, Dry, and Poly Etch	Carbonyls
Silicon Tetrachloride	Organo-Silanes		
Silicon Tetrafluoride			
Sulfuric Acid			
Many other gases too numerous to list here			

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