

## Continuous Flow Breathing Air Purifiers

CATALITE<sup>®</sup> CBA SERIES



## **Dedicated to Excellence**

Since 1948, compressed air users around the world have relied on Hankison to provide innovative compressed air treatment solutions for critical applications. Hankison maintains a long standing reputation for manufacturing products that deliver superior performance, time proven reliability and optimal energy savings. Hankison today is the preferred choice for providing clean, dry compressed air for the most challenging industries.

Based in Charlotte, North Carolina, SPX FLOW is a leading global supplier of highly engineered flow components, process equipment and turn-key systems, along with the related aftermarket parts and services, into the food and beverage, power and energy and industrial end markets. SPX FLOW has more than \$2 billion in annual revenues and approximately 8,000 employees with operations in over 35 countries and sales in over 150 countries around the world. To learn more about SPX FLOW, please visit our website at [www.spxflow.com](http://www.spxflow.com).

# Catalite® Breathing Air Purifiers...

## **SAFETY IN THE WORK PLACE**

### **Maintain Health and Safety Requirements**

The CATALITE CBA Series delivers breathing air quality in accordance to international standards.

#### **OSHA:** CFR1910.134

(Occupational Safety & Health Association)

#### **CSA:** Z180.1-13

(Canadian Standards Association)

#### **CGA:** G-7

(Compressed Gas Association)

#### **ANSI:** Z88.2-1080

(American National Standards Institute)

Environmental safety standards mandate the need for a suitable air supply to ensure worker safety. CATALITE CBA Breathing Air Purifiers enable industries meet required standards.

## **PETROCHEMICAL**

The oil and gas industries select CATALITE breathing air purifiers to protect workers from the inhalation of hazardous fumes, gases, and vapors inherent in the manufacturing process.

## **ASBESTOS ABATEMENT**

Asbestos was a commonly used insulation material for old dwellings. CATALITE Breathing Air Purifiers provide suitable breathing air to workers in asbestos abatement applications.



## PAINT SPRAY

Automotive body shops utilize atomized paint to spray vehicles. Workers exposed to airborne paint emissions benefit from CATALITE Breathing Air Purifiers.

## PROTECTIVE COATINGS

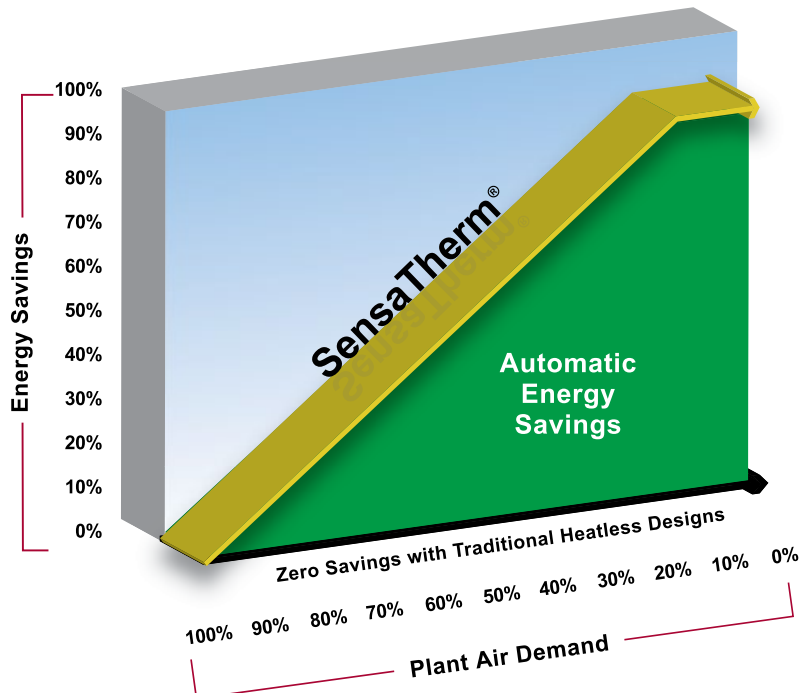
Manufacturers utilize compressed air to apply protective coatings. Airborne compounds will not adversely affect workers when respiratory air is supplied with CATALITE Breathing Air Purifiers.

## CONFINED SPACES

The quality of breathing is in critical in confined space industries. Mining, vats, tanks, boilers, ships' hulls, and grain storage facilities are environments with stale, contaminated air that is unsuitable for breathing.

## OPTIONAL SENSATHERM® ENERGY SAVINGS

The optional SensaTherm energy management system automatically matches purge air requirements to real time load on the dryer. When operating at reduced capacity, the on-line drying tower remains active until the full drying capacity of the desiccant material is utilized. Each tower is precisely controlled to manage drying times to reduce purge air consumption.



# Optimal Performance and Operation...

## SIX STAGE FILTRATION

- Stage 1** General purpose filter removes solid and liquid contaminants down to 1.0 micron
- Stage 2** High efficiency oil removal filter captures liquid aerosols and sub-micronic particles down 0.01 micron
- Stage 3** Pressure-swing regenerative desiccant dryer removes water vapor to ensure the effectiveness of the catalyst bed
- Stage 4** Dried air travels through a catalytic converter reducing CO concentrations by converting CO to CO<sub>2</sub>
- Stage 5** Particulate removal filter collects contaminants 1.0 micron and larger from the purified air stream
- Stage 6** Activated carbon filter removes oil vapor, trace odors and other gases normally absorbable by activated carbon



## For Quality Breathing Air...

### PURIFICATION CAPABILITIES

Excessive contamination of intake air to the compressor will adversely affect performance of the purifier.

CATALITE Breathing Air Purifiers remove moisture, solid particles, oil aerosols and mists, carbon monoxide, and hydrocarbon vapors commonly present in compressed air resulting in air which can be safely used by supplied-air breathing devices such as masks, hoods and helmets.

CONTAMINANTS	MAXIMUM ALLOWABLE CONCENTRATION <sup>1</sup>		PURIFIER OUTLET RATED CONDITIONS
	OSHA <sup>1</sup>	CSA	
<b>Carbon Monoxide (CO)</b>	10	5	95% Conversion <sup>5</sup>
<b>Carbon Dioxide (CO<sub>2</sub>)</b>	1000	600	<sup>2</sup>
<b>Oil (Condensed Hydrocarbons)</b>	5	1	0
<b>Oil Vapor (Gaseous Hydrocarbons)</b>	—	—	<.02 <sup>3</sup>
<b>Odor</b>	Lack of noticeable odor		— <sup>4</sup>

<sup>1</sup> OSHA Standard references CGA (Compressed Gas Association) pamphlet G-7.1, Grade D and is generally consistent with those published by ANSI

<sup>2</sup> CO is converted to CO<sub>2</sub> by the purifier and added to the concentration of CO<sub>2</sub> already present (normal atmospheric air contains 314 PPM of CO<sub>2</sub>) Although some CO<sub>2</sub> is absorbed in the desiccant beds, high concentrations of CO in the system and/or high concentrations of CO<sub>2</sub> at the compressor intake could result in exceeding allowable CO<sub>2</sub> limits

<sup>3</sup> Will remove only those gaseous hydrocarbons normally adsorbed by activated carbon. Outlet concentration is expressed as methane equivalent, Activated carbon will not remove methane

<sup>4</sup> Will remove only those odors normally adsorbed by activated carbon

<sup>5</sup> 95% Conversion example ( 200 PPM @ inlet = 10 PPM @ outlet)

# Features and Options

## FILTRATION & MONITORING

- Pre-filtration removes solids and oils
- After-filters collect remaining particles and adsorb vapor
- CO catalyst converter
- Air sample ports for optional analyzer installation

## MOISTURE INDICATOR

- Visual color change

## PRESSURE GAUGES

- Left / right tower
- Inlet / outlet purifier
- Purge pressure

## STANDARD CONTROLLER

- NEMA 4/4X with critical LED indicators
- Soft on / off switch with two power recovery modes
- Switching failure alarms
- Adjustable service indications
- Tower / valve status LEDs
- Voltage free common alarm contacts
- RS-232 communications port

## OPTIONS

- Nema 7 electrical rating
- Copper, brass or stainless steel instrument tubing and fittings
- SSPC-SP10 sandblast & epoxy paint
- Breathing air analyzers

### Advanced Controls Featuring:

- Vacuum fluorescent text display
- Automatic SensaTherm® energy savings
- Calibration-free temperature sensors
- High inlet temperature & low inlet pressure alarms

# Breathing Air Analyzers

### OSHA maximum concentrations for breathing air:

- 10 PPM of Carbon Monoxide (CO)
- 1,000 PPM of Carbon Dioxide (CO<sub>2</sub>)
- 5 mg/m<sup>3</sup> Oil (Condensed Hydrocarbons)

Breathing air system performance is subject to excessive intake of air contaminants. It is important that breathing air systems are routinely monitored for proper operation. The CATALITE CBA Series Breathing Air Purifier can be monitored using several air analyzing options.

### Carbon Monoxide (CO) Monitor

#### Recommended

- Digital readout of CO concentration
- Visual and audible alarm
- Contacts for remote alarm
- Push-to-test button
- Alarm silence switch
- Simple calibration
- Adjustable high & low alarms with indication



### Analyzer Choices:

#### Additional Option

- Multiple alarm capabilities
  - » CO & oxygen
  - » CO & dew point
  - » CO, oxygen & dew point





## CBA Series Specifications...

MODEL	INLET FLOW <sup>1</sup>		OUTLET FLOW <sup>1</sup>		VOLTAGES	IN/OUT CONNECTIONS	DIMENSIONS						WEIGHT	
	SCFM	NM <sup>3</sup> /H	SCFM	NM <sup>3</sup> /H			H		W		D		LBS	KG
						IN	IN	MM	IN	MM	IN	MM		
<b>CBA 15</b>	18	31	15	26	85-264/1/ 47-63 AC  11.5-28 V DC	1 NPT	49	1244	42	1067	35	889	440	200
<b>CBA 25</b>	30	51	25	42		1 NPT	49	1244	42	1067	35	889	450	204
<b>CBA 35</b>	42	71	35	59		1 NPT	49	1244	42	1067	35	889	455	206
<b>CBA 50</b>	60	102	50	85		1 NPT	64	1615	43	1097	38	962	560	254
<b>CBA 75</b>	90	153	75	127		1 NPT	79	2006	43	1097	35	889	700	318
<b>CBA 95</b>	114	194	95	161		1 NPT	56	1443	50	1270	45	1137	820	372
<b>CBA 135</b>	162	275	135	229		1 NPT	56	1443	53	1356	43	1092	820	372
<b>CBA 205</b>	246	418	205	348		1.5 NPT	75	1905	62	1575	45	1143	1190	540
<b>CBA 305</b>	366	622	305	518		2 NPT	65	1651	66	1674	52	1327	1405	637
<b>CBA 375</b>	450	765	375	637		2 NPT	74	1871	67	1702	52	1330	1560	708
<b>CBA 490</b>	590	1002	490	833		2 NPT	103	2616	55	1397	69	1753	1650	748
<b>CBA 625</b>	750	1274	625	1062		2 NPT	107	2718	62	1575	75	1905	2800	1270
<b>CBA 775</b>	930	1580	775	1317		3 FLG	112	2845	62	1575	83	2108	3275	1486
<b>CBA 940</b>	1130	1920	940	1597		3 FLG	115	2921	66	1676	82	2083	3750	1701

<sup>1</sup> Flow capacity rated at CAGI conditions: 100 psig (7.0 bar) and 100°F (38°C) saturated inlet

## REPLACEMENT FILTER ELEMENTS

MODEL	PREFILTERS		CATALYST	AFTERFILTERS	
	PF	UF		PF	CF
<b>CBA 15</b>	F02-PF-DG1	F02-UF-DG1	CC0	F02-PF-TG1	F02-CF-T
<b>CBA 25</b>	F03-PF-DG1	F03-UF-DG1	CC0	F03-PF-TG1	F03-CF-T
<b>CBA 35</b>	F04-PF-DG1	F04-UF-DG1	CC0	F04-PF-TG1	F04-CF-T
<b>CBA 50</b>	F06-PF-DG1	F06-UF-DG1	CC1	F06-PF-TG1	F06-CF-T
<b>CBA 75</b>	F07-PF-DG1	F07-UF-DG1	CC1	F07-PF-TG1	F07-CF-T
<b>CBA 95</b>	F08-PF-DG1	F08-UF-DG1	CC2	F08-PF-TG1	F08-CF-T
<b>CBA 135</b>	F10-PF-DG1	F10-UF-DG1	CC2	F10-PF-TG1	F10-CF-T
<b>CBA 205</b>	F10-PF-DG1	F10-UF-DG1	CC3	F10-PF-TG1	F10-CF-T
<b>CBA 305</b>	F12-PF-DG1	F12-UF-DG1	CC4	F12-PF-TG1	F12-CF-T
<b>CBA 375</b>	F13-PF-DG1	F13-UF-DG1	CC5	F13-PF-TG1	F13-CF-T
<b>CBA 490</b>	F14-PF-Z2G1	F14-UF-Z2G1	CC6	F14-PF-G1	F14-CF
<b>CBA 625</b>	F14-PF-Z2G1	F14-UF-Z2G1	CC7	F14-PF-G1	F14-CF
<b>CBA 775</b>	F15-PF-Z2G1	F15-UF-Z2G1	CC8	F15-PF-G1	F15-CF
<b>CBA 940</b>	F16-PF-Z2G1	F16-UF-Z2G1	CC9	F16-PF-G1	F16-CF

## CAPACITY CORRECTION FACTORS

### Inlet Pressure

PSIG	BAR	100°F 38°C	105°F 40°C	110°F 43°C	115°F 46°C	120°F 49°C
60	4.2	0.65	0.64	0.62	0.6	0.58
70	4.9	0.74	0.73	0.71	0.69	0.66
80	5.6	0.83	0.81	0.8	0.77	0.74
90	6.3	0.91	0.89	0.87	0.85	0.81
100	7	1	0.98	0.96	0.93	0.89
110	7.7	1.04	1.02	1	0.97	0.93
120	8.4	1.08	1.06	1.04	1	0.96
130	9.1	1.12	1.1	1.08	1.04	1
140	9.8	1.16	1.14	1.11	1.08	1.03
150	10.5	1.2	1.18	1.15	1.12	1.07

## CAPACITY CORRECTION FACTORS

To adjust CATALITE® capacity for conditions other than rated, use the correction factors (multipliers) for inlet air temperature and pressure shown below.

**Example:** What is the capacity of a 205 scfm (348 nm<sup>3</sup>/h) model when the compressed air at the inlet is 130 psig (9 bar) and 110°F (43°C)?

**Answer:** 205 scfm (348 nm<sup>3</sup>/h) (rated flow from Product Specifications Table) x 1.08 (correction factor for inlet air temperature and pressure) = 221 scfm (375 nm<sup>3</sup>/h)



## Global locations

### SPX FLOW USA

#### HANKISON HEADQUARTERS

4647 SW 40th Avenue  
Ocala, Florida 34474-5788 U.S.A.  
P: (724) 745-1555  
F: (724) 745-6040  
E: [hankison.americas@spxflow.com](mailto:hankison.americas@spxflow.com)

### HANKISON RENTAL

#### NORTHEAST

100 Commerce Drive, Suite 40  
Washington, PA 15301  
P: (724) 225-1470  
F: (724) 222-1317  
E: [hankison.rental@spxflow.com](mailto:hankison.rental@spxflow.com)

#### SOUTHWEST

1486 Champion Drive  
Terrell, TX 75160 U.S.A.  
P: (800) 379-3711  
F: (972) 563-9991  
E: [hankison.rental@spxflow.com](mailto:hankison.rental@spxflow.com)

### SPX FLOW

#### CANADA

1415 California Avenue  
Brockville, ON, Canada  
K6V 7H7  
T: (800) 267-3884  
F: (800) 318-0952  
E: [ft.canada@spxflow.com](mailto:ft.canada@spxflow.com)

### SPX FLOW

#### SOUTH AMERICA

Rua Joao Daprat, 231 b  
09600-010-SÃO Bernardo  
Do Campo, SP  
Brazil  
T: +55 (11) 2166-4050  
F: +55 (11) 2166-4070

### SPX FLOW

#### GERMANY

Konrad-Zuse-Str. 25  
D-47445 Moers Germany  
T: (+49) 2841-8190  
F: (+49) 2841-87112  
E: [info@spxdehydration.de](mailto:info@spxdehydration.de)

### SPX FLOW

#### INDIA

SPX India PVT, LTD  
Manufacturing G-72/73  
Riico Industrial Area  
Mansarovar, RAJASTHAN  
Jaipur 302 020  
India  
T: (+91) 141-2396759  
F: (+91) 141-2395048

### SPX FLOW

#### ASIA PACIFIC

5th Floor, Park Center,  
No.1568 Huashan Road,  
Shanghai China  
T: +86 (021) 2208-5840  
F: +86 (021) 2208-5866

### SPX FLOW

#### KOREA

#940-1 Yerim-Ri  
Jeonggwan-Myeon  
Gijang-Gun  
Busan  
Rep. of Korea  
T: +82 (51) 728-5360  
F: +82 (51) 728-5359

### SPX FLOW

4647 SW 40th Avenue  
Ocala, Florida 34474-5788 U.S.A.  
P: (724) 745-1555  
F: (724) 745-6040  
E: [hankison.americas@spxflow.com](mailto:hankison.americas@spxflow.com)  
[www.spxflow.com/hankison](http://www.spxflow.com/hankison)

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