SPXFLOW

# Continuous Flow Breathing Air Purifiers

**CATALITE® CBA SERIES**


Hankison®

**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.**

# 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

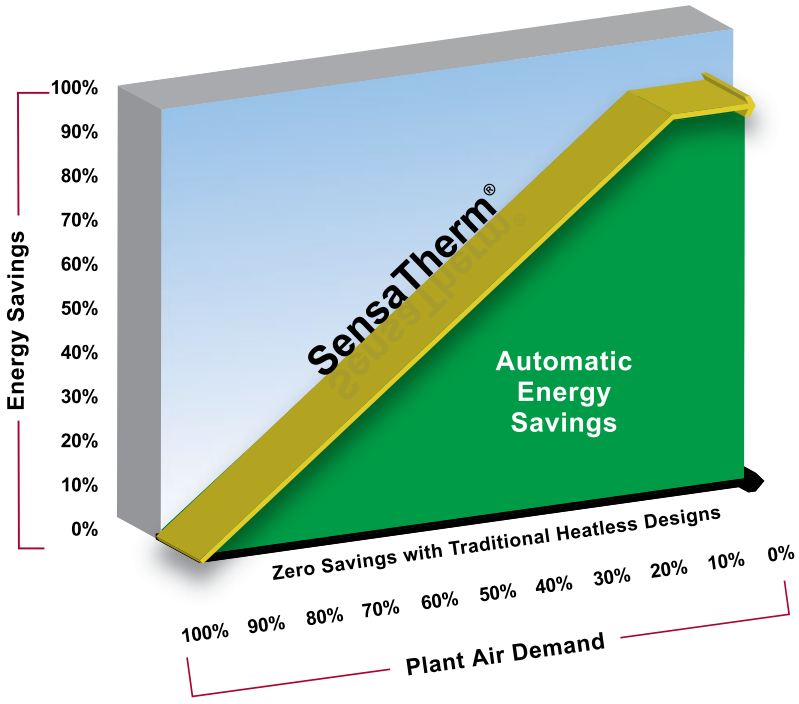
Manufacturers utilize compressed air to apply protective coatings. Airborne compounds will not adversely affect workers when respiratory air is supplied with CATALITE Breathing Air Purifiers.

## 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 $CO_2$

**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 [1] | | PURIFIER OUTLET RATED CONDITIONS |
|---|---|---|---|
| | OSHA [1] | CSA | |
| **Carbon Monoxide** (CO) | 10 | 5 | 95% Conversion [5] |
| **Carbon Dioxide** ($CO_2$) | 1000 | 600 | [2] |
| **Oil** (Condensed Hydrocarbons) | 5 | 1 | 0 |
| **Oil Vapor** (Gaseous Hydrocarbons) | — | — | <.02 [3] |
| **Odor** | Lack of noticeable odor | | — [4] |

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

[2] CO is converted to $CO_2$ by the purifier and added to the concentration of $CO_2$ already present (normal atmospheric air contains 314 PPM of $CO_2$ ) Although some $CO_2$ is absorbed in the desiccant beds, high concentrations of CO in the system and/or high concentrations of $CO_2$ at the compressor intake could result in exceeding allowable $CO_2$ limits

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

[4] Will remove only those odors normally adsorbed by activated carbon

[5] 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 (CO2)
- 5 mg/$m^3$ 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[1] | | OUTLET FLOW[1] | | VOLTAGES | IN/OUT CONNECTIONS | DIMENSIONS | | | | | | WEIGHT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | H | | W | | D | | | |
| | SCFM | NM³/H | SCFM | NM³/H | V/PH/HZ | IN | IN | MM | IN | MM | IN | MM | LBS | KG |
| **CBA 15** | 18 | 31 | 15 | 26 | 85-264/1/47-63 AC<br>11.5-28 V DC | 1 NPT | 49 | 1244 | 42 | 1067 | 35 | 889 | 440 | 200 |
| **CBA 25** | 30 | 51 | 25 | 42 | | 1 NPT | 49 | 1244 | 42 | 1067 | 35 | 889 | 450 | 204 |
| **CBA 35** | 42 | 71 | 35 | 59 | | 1 NPT | 49 | 1244 | 42 | 1067 | 35 | 889 | 455 | 206 |
| **CBA 50** | 60 | 102 | 50 | 85 | | 1 NPT | 64 | 1615 | 43 | 1097 | 38 | 962 | 560 | 254 |
| **CBA 75** | 90 | 153 | 75 | 127 | | 1 NPT | 79 | 2006 | 43 | 1097 | 35 | 889 | 700 | 318 |
| **CBA 95** | 114 | 194 | 95 | 161 | | 1 NPT | 56 | 1443 | 50 | 1270 | 45 | 1137 | 820 | 372 |
| **CBA 135** | 162 | 275 | 135 | 229 | | 1 NPT | 56 | 1443 | 53 | 1356 | 43 | 1092 | 820 | 372 |
| **CBA 205** | 246 | 418 | 205 | 348 | | 1.5 NPT | 75 | 1905 | 62 | 1575 | 45 | 1143 | 1190 | 540 |
| **CBA 305** | 366 | 622 | 305 | 518 | | 2 NPT | 65 | 1651 | 66 | 1674 | 52 | 1327 | 1405 | 637 |
| **CBA 375** | 450 | 765 | 375 | 637 | | 2 NPT | 74 | 1871 | 67 | 1702 | 52 | 1330 | 1560 | 708 |
| **CBA 490** | 590 | 1002 | 490 | 833 | | 2 NPT | 103 | 2616 | 55 | 1397 | 69 | 1753 | 1650 | 748 |
| **CBA 625** | 750 | 1274 | 625 | 1062 | | 2 NPT | 107 | 2718 | 62 | 1575 | 75 | 1905 | 2800 | 1270 |
| **CBA 775** | 930 | 1580 | 775 | 1317 | | 3 FLG | 112 | 2845 | 62 | 1575 | 83 | 2108 | 3275 | 1486 |
| **CBA 940** | 1130 | 1920 | 940 | 1597 | | 3 FLG | 115 | 2921 | 66 | 1676 | 82 | 2083 | 3750 | 1701 |

[1] 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 | CARTRIDGE | PF | CF |
| **CBA 15** | F02-PF-DG1 | F02-UF-DG1 | CC0 | F02-PF-TG1 | F02-CF-T |
| **CBA 25** | F03-PF-DG1 | F03-UF-DG1 | CC0 | F03-PF-TG1 | F03-CF-T |
| **CBA 35** | F04-PF-DG1 | F04-UF-DG1 | CC0 | F04-PF-TG1 | F04-CF-T |
| **CBA 50** | F06-PF-DG1 | F06-UF-DG1 | CC1 | F06-PF-TG1 | F06-CF-T |
| **CBA 75** | F07-PF-DG1 | F07-UF-DG1 | CC1 | F07-PF-TG1 | F07-CF-T |
| **CBA 95** | F08-PF-DG1 | F08-UF-DG1 | CC2 | F08-PF-TG1 | F08-CF-T |
| **CBA 135** | F10-PF-DG1 | F10-UF-DG1 | CC2 | F10-PF-TG1 | F10-CF-T |
| **CBA 205** | F10-PF-DG1 | F10-UF-DG1 | CC3 | F10-PF-TG1 | F10-CF-T |
| **CBA 305** | F12-PF-DG1 | F12-UF-DG1 | CC4 | F12-PF-TG1 | F12-CF-T |
| **CBA 375** | F13-PF-DG1 | F13-UF-DG1 | CC5 | F13-PF-TG1 | F13-CF-T |
| **CBA 490** | F14-PF-Z2G1 | F14-UF-Z2G1 | CC6 | F14-PF-G1 | F14-CF |
| **CBA 625** | F14-PF-Z2G1 | F14-UF-Z2G1 | CC7 | F14-PF-G1 | F14-CF |
| **CBA 775** | F15-PF-Z2G1 | F15-UF-Z2G1 | CC8 | F15-PF-G1 | F15-CF |
| **CBA 940** | 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 $nm^3/h$) model when the compressed air at the inlet is 130 psig (9 bar) and 110°F (43°C)?

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

SPXFLOW

# 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

**HANKISON RENTAL**

**NORTHEAST**

100 Commerce Drive, Suite 40
Washington, PA 15301
P: (724) 225-1470
F: (724) 222-1317
E: 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

**SPX FLOW**

**CANADA**

1415 California Avenue
Brockville, ON, Canada
k6v 7h7
T: (800) 267-3884
F: (800) 318-0952
E: ft.canada@spxflow.com

**SPX FLOW**

**SOUTH AMERICA**

Rua Joao Daprat, 231 b
09600-010-SÃ0 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

**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
www.spxflow.com/hankison

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