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BIKAI

# Product

PROFESSIONAL GAS SENSOR SUPPLIER

BIKAI TECHNOLOGY CO., LTD.

# COMPANY PROFILE

BIKAI TECHNOLOGY CO., LTD. is dedicated to the research, development, and manufacturing of Gas Sensors, including Electrochemical sensors and PID sensors, as well as related Analytical Light Sources.

BIKAI's products are trusted across pharmaceuticals, chemicals, environmental protection, semiconductors, electronics, industrial safety, and other critical sectors. BIKAI delivers accuracy, stability, and reliability, along with attentive, comprehensive technical support to partners worldwide.

Professional Focused

BIKAI

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Electrochemical Oxygen ($O_2$) Gas Sensor O2-BK-25 % 04/05
This product is used for Oxygen gas concentration detection, with fast response and recovery, good stability, and a low probability of leakage.


Electrochemical Hydrogen Sulfide ($H_2S$) Gas Sensor H2S-BK-100 06/07
This product is used for Hydrogen Sulfide gas concentration detection, with fast response and recovery, and excellent resistance to carbon monoxide interference.


Electrochemical Ammonia ($NH_3$) Gas Sensor NH3-BK-100 08/09
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This product is used for spectral analysis and online monitoring, with a wide spectrum of 185-1100 nm, long lifespan, and multiple power supply and output modes.





# PID SENSOR

## Photoionization Detector (PID) Sensor (Customization or OEM services available)

The BK series Photoionization Detector (PID) sensors, independently developed and manufactured by BIKAI, are plug-and-play, easy to operate, and widely used in environmental monitoring, industrial hygiene, safety monitoring, indoor air quality monitoring, soil contamination monitoring, and other fields. The BK series sensors feature long lifespan, compact size, lightweight design, high accuracy, reasonable range setting, high consistency, strong adaptability, and interference resistance capabilities. BIKAI can provide product matching for instrument and equipment manufacturers, as well as offer new product design and development services.


Sensor for detecting VOCs (volatile organic compounds) in gas

**Spare parts:**

**Features:**

- High sensitivity to VOCs in gases
- Low power consumption
- Long service life
- Compact size
- Wide range of applications
- Moisture resistant and pollution-proof

**Applications:**

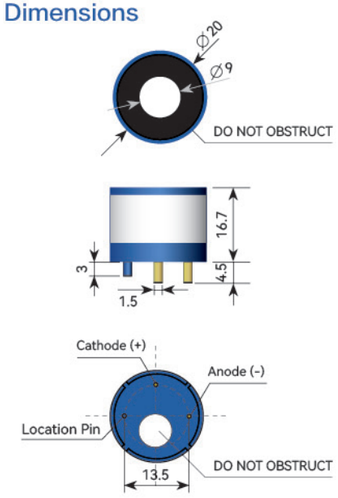
- Industrial hygiene and safety monitoring
- Soil pollution detection
- Hazardous chemical detection
- Gas detection in confined spaces
- Medical gas detection
- Low concentration leak detection

| Model | Measurement Range | Minimum detection limit | Response time (free diffusion) |
|---|---|---|---|
| PID-00002 | 0 ~ 2 ppm | 0.5 ppb | ⩽ 4 s |
| PID-00010 | 0 ~ 10 ppm | 1 ppb | ⩽ 4 s |
| PID-00020 | 0 ~ 20 ppm | 2 ppb | ⩽ 2 s |
| PID-00060 | 0 ~ 60 ppm | 5 ppb | ⩽ 2 s |
| PID-00100 | 0 ~ 100 ppm | 10 ppb | ⩽ 2 s |
| PID-00200 | 0 ~ 200 ppm | 20 ppb | ⩽ 2 s |
| PID-00500 | 0 ~ 500 ppm | 50 ppb | ⩽ 2 s |
| PID-01000 | 0 ~ 1000 ppm | 100 ppb | ⩽ 2 s |
| PID-02000 | 0 ~ 2000 ppm | 200 ppb | ⩽ 2 s |
| PID-06000 | 0 ~ 6000 ppm | 500 ppb | ⩽ 2 s |
| PID-10000 | 0 ~ 10000 ppm | 1000 ppb | ⩽ 2 s |

| Model | BK Series |
|---|---|
| Detection principle | Photoionization |
| Package | Standard A package |
| Operating voltage | DC 3 V ~ 5 V |
| Operating current | 24 mA ~ 36 mA |
| Power consumption | 80 mW ~ 200 mW |
| Output signal range | 100 mV ~ 3.3 V linearity |
| Weight | 8 g |
| Life | UV lamp life is 10000 hours |
| Warranty period | 1 year |
| Detection gas | Ionization energy ⩽ 10.6 eV |
| Optimal environment | Room temperature, dry and dust-free environment |
| Working temperature | - 20 ℃ ~ 60 ℃ |
| Relative humidity range | 0 ~ 90 % RH ( non-condensing ) |
| Humidity inhibition effect | < 15 % @ 90 % RH |

# Electrochemical Oxygen ($O_2$) Gas Sensor O2-BK-25 %
**(Customization or OEM services available)**


## Dimensions




Note: All dimensions are in millimeters (mm).
Unless otherwise specified, the dimensional tolerance is ±0.15 mm.

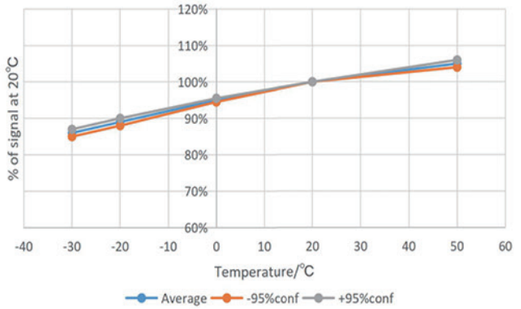
| Measurement | |
|---|---|
| Operating Principle | Electrochemical |
| Measurement Range | 0 ~ 25 % vol $O_2$ |
| Maximum Overload | 30 % vol $O_2$ |
| Output Signal* | 80 ~ 120 μA in air |
| Response Time (T90)* | < 15 s |
| Zero Current (Offset)* | < 0.2 % vol $O_2$ |
| Linearity | Linear within the range |
| **Electrical** | |
| Recommended Load Resistor | 100 Ω |
| **Mechanical** | |
| Housing Material | ABS |
| Weight | 14.9 ± 0.2 g |
| Orientation Sensitivity | < 0.2 % vol $O_2$ |
| **Environmental** | |
| Operating Temperature Range | −20 ℃ ~ 50 ℃ |
| Recommended Storage Temp | 0 ℃ ~ 20 ℃ |
| Operating Pressure Range | 1 atm ± 10% |
| Relative Humidity Range | (at 0 ℃ ~ 20 ℃ ) |
| Continuous | 15 ~ 90 % RH non-condensing |
| Short Term | 0 ~ 99 % RH non-condensing |
| **Lifetime** | |
| Long Term Output Drift* | < 5 % |
| Expected Operating Life | 2 years in air |
| Storage Life | 6 months in original packaging |
| Warranty | 24 months from date of dispatch |

* Specifications are based on conditions at 20℃, 50 % RH, and 1013 mbar, using BIKAI Technology recommended circuitry. Performance characteristics outline the performance of sensors supplied within the first three months. Output signal can drift below the lower limit over time.



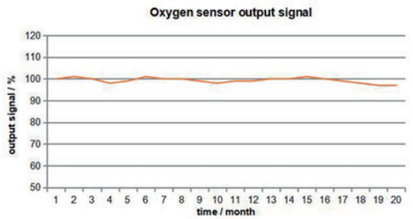


## Temperature response




## Life Test

The oxygen output remains essentially stable until the lead anode is consumed to the point where it becomes non-conductive. Once non-conductivity occurs, the output signal will disappear immediately. Based on historical field-use data, this condition typically develops gradually after extended operation.




Note: The data shown above does not form part of the product specification and is supplied for guidance only.

## Cross Sensitivity Data

Toxic gases at TLV levels will have no cross-sensitivity effect on our Oxygen sensors. At very high levels (i.e. percent levels), highly oxidizing gases (e.g. ozone, chlorine) will interfere to the extent of their oxygen equivalent, but most other commonly occurring gases will have no effect.

## Acid Gases

IMPORTANT NOTE: Acid gases such as CO2 and SO2 will be absorbed by the electrolyte and tend to increase the flux of oxygen to the electrode. This gives an enhanced oxygen signal of approximately 0.3 % of signal per 1 % CO2. Oxygen sensors are not suitable for continuous operation in concentrations of CO2 above 25 %.

## Precautions for Use

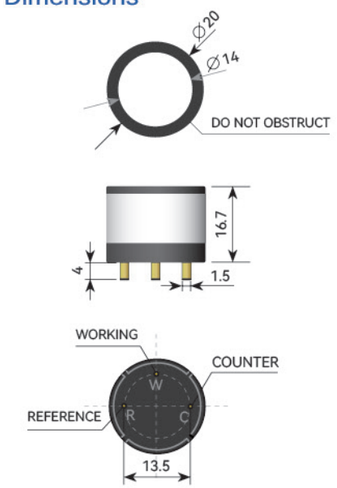
- Avoid exposure: During storage, installation, and operation, avoid exposing the sensor to high concentrations of solvent vapors. Do not blow organic solvents, paint, chemical reagents, oils, or high-concentration gases directly onto the sensor.
- Ensure ventilation: Do not block the air inlet. Do not use adhesive bonding materials such as glue or sealants on, above, or around the sensor.
- Correct installation: Connection should be made via PCB sockets only. Direct soldering or bending of the pins is prohibited. When using sensors with printed circuit boards (PCBs), degreasing agents should be used before the sensor is fitted.
- Prevent mechanical damage: Avoid compression, dropping, strong vibrations, or physical impacts.
- Visual inspection: If the housing is damaged, deformed, or the seal is compromised, discontinue use immediately.
- No disassembly: Do not disassemble the sensor to prevent electrolyte leakage or internal contamination.
- Recovery and calibration: After the sensor is exposed to high concentration gas for long periods, the output signal may require time to recover to normal operation. It is recommended to allow the sensor to stabilize and perform calibration before reuse.
- Periodic calibration: Under normal operating conditions, it is recommended to perform a standard calibration every three months. Under harsh operating conditions, shorten the interval to once per month.

## Safety Note

- This sensor is designed to be used in safety critical applications. To ensure proper operation of the sensor and/or instrument in which it is used, it is a requirement that the function of the device is confirmed by exposure to target gas (bump check) before each use of the sensor and/or instrument. Failure to carry out such tests may endanger personnel and property.

# Electrochemical Hydrogen Sulfide ($H_2S$) Gas Sensor H2S-BK-100
**(Customization or OEM services available)**


## Dimensions



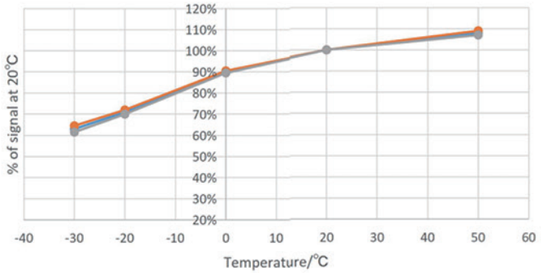

Note: All dimensions are in millimeters (mm). Unless otherwise specified, the dimensional tolerance is ±0.15 mm.

| Measurement | |
|---|---|
| Operating Principle | Three-electrode electrochemical |
| Measurement Range | 0 ~ 100 ppm |
| Maximum Overload | 200 ppm |
| Resolution | 0.1 ppm |
| Filter | None |
| Sensitivity* | 0.45 ± 0.15 μA/ppm |
| Response Time (T90)* | ≤ 60 s |
| Baseline Offset (clean air)* | −0.5 ppm ~ 0.5 ppm |
| Zero Shift (−30℃ to +50℃ )* | < 0.5 ppm |
| Repeatability | < 3 % |
| Linearity | ± 6 %FS |
| **Electrical** | |
| Recommended Load Resistor | 33 Ω |
| Bias Voltage | Not required |
| **Mechanical** | |
| Housing Material | ABS |
| Weight | 5.7 ± 0.2 g |
| Orientation | Any |
| **Environmental** | |
| Operating Temperature Range | −30℃ ~ 50 ℃ |
| Operating Pressure Range | 1 atm ± 10 % |
| Operating Humidity Range | 15 ~ 90 % RH non-condensing |
| **Lifetime** | |
| Long Term Output Drift | < 2 % signal drift / month |
| Recommended Storage Temperature | 0 ℃ ~ 20 ℃ |
| Expected Operating Life | 2 years in air |
| Storage Life | 6 months in original packaging |
| Warranty | 12 months from date of dispatch |

* Specifications are based on conditions at 20℃, 50 % RH, and 1013 mbar, using BIKAI Technology recommended circuitry. Performance characteristics outline the performance of sensors supplied within the first three months. Output signal can drift below the lower limit over time.

## Temperature response


*Note: The data shown above does not form part of the product specification and is supplied for guidance only.




## Cross Sensitivity

| GAS | Concentration Used (ppm) | H2S-BK-100 (ppm $H_2S$) |
|---|---|---|
| Ammonia ($NH_3$) | 50 | < 0.3 |
| Carbon Monoxide (CO) | 100 | < 2 |
| Nitrogen Dioxide ($NO_2$) | 5 | < 0.5 |
| Carbon Dioxide ($CO_2$) | 1000 | 0 |
| Sulphur Dioxide ($SO_2$) | 20 | 0 |

- Whilst BIKAI sensors are designed to be highly specific to the gas they are intended to measure, they will still respond to some degree to various other gases. The table below is not exclusive and other gases not included in the table may still cause a sensor to react.
- Note: The cross sensitivity data shown below does not form part of the product specification and is supplied for guidance only. Values quoted are based on tests conducted on a small number of sensors and any batch may show significant variation. For the most accurate measurements, an instrument should be calibrated using the gas under investigation.

## Precautions for Use

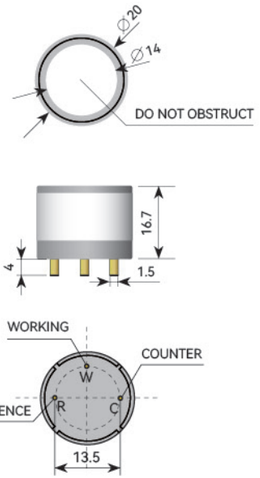
- Avoid exposure: During storage, installation, and operation, avoid exposing the sensor to high concentrations of solvent vapors. Do not blow organic solvents, paint, chemical reagents, oils, or high-concentration gases directly onto the sensor.
- Ensure ventilation: Do not block the air inlet. Do not use adhesive bonding materials such as glue or sealants on, above, or around the sensor.
- Correct installation: Connection should be made via PCB sockets only. Direct soldering or bending of the pins is prohibited. When using sensors with printed circuit boards (PCBs), degreasing agents should be used before the sensor is fitted.
- Prevent mechanical damage: Avoid compression, dropping, strong vibrations, or physical impacts.
- Visual inspection: If the housing is damaged, deformed, or the seal is compromised, discontinue use immediately.
- No disassembly: Do not disassemble the sensor to prevent electrolyte leakage or internal contamination.
- Recovery and calibration: After the sensor is exposed to high concentration gas for long periods, the output signal may require time to recover to normal operation. It is recommended to allow the sensor to stabilize and perform calibration before reuse.
- Periodic calibration: Under normal operating conditions, it is recommended to perform a standard calibration every three months. Under harsh operating conditions, shorten the interval to once per month.

## Safety Note

- This sensor is designed to be used in safety critical applications. To ensure proper operation of the sensor and/or instrument in which it is used, it is a requirement that the function of the device is confirmed by exposure to target gas (bump check) before each use of the sensor and/or instrument. Failure to carry out such tests may endanger personnel and property.

# Electrochemical Ammonia ($NH_3$) Gas Sensor NH3-BK-100
**(Customization or OEM services available)**


## Dimensions




Note: All dimensions are in millimeters (mm). Unless otherwise specified, the dimensional tolerance is ±0.15 mm.

| Measurement | |
|---|---|
| Operating Principle | Three-electrode electrochemical |
| Measurement Range | 0 ~ 100 ppm |
| Maximum Overload | 200 ppm |
| Resolution | 0.5 ppm |
| Filter | None |
| Sensitivity* | 0.12 ± 0.04 μA/ppm |
| Response Time (T90)* | ≤ 90 s |
| Baseline Offset (clean air)* | −0.5 ppm ~ 0.5 ppm |
| Zero Shift (−30 ℃ to +50 ℃ )* | < 3 ppm |
| Repeatability | < 5 % |
| Linearity | ± 6 %FS |
| **Electrical** | |
| Recommended Load Resistor | 33 Ω |
| Bias Voltage | Not required |
| **Mechanical** | |
| Housing Material | ABS |
| Weight | 5.7 ± 0.2 g |
| Orientation | Any |
| **Environmental** | |
| Operating Temperature Range | −30 ℃ ~ 50 ℃ |
| Operating Pressure Range | 1 atm ± 10 % |
| Operating Humidity Range | 15 ~ 90 % RH non-condensing |
| **Lifetime** | |
| Long Term Output Drift | < 2% signal drift / month |
| Recommended Storage Temperature | 0 ℃ ~ 20 ℃ |
| Expected Operating Life | 2 years in air |
| Storage Life | 6 months in original packaging |
| Warranty | 12 months from date of dispatch |

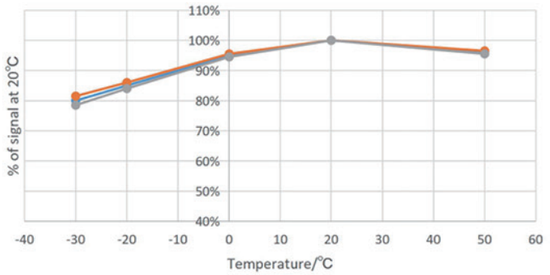
* Specifications are based on conditions at 20℃, 50 % RH, and 1013 mbar, using BIKAI Technology recommended circuitry. Performance characteristics outline the performance of sensors supplied within the first three months. Output signal can drift below the lower limit over time.





## Temperature response


*Note: The data shown above does not form part of the product specification and is supplied for guidance only.




## Cross Sensitivity

| GAS | Concentration Used (ppm) | NH3-BK-100 (ppm $NH_3$) |
|---|---|---|
| Carbon Monoxide (CO) | 300 | 0 |
| Hydrogen Sulfide ($H_2S$) | 25 | 30 |
| Sulphur Dioxide ($SO_2$) | 5 | 0 |
| Nitric Oxide (NO) | 35 | 0 |

- Whilst BIKAI sensors are designed to be highly specific to the gas they are intended to measure, they will still respond to some degree to various other gases. The table below is not exclusive and other gases not included in the table may still cause a sensor to react.
- Note: The cross sensitivity data shown below does not form part of the product specification and is supplied for guidance only. Values quoted are based on tests conducted on a small number of sensors and any batch may show significant variation. For the most accurate measurements, an instrument should be calibrated using the gas under investigation.

## Precautions for Use

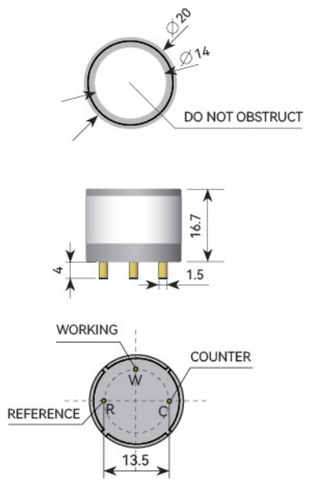
- Avoid exposure: During storage, installation, and operation, avoid exposing the sensor to high concentrations of solvent vapors. Do not blow organic solvents, paint, chemical reagents, oils, or high-concentration gases directly onto the sensor.
- Ensure ventilation: Do not block the air inlet. Do not use adhesive bonding materials such as glue or sealants on, above, or around the sensor.
- Correct installation: Connection should be made via PCB sockets only. Direct soldering or bending of the pins is prohibited. When using sensors with printed circuit boards (PCBs), degreasing agents should be used before the sensor is fitted.
- Prevent mechanical damage: Avoid compression, dropping, strong vibrations, or physical impacts.
- Visual inspection: If the housing is damaged, deformed, or the seal is compromised, discontinue use immediately.
- No disassembly: Do not disassemble the sensor to prevent electrolyte leakage or internal contamination.
- Recovery and calibration: After the sensor is exposed to high concentration gas for long periods, the output signal may require time to recover to normal operation. It is recommended to allow the sensor to stabilize and perform calibration before reuse.
- Periodic calibration: Under normal operating conditions, it is recommended to perform a standard calibration every three months. Under harsh operating conditions, shorten the interval to once per month.

## Safety Note

- This sensor is designed to be used in safety critical applications. To ensure proper operation of the sensor and/or instrument in which it is used, it is a requirement that the function of the device is confirmed by exposure to target gas (bump check) before each use of the sensor and/or instrument. Failure to carry out such tests may endanger personnel and property.

# Electrochemical Sulfur Dioxide ($SO_2$) Gas Sensor SO2-BK-20
**(Customization or OEM services available)**


## Dimensions



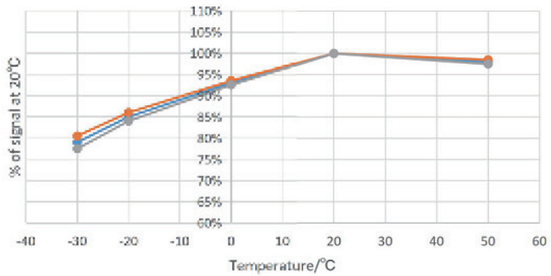

Note: All dimensions are in millimeters (mm). Unless otherwise specified, the dimensional tolerance is ±0.15 mm.

| Measurement | |
|---|---|
| Operating Principle | Three-electrode electrochemical |
| Measurement Range | 0 ~ 20 ppm |
| Maximum Overload | 50 ppm |
| Resolution | 0.1 ppm |
| Filter | Yes |
| Sensitivity* | 0.3 ± 0.1 μA/ppm |
| Response Time (T90)* | ≤ 60 s |
| Baseline Offset (clean air)* | −0.5 ppm ~ 0.5 ppm |
| Zero Shift (−30 ℃ to +50 ℃ )* | < 0.5 ppm |
| Repeatability | < 3 % |
| Linearity | ± 6 %FS |
| **Electrical** | |
| Recommended Load Resistor | 33 Ω |
| Bias Voltage | Not required |
| **Mechanical** | |
| Housing Material | ABS |
| Weight | 5.7 ± 0.2 g |
| Orientation | Any |
| **Environmental** | |
| Operating Temperature Range | −30 ℃ ~ 50 ℃ |
| Operating Pressure Range | 1 atm ± 10 % |
| Operating Humidity Range | 15 ~ 90 % RH non-condensing |
| **Lifetime** | |
| Long Term Output Drift | < 2 % signal drift / month |
| Recommended Storage Temperature | 0 ℃ ~ 20 ℃ |
| Expected Operating Life | 2 years in air |
| Storage Life | 6 months in original packaging |
| Warranty | 12 months from date of dispatch |

* Specifications are based on conditions at 20℃, 50 % RH, and 1013 mbar, using BIKAI Technology recommended circuitry. Performance characteristics outline the performance of sensors supplied within the first three months. Output signal can drift below the lower limit over time.

## Temperature response


*Note: The data shown above does not form part of the product specification and is supplied for guidance only.




## Cross Sensitivity

| GAS | Concentration Used (ppm) | SO2-BK-20 (ppm $SO_2$) |
|---|---|---|
| Ammonia ($NH_3$) | 100 | 0 |
| Hydrogen Sulfide ($H_2S$) | 10 | 0 |
| Nitrogen Dioxide ($NO_2$) | 10 | −15 |
| Hydrogen ($H_2$) | 100 | 0 |

- Whilst BIKAI sensors are designed to be highly specific to the gas they are intended to measure, they will still respond to some degree to various other gases. The table below is not exclusive and other gases not included in the table may still cause a sensor to react.
- Note: The cross sensitivity data shown below does not form part of the product specification and is supplied for guidance only. Values quoted are based on tests conducted on a small number of sensors and any batch may show significant variation. For the most accurate measurements, an instrument should be calibrated using the gas under investigation.

## Precautions for Use

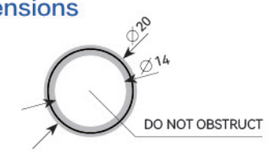
- Avoid exposure: During storage, installation, and operation, avoid exposing the sensor to high concentrations of solvent vapors. Do not blow organic solvents, paint, chemical reagents, oils, or high-concentration gases directly onto the sensor.
- Ensure ventilation: Do not block the air inlet. Do not use adhesive bonding materials such as glue or sealants on, above, or around the sensor.
- Correct installation: Connection should be made via PCB sockets only. Direct soldering or bending of the pins is prohibited. When using sensors with printed circuit boards (PCBs), degreasing agents should be used before the sensor is fitted.
- Prevent mechanical damage: Avoid compression, dropping, strong vibrations, or physical impacts.
- Visual inspection: If the housing is damaged, deformed, or the seal is compromised, discontinue use immediately.
- No disassembly: Do not disassemble the sensor to prevent electrolyte leakage or internal contamination.
- Recovery and calibration: After the sensor is exposed to high concentration gas for long periods, the output signal may require time to recover to normal operation. It is recommended to allow the sensor to stabilize and perform calibration before reuse.
- Periodic calibration: Under normal operating conditions, it is recommended to perform a standard calibration every three months. Under harsh operating conditions, shorten the interval to once per month.

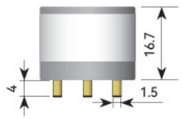
## Safety Note

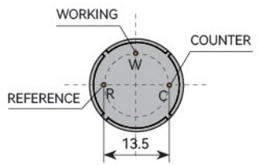
- This sensor is designed to be used in safety critical applications. To ensure proper operation of the sensor and/or instrument in which it is used, it is a requirement that the function of the device is confirmed by exposure to target gas (bump check) before each use of the sensor and/or instrument. Failure to carry out such tests may endanger personnel and property.

# Electrochemical Chlorine ($Cl_2$) Gas Sensor CL2-BK-10
**(Customization or OEM services available)**


## Dimensions




Note: All dimensions are in millimeters (mm).
Unless otherwise specified, the dimensional tolerance is ±0.15 mm.

| Measurement | |
|---|---|
| Operating Principle | Three-electrode electrochemical |
| Measurement Range | 0 ~ 10 ppm |
| Maximum Overload | 100 ppm |
| Resolution | 0.1 ppm |
| Filter | None |
| Sensitivity* | −0.4 ± 0.15 μA/ppm |
| Response Time (T90)* | ≤ 90 s |
| Baseline Offset (clean air)* | − 0.5 ppm ~ 0.5 ppm |
| Zero Shift (−30℃ to +50℃ )* | < 0.5 ppm |
| Repeatability | < 3 % |
| Linearity | ± 6 %FS |
| **Electrical** | |
| Recommended Load Resistor | 33 Ω |
| Bias Voltage | Not required |
| **Mechanical** | |
| Housing Material | ABS |
| Weight | 5.7 ± 0.2 g |
| Orientation | Any |
| **Environmental** | |
| Operating Temperature Range | −30 ℃ ~ 50 ℃ |
| Operating Pressure Range | 1 atm ± 10 % |
| Operating Humidity Range | 15 ~ 90 % RH non-condensing |
| **Lifetime** | |
| Long Term Output Drift | < 2 % signal drift / month |
| Recommended Storage Temperature | 0 ℃ ~ 20 ℃ |
| Expected Operating Life | 2 years in air |
| Storage Life | 6 months in original packaging |
| Warranty | 12 months from date of dispatch |

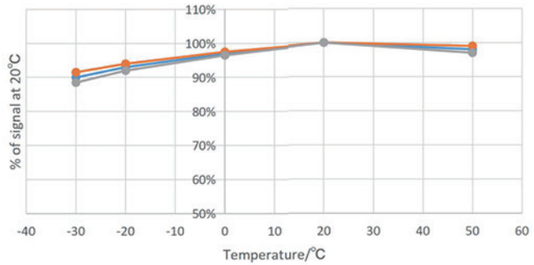
* Specifications are based on conditions at 20℃, 50 % RH, and 1013 mbar, using BIKAI Technology recommended circuitry. Performance characteristics outline the performance of sensors supplied within the first three months. Output signal can drift below the lower limit over time.





## Temperature response


*Note: The data shown above does not form part of the product specification and is supplied for guidance only.




## Cross Sensitivity

| GAS | Concentration Used (ppm) | CL2-BK-10 (ppm $Cl_2$) |
|---|---|---|
| Nitrogen Dioxide ($NO_2$) | 22 | 10 |
| Hydrogen Sulfide ($H_2S$) | 10 | −5 |
| Sulphur Dioxide ($SO_2$) | 10 | 0 |
| Hydrogen ($H_2$) | 100 | 0 |

- Whilst BIKAI sensors are designed to be highly specific to the gas they are intended to measure, they will still respond to some degree to various other gases. The table below is not exclusive and other gases not included in the table may still cause a sensor to react.
- Note: The cross sensitivity data shown below does not form part of the product specification and is supplied for guidance only. Values quoted are based on tests conducted on a small number of sensors and any batch may show significant variation. For the most accurate measurements, an instrument should be calibrated using the gas under investigation.

## Precautions for Use

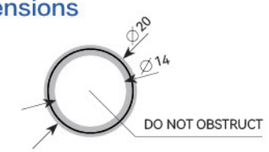
- Avoid exposure: During storage, installation, and operation, avoid exposing the sensor to high concentrations of solvent vapors. Do not blow organic solvents, paint, chemical reagents, oils, or high-concentration gases directly onto the sensor.
- Ensure ventilation: Do not block the air inlet. Do not use adhesive bonding materials such as glue or sealants on, above, or around the sensor.
- Correct installation: Connection should be made via PCB sockets only. Direct soldering or bending of the pins is prohibited. When using sensors with printed circuit boards (PCBs), degreasing agents should be used before the sensor is fitted.
- Prevent mechanical damage: Avoid compression, dropping, strong vibrations, or physical impacts.
- Visual inspection: If the housing is damaged, deformed, or the seal is compromised, discontinue use immediately.
- No disassembly: Do not disassemble the sensor to prevent electrolyte leakage or internal contamination.
- Recovery and calibration: After the sensor is exposed to high concentration gas for long periods, the output signal may require time to recover to normal operation. It is recommended to allow the sensor to stabilize and perform calibration before reuse.
- Periodic calibration: Under normal operating conditions, it is recommended to perform a standard calibration every three months. Under harsh operating conditions, shorten the interval to once per month.

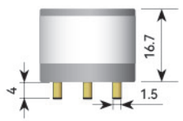
## Safety Note

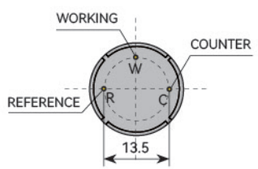
- This sensor is designed to be used in safety critical applications. To ensure proper operation of the sensor and/or instrument in which it is used, it is a requirement that the function of the device is confirmed by exposure to target gas (bump check) before each use of the sensor and/or instrument. Failure to carry out such tests may endanger personnel and property.

# Electrochemical Ethylene Oxide (ETO) Gas Sensor ETO-BK-100
**(Customization or OEM services available)**


## Dimensions




Note: All dimensions are in millimeters (mm).
Unless otherwise specified, the dimensional tolerance is ±0.15 mm.

| Measurement | |
|---|---|
| Operating Principle | Three-electrode electrochemical |
| Measurement Range | 0 ~ 100 ppm |
| Maximum Overload | 200 ppm |
| Resolution | 1 ppm |
| Filter | None |
| Sensitivity* | 0.2 ± 0.12 μA/ppm |
| Response Time (T90)* | ≤ 120 s |
| Baseline Offset (clean air)* | −0.5 ppm ~ 0.5 ppm |
| Zero Shift (−30℃ to +50℃ )* | < 10 ppm |
| Repeatability | < 3 % |
| Linearity | ± 6 %FS |
| **Electrical** | |
| Recommended Load Resistor | 33 Ω |
| Bias Voltage | + 300 mV |
| **Mechanical** | |
| Housing Material | ABS |
| Weight | 5.7 ± 0.2 g |
| Orientation | Any |
| **Environmental** | |
| Operating Temperature Range | −30 ℃ ~ 50 ℃ |
| Operating Pressure Range | 1 atm ± 10 % |
| Operating Humidity Range | 15 ~ 90 % RH non-condensing |
| **Lifetime** | |
| Long Term Output Drift | < 2 % signal drift / month |
| Recommended Storage Temperature | 0 ℃ ~ 20 ℃ |
| Expected Operating Life | 2 years in air |
| Storage Life | 6 months in original packaging |
| Warranty | 12 months from date of dispatch |

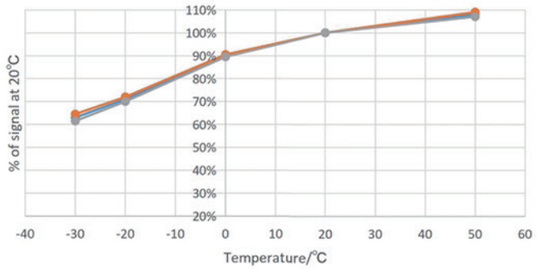
* Specifications are based on conditions at 20℃, 50 % RH, and 1013 mbar, using BIKAI Technology recommended circuitry. Performance characteristics outline the performance of sensors supplied within the first three months. Output signal can drift below the lower limit over time.





## Temperature response


*Note: The data shown above does not form part of the product specification and is supplied for guidance only.




## Cross Sensitivity

| GAS | Concentration Used (ppm) | ETO-BK-100 (ppm ETO) |
|---|---|---|
| Carbon Monoxide (CO) | 30 | 15 |
| Isobutylene ($C_4H_8$) | 50 | 30 |
| Ethylene ($C_2H_4$) | 50 | 40 |
| Ethanol ($C_2H_5OH$) | 100 | 40 |
| Carbon Dioxide ($CO_2$) | 100 | 0 |

- Whilst BIKAI sensors are designed to be highly specific to the gas they are intended to measure, they will still respond to some degree to various other gases. The table below is not exclusive and other gases not included in the table may still cause a sensor to react.
- Note: The cross sensitivity data shown below does not form part of the product specification and is supplied for guidance only. Values quoted are based on tests conducted on a small number of sensors and any batch may show significant variation. For the most accurate measurements, an instrument should be calibrated using the gas under investigation.

## Precautions for Use

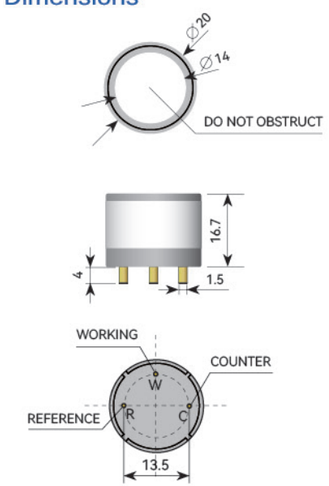
- Avoid exposure: During storage, installation, and operation, avoid exposing the sensor to high concentrations of solvent vapors. Do not blow organic solvents, paint, chemical reagents, oils, or high-concentration gases directly onto the sensor.
- Ensure ventilation: Do not block the air inlet. Do not use adhesive bonding materials such as glue or sealants on, above, or around the sensor.
- Correct installation: Connection should be made via PCB sockets only. Direct soldering or bending of the pins is prohibited. When using sensors with printed circuit boards (PCBs), degreasing agents should be used before the sensor is fitted.
- Prevent mechanical damage: Avoid compression, dropping, strong vibrations, or physical impacts.
- Visual inspection: If the housing is damaged, deformed, or the seal is compromised, discontinue use immediately.
- No disassembly: Do not disassemble the sensor to prevent electrolyte leakage or internal contamination.
- Recovery and calibration: After the sensor is exposed to high concentration gas for long periods, the output signal may require time to recover to normal operation. It is recommended to allow the sensor to stabilize and perform calibration before reuse.
- Periodic calibration: Under normal operating conditions, it is recommended to perform a standard calibration every three months. Under harsh operating conditions, shorten the interval to once per month.

## Safety Note

- This sensor is designed to be used in safety critical applications. To ensure proper operation of the sensor and/or instrument in which it is used, it is a requirement that the function of the device is confirmed by exposure to target gas (bump check) before each use of the sensor and/or instrument. Failure to carry out such tests may endanger personnel and property.

# Electrochemical Hydrogen Chloride (HCL) Gas Sensor HCL-BK-10
**(Customization or OEM services available)**


## Dimensions




Note: All dimensions are in millimeters (mm). Unless otherwise specified, the dimensional tolerance is ±0.15 mm.

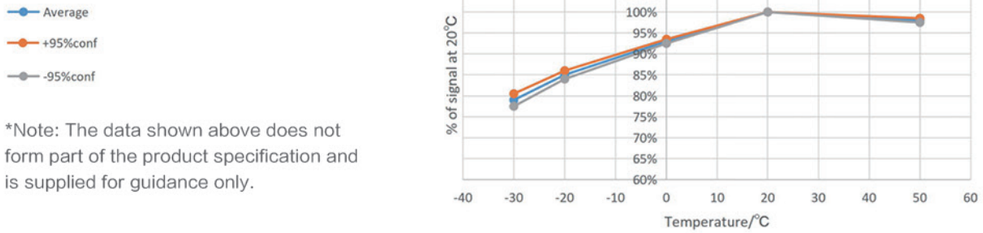
| Measurement | |
|---|---|
| Operating Principle | Three-electrode electrochemical |
| Measurement Range | 0 ~ 10 ppm |
| Maximum Overload | 20 ppm |
| Resolution | 0.1 ppm |
| Filter | None |
| Sensitivity* | 0.15 ± 0.1 μA/ppm |
| Response Time (T90)* | ≤ 60 s |
| Baseline Offset (clean air)* | −0.5 ppm ~ 0.5 ppm |
| Zero Shift (−30℃ to +50℃ )* | < 0.5 ppm |
| Repeatability | < 3 % |
| Linearity | ± 6 %FS |
| **Electrical** | |
| Recommended Load Resistor | 33 Ω |
| Bias Voltage | + 200 mV |
| **Mechanical** | |
| Housing Material | ABS |
| Weight | 5.7 ± 0.2 g |
| Orientation | Any |
| **Environmental** | |
| Operating Temperature Range | −30 ℃ ~ 50 ℃ |
| Operating Pressure Range | 1 atm ± 10 % |
| Operating Humidity Range | 15 ~ 90 % RH non-condensing |
| **Lifetime** | |
| Long Term Output Drift | < 2 % signal drift / month |
| Recommended Storage Temperature | 0 ℃ ~ 20 ℃ |
| Expected Operating Life | 2 years in air |
| Storage Life | 6 months in original packaging |
| Warranty | 12 months from date of dispatch |

* Specifications are based on conditions at 20℃, 50 % RH, and 1013 mbar, using BIKAI Technology recommended circuitry. Performance characteristics outline the performance of sensors supplied within the first three months. Output signal can drift below the lower limit over time.





## Temperature response




*Note: The data shown above does not form part of the product specification and is supplied for guidance only.

## Cross Sensitivity

| GAS | Concentration Used (ppm) | HCL-BK-10 (ppm HCL) |
|---|---|---|
| Carbon Monoxide (CO) | 100 | 0 |
| Hydrogen ($H_2$) | 100 | 0 |
| Sulphur Dioxide ($SO_2$) | 5 | 20 |
| Hydrogen Sulfide ($H_2S$) | 5 | 15 |

- Whilst BIKAI sensors are designed to be highly specific to the gas they are intended to measure, they will still respond to some degree to various other gases. The table below is not exclusive and other gases not included in the table may still cause a sensor to react.
- Note: The cross sensitivity data shown below does not form part of the product specification and is supplied for guidance only. Values quoted are based on tests conducted on a small number of sensors and any batch may show significant variation. For the most accurate measurements, an instrument should be calibrated using the gas under investigation.

## Precautions for Use

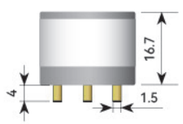
- Avoid exposure: During storage, installation, and operation, avoid exposing the sensor to high concentrations of solvent vapors. Do not blow organic solvents, paint, chemical reagents, oils, or high-concentration gases directly onto the sensor.
- Ensure ventilation: Do not block the air inlet. Do not use adhesive bonding materials such as glue or sealants on, above, or around the sensor.
- Correct installation: Connection should be made via PCB sockets only. Direct soldering or bending of the pins is prohibited. When using sensors with printed circuit boards (PCBs), degreasing agents should be used before the sensor is fitted.
- Prevent mechanical damage: Avoid compression, dropping, strong vibrations, or physical impacts.
- Visual inspection: If the housing is damaged, deformed, or the seal is compromised, discontinue use immediately.
- No disassembly: Do not disassemble the sensor to prevent electrolyte leakage or internal contamination.
- Recovery and calibration: After the sensor is exposed to high concentration gas for long periods, the output signal may require time to recover to normal operation. It is recommended to allow the sensor to stabilize and perform calibration before reuse.
- Periodic calibration: Under normal operating conditions, it is recommended to perform a standard calibration every three months. Under harsh operating conditions, shorten the interval to once per month.

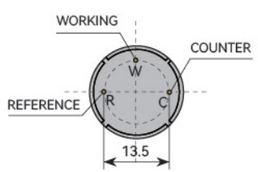
## Safety Note

- This sensor is designed to be used in safety critical applications. To ensure proper operation of the sensor and/or instrument in which it is used, it is a requirement that the function of the device is confirmed by exposure to target gas (bump check) before each use of the sensor and/or instrument. Failure to carry out such tests may endanger personnel and property.

# Electrochemical Hydrogen Cyanide (HCN) Gas Sensor HCN-BK-10
**(Customization or OEM services available)**


## Dimensions


Note: All dimensions are in millimeters (mm).
Unless otherwise specified, the dimensional tolerance is ±0.15 mm.

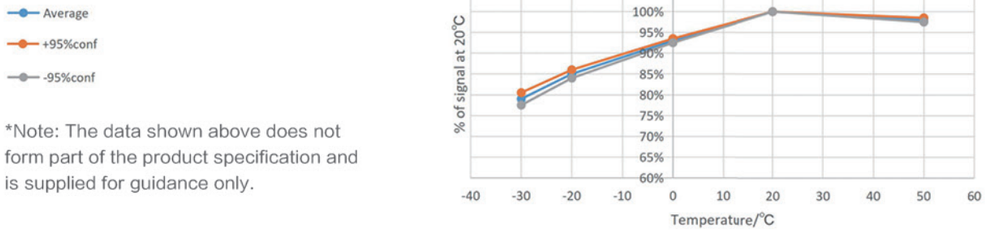
| Measurement | |
|---|---|
| Operating Principle | Three-electrode electrochemical |
| Measurement Range | 0 ~ 10 ppm |
| Maximum Overload | 50 ppm |
| Resolution | 0.1 ppm |
| Filter | None |
| Sensitivity* | 50 ± 10 nA/ppm |
| Response Time (T90)* | ≤ 60 s |
| Baseline Offset (clean air)* | −0.5 ppm ~ 0.5 ppm |
| Zero Shift (−30℃ to +50℃ )* | < 1 ppm |
| Repeatability | < 3 % |
| Linearity | ± 6 %FS |
| **Electrical** | |
| Recommended Load Resistor | 33 Ω |
| Bias Voltage | Not required |
| **Mechanical** | |
| Housing Material | ABS |
| Weight | 5.7 ± 0.2 g |
| Orientation | Any |
| **Environmental** | |
| Operating Temperature Range | −30 ℃ ~ 50 ℃ |
| Operating Pressure Range | 1 atm ± 10 % |
| Operating Humidity Range | 15 ~ 90 % RH non-condensing |
| **Lifetime** | |
| Long Term Output Drift | < 2 % signal drift / month |
| Recommended Storage Temperature | 0 ℃ ~ 20 ℃ |
| Expected Operating Life | 2 years in air |
| Storage Life | 6 months in original packaging |
| Warranty | 12 months from date of dispatch |

* Specifications are based on conditions at 20℃, 50 % RH, and 1013 mbar, using BIKAI Technology recommended circuitry. Performance characteristics outline the performance of sensors supplied within the first three months. Output signal can drift below the lower limit over time.





## Temperature response




*Note: The data shown above does not form part of the product specification and is supplied for guidance only.

## Cross Sensitivity

| GAS | Concentration Used (ppm) | HCN-BK-10 (ppm HCN) |
|---|---|---|
| Carbon Monoxide (CO) | 100 | 0 |
| Hydrogen Sulfide ($H_2S$) | 10 | 30 |
| Nitrogen Dioxide ($NO_2$) | 10 | −20 |
| Nitric Oxide (NO) | 50 | 0 |

- Whilst BIKAI sensors are designed to be highly specific to the gas they are intended to measure, they will still respond to some degree to various other gases. The table below is not exclusive and other gases not included in the table may still cause a sensor to react.
- Note: The cross sensitivity data shown below does not form part of the product specification and is supplied for guidance only. Values quoted are based on tests conducted on a small number of sensors and any batch may show significant variation. For the most accurate measurements, an instrument should be calibrated using the gas under investigation.

## Precautions for Use

- Avoid exposure: During storage, installation, and operation, avoid exposing the sensor to high concentrations of solvent vapors. Do not blow organic solvents, paint, chemical reagents, oils, or high-concentration gases directly onto the sensor.
- Ensure ventilation: Do not block the air inlet. Do not use adhesive bonding materials such as glue or sealants on, above, or around the sensor.
- Correct installation: Connection should be made via PCB sockets only. Direct soldering or bending of the pins is prohibited. When using sensors with printed circuit boards (PCBs), degreasing agents should be used before the sensor is fitted.
- Prevent mechanical damage: Avoid compression, dropping, strong vibrations, or physical impacts.
- Visual inspection: If the housing is damaged, deformed, or the seal is compromised, discontinue use immediately.
- No disassembly: Do not disassemble the sensor to prevent electrolyte leakage or internal contamination.
- Recovery and calibration: After the sensor is exposed to high concentration gas for long periods, the output signal may require time to recover to normal operation. It is recommended to allow the sensor to stabilize and perform calibration before reuse.
- Periodic calibration: Under normal operating conditions, it is recommended to perform a standard calibration every three months. Under harsh operating conditions, shorten the interval to once per month.

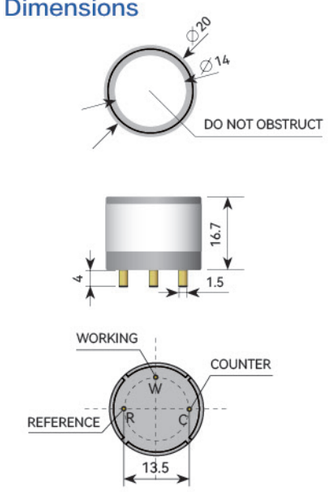
## Safety Note

- This sensor is designed to be used in safety critical applications. To ensure proper operation of the sensor and/or instrument in which it is used, it is a requirement that the function of the device is confirmed by exposure to target gas (bump check) before each use of the sensor and/or instrument. Failure to carry out such tests may endanger personnel and property.

# Electrochemical Arsine ($AsH_3$) Gas Sensor AsH3-BK-10

**(Customization or OEM services available)**


## Dimensions




Note: All dimensions are in millimeters (mm). Unless otherwise specified, the dimensional tolerance is ±0.15 mm.

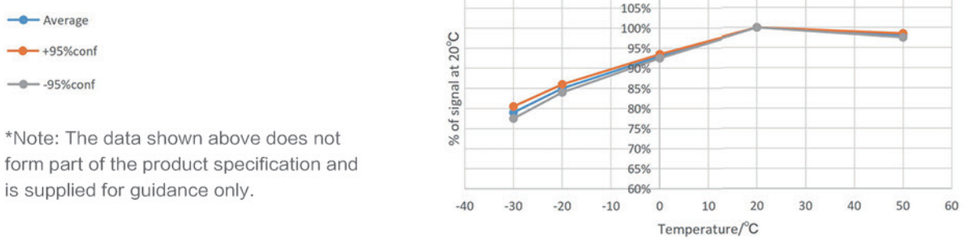
| Measurement | |
|---|---|
| Operating Principle | Three-electrode electrochemical |
| Measurement Range | 0 ~ 10 ppm |
| Maximum Overload | 20 ppm |
| Resolution | 0.1 ppm |
| Filter | None |
| Sensitivity* | 0.25 ± 0.1 μA/ppm |
| Response Time (T90)* | ≤ 60 s |
| Baseline Offset (clean air)* | −0.5 ppm ~ 0.5 ppm |
| Zero Shift (−30℃ to +50℃ )* | < 0.5 ppm |
| Repeatability | < 3 % |
| Linearity | ± 6 %FS |
| **Electrical** | |
| Recommended Load Resistor | 33 Ω |
| Bias Voltage | Not required |
| **Mechanical** | |
| Housing Material | ABS |
| Weight | 5.7 ± 0.2 g |
| Orientation | Any |
| **Environmental** | |
| Operating Temperature Range | −30 ℃ ~ 50 ℃ |
| Operating Pressure Range | 1 atm ± 10 % |
| Operating Humidity Range | 15 ~ 90 % RH non-condensing |
| **Lifetime** | |
| Long Term Output Drift | < 2 % signal drift / month |
| Recommended Storage Temperature | 0 ℃ ~ 20 ℃ |
| Expected Operating Life | 2 years in air |
| Storage Life | 6 months in original packaging |
| Warranty | 12 months from date of dispatch |

* Specifications are based on conditions at 20℃, 50 % RH, and 1013 mbar, using BIKAI Technology recommended circuitry. Performance characteristics outline the performance of sensors supplied within the first three months. Output signal can drift below the lower limit over time.





## Temperature response




*Note: The data shown above does not form part of the product specification and is supplied for guidance only.

## Cross Sensitivity

| GAS | Concentration Used (ppm) | AsH3-BK-10 (ppm $AsH_3$) |
|---|---|---|
| Ammonia ($NH_3$) | 100 | 0 |
| Hydrogen Sulfide ($H_2S$) | 2 | 3 |
| Nitrogen Dioxide ($NO_2$) | 10 | −3 |
| Hydrogen ($H_2$) | 1000 | 5 |
| Sulphur Dioxide ($SO_2$) | 20 | 4 |

- Whilst BIKAI sensors are designed to be highly specific to the gas they are intended to measure, they will still respond to some degree to various other gases. The table below is not exclusive and other gases not included in the table may still cause a sensor to react.
- Note: The cross sensitivity data shown below does not form part of the product specification and is supplied for guidance only. Values quoted are based on tests conducted on a small number of sensors and any batch may show significant variation. For the most accurate measurements, an instrument should be calibrated using the gas under investigation.

## Precautions for Use

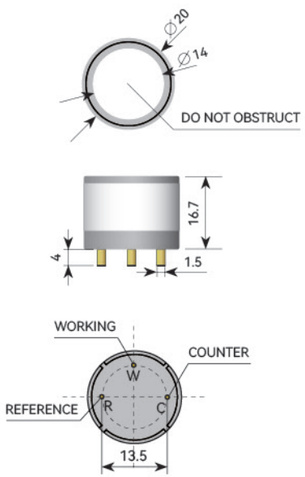
- Avoid exposure: During storage, installation, and operation, avoid exposing the sensor to high concentrations of solvent vapors. Do not blow organic solvents, paint, chemical reagents, oils, or high-concentration gases directly onto the sensor.
- Ensure ventilation: Do not block the air inlet. Do not use adhesive bonding materials such as glue or sealants on, above, or around the sensor.
- Correct installation: Connection should be made via PCB sockets only. Direct soldering or bending of the pins is prohibited. When using sensors with printed circuit boards (PCBs), degreasing agents should be used before the sensor is fitted.
- Prevent mechanical damage: Avoid compression, dropping, strong vibrations, or physical impacts.
- Visual inspection: If the housing is damaged, deformed, or the seal is compromised, discontinue use immediately.
- No disassembly: Do not disassemble the sensor to prevent electrolyte leakage or internal contamination.
- Recovery and calibration: After the sensor is exposed to high concentration gas for long periods, the output signal may require time to recover to normal operation. It is recommended to allow the sensor to stabilize and perform calibration before reuse.
- Periodic calibration: Under normal operating conditions, it is recommended to perform a standard calibration every three months. Under harsh operating conditions, shorten the interval to once per month.

## Safety Note

- This sensor is designed to be used in safety critical applications. To ensure proper operation of the sensor and/or instrument in which it is used, it is a requirement that the function of the device is confirmed by exposure to target gas (bump check) before each use of the sensor and/or instrument. Failure to carry out such tests may endanger personnel and property.

# Electrochemical Phosphine ($PH_3$) Gas Sensor PH3-BK-10
**(Customization or OEM services available)**


## Dimensions




Note: All dimensions are in millimeters (mm). Unless otherwise specified, the dimensional tolerance is ±0.15 mm.

| Measurement | |
|---|---|
| Operating Principle | Three-electrode electrochemical |
| Measurement Range | 0 ~ 10 ppm |
| Maximum Overload | 50 ppm |
| Resolution | 0.1 ppm |
| Filter | None |
| Sensitivity* | 0.5 ± 0.1 μA/ppm |
| Response Time (T90)* | ≤ 60 s |
| Baseline Offset (clean air)* | −0.5 ppm ~ 0.5 ppm |
| Zero Shift (−30℃ to +50℃ )* | < 0.5 ppm |
| Repeatability | < 3 % |
| Linearity | ± 6 %FS |
| **Electrical** | |
| Recommended Load Resistor | 33 Ω |
| Bias Voltage | Not required |
| **Mechanical** | |
| Housing Material | ABS |
| Weight | 5.7 ± 0.2 g |
| Orientation | Any |
| **Environmental** | |
| Operating Temperature Range | −30 ℃ ~ 50 ℃ |
| Operating Pressure Range | 1 atm ± 10 % |
| Operating Humidity Range | 15 ~ 90 % RH non-condensing |
| **Lifetime** | |
| Long Term Output Drift | < 2 % signal drift / month |
| Recommended Storage Temperature | 0 ℃ ~ 20 ℃ |
| Expected Operating Life | 2 years in air |
| Storage Life | 6 months in original packaging |
| Warranty | 12 months from date of dispatch |

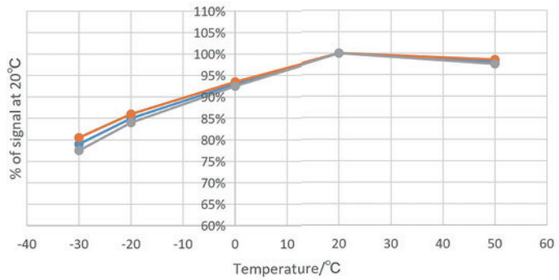
* Specifications are based on conditions at 20℃ , 50 % RH, and 1013 mbar, using BIKAI Technology recommended circuitry. Performance characteristics outline the performance of sensors supplied within the first three months. Output signal can drift below the lower limit over time.





## Temperature response


*Note: The data shown above does not form part of the product specification and is supplied for guidance only.




## Cross Sensitivity

| GAS | Concentration Used (ppm) | PH3-BK-10 (ppm $PH_3$) |
|---|---|---|
| Ammonia ($NH_3$) | 100 | 0 |
| Hydrogen Sulfide ($H_2S$) | 100 | 20 |
| Sulphur Dioxide ($SO_2$) | 100 | 25 |
| Chlorine ($Cl_2$) | 5 | −1.5 |

- Whilst BIKAI sensors are designed to be highly specific to the gas they are intended to measure, they will still respond to some degree to various other gases. The table below is not exclusive and other gases not included in the table may still cause a sensor to react.
- Note: The cross sensitivity data shown below does not form part of the product specification and is supplied for guidance only. Values quoted are based on tests conducted on a small number of sensors and any batch may show significant variation. For the most accurate measurements, an instrument should be calibrated using the gas under investigation.

## Precautions for Use

- Avoid exposure: During storage, installation, and operation, avoid exposing the sensor to high concentrations of solvent vapors. Do not blow organic solvents, paint, chemical reagents, oils, or high-concentration gases directly onto the sensor.
- Ensure ventilation: Do not block the air inlet. Do not use adhesive bonding materials such as glue or sealants on, above, or around the sensor.
- Correct installation: Connection should be made via PCB sockets only. Direct soldering or bending of the pins is prohibited. When using sensors with printed circuit boards (PCBs), degreasing agents should be used before the sensor is fitted.
- Prevent mechanical damage: Avoid compression, dropping, strong vibrations, or physical impacts.
- Visual inspection: If the housing is damaged, deformed, or the seal is compromised, discontinue use immediately.
- No disassembly: Do not disassemble the sensor to prevent electrolyte leakage or internal contamination.
- Recovery and calibration: After the sensor is exposed to high concentration gas for long periods, the output signal may require time to recover to normal operation. It is recommended to allow the sensor to stabilize and perform calibration before reuse.
- Periodic calibration: Under normal operating conditions, it is recommended to perform a standard calibration every three months. Under harsh operating conditions, shorten the interval to once per month.

## Safety Note

- This sensor is designed to be used in safety critical applications. To ensure proper operation of the sensor and/or instrument in which it is used, it is a requirement that the function of the device is confirmed by exposure to target gas (bump check) before each use of the sensor and/or instrument. Failure to carry out such tests may endanger personnel and property.

# BIKAI NOx Module BK-PSICK-2044088

(Customization or OEM services available)

Plug & Play Light Solution for NOx measurement. Monitoring Environmental Pollution.

## NOx measurement

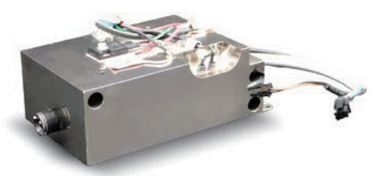
NOx is a generic term for the nitrogen oxides NO and NO2. It reacts in our atmosphere to form a wide variety of toxic products, as well as supporting the formation of ground-level (tropospheric) ozone. Common methods for measuring NOx include sensor technologies based on chemiluminescence and electrochemical techniques. This requires conversion of NO2 to NO for measurement or calculation of the NO2 content based on an assumed NO : NO2 ratio. In addition, NOx can be measured with IR and that can be affected by the content of H2O and CO2 in the sample. Direct UV absorption measurement of both NO and NO2 is the more precise way to measure total NOx for continuous emissions monitoring, and measurement in the UV-region avoids the influence of H2O and CO2.
However, system development based on UV Resonance Absorption Spectroscopy (UV-RAS) has been difficult in the past due to challenges in tuning the UV-lamp operation within its environment to optimize lifetime and intensity.

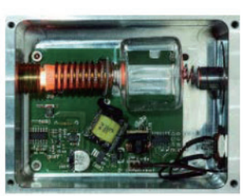
## BIKAI NOx Module

An NOx EDL is a lamp with N2, O2 gas fill that emits a spectrum in the wavelength range between 200 nm to 600 nm. Spectral lines in the 200 nm region can be used for the detection of NO and NO2, H2S, NH3, SO2 and others. BIKAI has developed a plug & play light solution for NOx Measurement. This NOx lamp module offers a pre-tuned UV-light source in a stable environment, for easy integration into OEM UV-RAS systems.

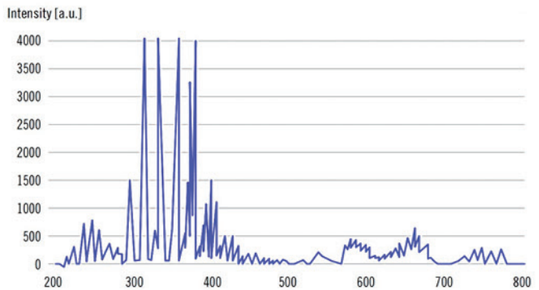
BIKAI NOx Module has an integrated EDL and comes with the corresponding power supply combined in a box.

| | |
|---|---|
| **Spectral output** | 200 ~ 600 nm<br>NOx specific lines between 200 ~ 300 nm |
| **Technology** | Electrodeless gas discharge lamp<br>Gas: N2, O2 |
| **Operating conditions** | 12 V<br>High frequency stimulation |
| **Features** | NOx specific lines<br>High stability<br>No tuning needed<br>No auxiliary devices<br>Shock/vibration resistant |
| **Lifetime** | 1 year plus |

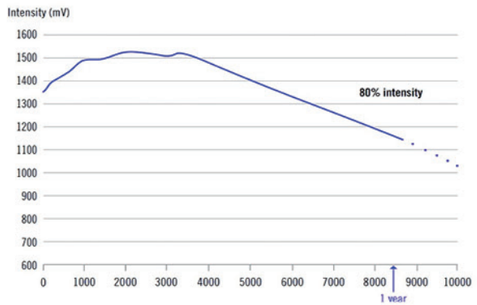




## BIKAI NOx Module Spectrum




## BIKAI NOx Module Lifetime




## BIKAI NOx Module Features and Benefits

- Plug & Play 12 V.
- No frequency adjustment.
- Simple integration and replacement.
- Very accurate direct analysis and measurement of NO and NO2 possible.
- No crossover of H2O, CO and CO2.
- Long life time of the lamp (1 year plus) for continuous measurement.
- Reduced design-in costs – complete plug & play-module for simple system integration.
- No consumable costs per measurement.

## BIKAI NOx Module Applications

Sources of NOx are predominantly man-made: burning fossil fuels for energy generation, such as coal-,oil- and gas-fired power stations, refuse incineration, some chemical processes and vehicle fuels, like modern diesel cars, used for land, water and air transportation.

Application fields:

- Environmental monitoring
- Smoke stack monitoring
- Emission control testing
- Marine exhaust monitoring

# BK Xenon Flash Lamp Modules
(Customization or OEM services available)

BK-XFM series xenon flash lamp module is a new instrument light source which integrates xenon lamp bulb, trigger and high voltage power supply. It is the latest light source module product of our company.

## Product application:

- Ultraviolet-visible photometer, liquid chromatograph, fluorescence spectrometer
- Air pollution analysis
- Water pollution analysis
- Thin film measurement
- Semiconductor detection
- Medical equipment
- Microscope illumination

## Product features:

- There are 2W/5W/10W/15W/16W/20W light sources to choose from.
- It has EXT/INT selector switch and both internal and external trigger modes.
- High radiation intensity, high flash instantaneous power.
- Wide spectral range, 185 ~ 2000nm.
- Long service life
- Good stability
- Low calorific value, which is beneficial to the stability of the optical machine.
- Start immediately without preheating.
- DB-9 universal connector, plug and play.
- The external structure and size can be customized according to user's requirements.

## Operating conditions:

| Item | Parameter |
|---|---|
| Operating ambient temperature | 0 ~ +40 ℃ |
| storage temperature | -40 ~ +90 ℃ |
| Use and store humidity | Max 95 % RH |

## Output parameters:

| Item | Parameter |
|---|---|
| Discharge arc length | 1.5 ± 0.2 mm |
| Transparent panel material | UV transparent glass |
| Optical radiation wavelength range | 185 ~ 2000 nm |
| Light output stability | Max 2.0 % CV ; Max 8.0 % PV ~ 1000 flash |
| Life (number of flashes) | ⩾ 109 times |
| Maximum average power | Continuous 5 W ( 10 W / 15 W / 20 W ) |
| Discharge capacitance | 0.047、0.11、0.22、0.28 μF |
| Main discharge voltage | 400 ~ 600V, special customization can reach 1000V |

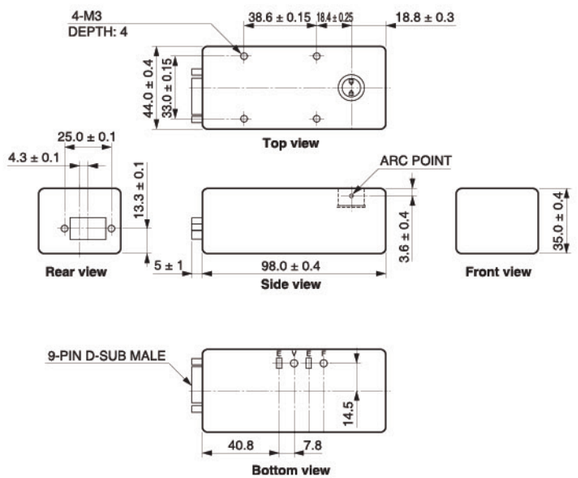
## Input parameters:

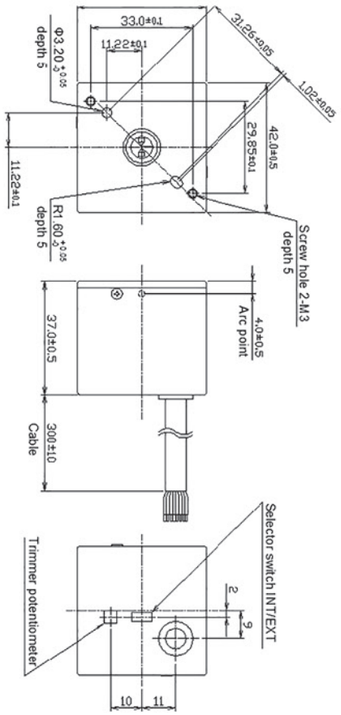
| Item | Parameter |
|---|---|
| input voltage | Min 11.0 ~ Max 28.0 V |
| incoming current | 11 V: Max 1.4 A |
| gate voltage | 5V square wave pulse; High level pulse width ⩾ 10 μS |
| Maximum trigger frequency (5W) | C=0.047 μF, V=600 V : Max 530 Hz |
| | C=0.11 μF, V=600 V : Max 252 Hz |
| | C=0.22 μF, V=600 V : Max 126 Hz |
| | C=0.28 μF, V=600 V: Max 100 Hz |
| Trigger input impedance | 390 Ω |

## Selection table:

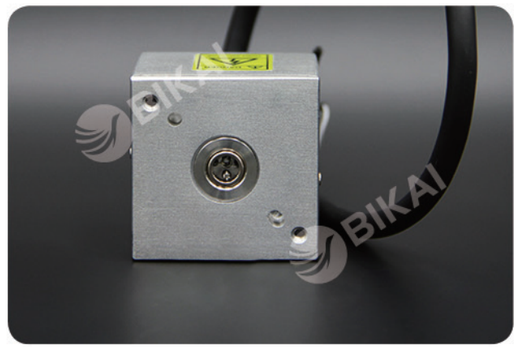
| Item | External modulation voltage | Main discharge voltage | Single flash energy | Maximum frequency | Power output |
|---|---|---|---|---|---|
| 0.047 | 3.2 | 400 | 3.8 | 530 | 2.0 |
| | 4.0 | 500 | 5.9 | 530 | 3.1 |
| | 4.4 | 550 | 7.1 | 530 | 3.7 |
| | 4.8 | 600 | 8.5 | 530 | 4.5 |
| 0.11 | 3.2 | 400 | 8.8 | 530 | 4.7 |
| | 4.0 | 500 | 13.8 | 382 | 5.0 |
| | 4.4 | 550 | 16.6 | 300 | 5.0 |
| | 4.8 | 600 | 19.8 | 252 | 5.0 |
| 0.22 | 3.2 | 400 | 17.6 | 284 | 5.0 |
| | 4.0 | 500 | 27.5 | 182 | 5.0 |
| | 4.4 | 550 | 33.3 | 150 | 5.0 |
| | 4.8 | 600 | 39.6 | 126 | 5.0 |
| 0.28 | 3.2 | 400 | 22.4 | 223 | 5.0 |
| | 4.0 | 500 | 35.0 | 143 | 5.0 |
| | 4.4 | 550 | 42.4 | 118 | 5.0 |
| | 4.8 | 600 | 50.4 | 100 | 5.0 |

## Dimensions:







# Deuterium-Tungsten integrated light source

(Customization or OEM services available)

As a compact analytical light source, the spectral range of the light source can cover 185-1100nm, and various power supply modes ensure that the light source can adapt to more application scenarios. A variety of light output modes can meet different types of needs of users and can be customized for users. The continuous working life of the light source is over 1000 hours, and it has excellent repeatability and stability (the deviation is within 0.1 %).

The light source adopts pulse lighting mode, which can achieve stable output when it is turned on instantly. It is an ideal light source for on-line monitoring equipment, and can provide a variety of optional light sources.

## Applications:

- Laboratory: UV-visible spectroscopy
- Environment: water quality monitoring, sewage, analysis, marine chemistry
- Biological measurement
- Process control
- Independent light source
- Spectral calibration


| Selectable lamp | | | | |
|---|---|---|---|---|
| Module Model | DTM6/10 | DTM6/10S | DTM6/50 | DTM6/50S |
| Lamp Model | DTL6/10 | DTL6/10S | DTL6/50 | DTL6/50S |
| Part Number | 45006253 | 80000756 | 45006266 | 80001018 |
| Aperture Size | 1.0 mm | 1.0 mm | 0.5 mm | 0.5 mm |
| Window Material | Fused quartz | Fused synthetic silica | Fused quartz | Fused synthetic silica |
| Spectral Distribution and Fiber | 200 ~ 1100 nm | 185 ~ 1100 nm | 200 ~ 1100 nm | 185 ~ 1100 nm |
| Recommended Fiber | 400 ~ 600 μm | 400 ~ 600 μm | 200 ~ 600 μm | 200 ~ 600 μm |

| Parameter | D2B style | D2C style | D2H style |
|---|---|---|---|
| spectral distribution | 200 ~ 1100 nm,<br>Optional range 185 ~ 1100 nm | 200 ~ 1100 nm,<br>Optional range 185 ~ 1100 nm | 185 ~ 1100 mm |
| power consumption | 6 W | 6 W | 12 W |
| power requirement | 12V / 0.6 mA DC | 12V / 0.6 mA DC | 12V / 1.2 mA DC |
| Operating ambient temperature | 5 ~ 35 ℃ | 5 ~ 35 ℃ | 5 ~ 35 ℃ |
| relative humidity | 90 % max, no condensation | 90 % max, no condensation | 90 % max, no condensation |
| Size (length × width × height) | 157 × 55 × 37 mm | 123 × 36 × 38 mm | 161 × 58 × 51.5 mm |
| weight | 130 g | 104 g | 230 g |
| shutter | Yes | Yes | Yes |
| tungsten lamp | Yes | Yes | Yes |
| External control | The lamp (D2, tungsten lamp) is independently turned on/off,<br>Shutter opening/closing,<br>The green LED lights up when the 12V DC power supply supplies power. | The lamp (D2, tungsten lamp) is independently turned on/off,<br>Shutter opening/closing,<br>The green LED lights up when the 12V DC power supply supplies power. | The lamp (D2, tungsten lamp) is independently turned on/off,<br>Shutter opening/closing,<br>The green LED lights up when the 12V DC power supply supplies power. |
| Light outlet | Focused or collimated light beam | Focused or collimated light beam | Focused |
| fibre diameter | 200 μm，400 μm，600 μm | 200 μm，400 μm，600 μm | 200 μm，400 μm，600 μm |
| Optical fiber connector | SMA905 | SMA905 | SMA905 |
| Numerical aperture (NA) | D2 lamp 0.245, tungsten lamp 0.057. | D2 lamp 0.245, tungsten lamp 0.057. | D2 lamp 0.245, tungsten lamp 0.057. |
| cool | No need | Suggested external cooling | Forced cooling of onboard fan |
| deuterium lamp | | | |
| spectral distribution | 200 ~ 400 nm wireless,<br>Optional range 185 ~ 1100 nm | 200 ~ 400 nm wireless,<br>Optional range 185 ~ 1100 nm | 185 ~ 400 nm wireless |
| Window material | Fused quartz, fused silica. | Fused quartz, fused silica. | Fused synthetic silica |
| Light output (radiation intensity) | ⩾ 5 × 10 ~ 8W/sr@230nm | ⩾ 5 × 10 ~ 8W/sr@230nm | ⩾ 10 × 10 ~ 8W/sr@230nm |
| stability | ⩽ 1 × 10 ~ 3AU | ⩽ 1 × 10 ~ 3AU | need to be decided or settled |
| drift | ⩽ 0.25 %/h | ⩽ 0.25 %/h | need to be decided or settled |
| Excitation frequency | 250 kHz | 250 kHz | 250 kHz |
| operating voltage | About 1kV | About 1kV | About 1kV |
| life | ⩾ 1000 hours: @230nm<br>(50 % strength loss) | ⩾ 1000 hours: @230nm<br>(50 % strength loss) | ⩾ 1000 hours: @230nm<br>(50 % strength loss) |
| tungsten lamp | | | |
| spectral distribution | 400 ~ 1100 nm | 400 ~ 1100 nm | 400 ~ 1100 nm |
| voltage | 5V DC | 5V DC | 5V DC |
| electric current | 45 mA DC | 45 mA DC | 45 mA DC |
| Typical service life | ⩾ 2000 hours | ⩾ 2000 hours | ⩾ 2000 hours |