

blacklinesafety

PRODUCT DATASHEETS



Every second counts.

When an incident occurs, the clock starts — and it doesn't stop until help arrives. What happens in between is in your hands, and decisions must be made in real-time. Who's involved, what happened, where is everyone and how are you going to manage the situation?

Blackline's connected safety monitoring technology gives you the chance to control time. Our technologies automatically watch over each employee and call for help, even when they can't. Every alert is reported to monitoring personnel in real-time, arming them with the situational awareness to manage optimized emergency responses.

Our solutions are all about trust and ease of use — connecting your team to real people and ensuring industry-leading monitoring accompanies them, wherever they operate.





DATASHEET

G7 GAS SENSOR PORTFOLIO

Gas	Sensor type	Sensor model	Range	Resolution
Ammonia (NH ₃)	Electrochemical	Citytech, Sensoric NH3 3E 100 SE	0–100 ppm	0.1 ppm
High-range ammonia (NH ₃)	Electrochemical	Sensoric NH3 E3 500 SE	0–500 ppm	1 ppm
Carbon monoxide (CO)	Electrochemical	Citytech, 4CF+ CiTiceL	0–500 ppm	1 ppm
High-range carbon monoxide (CO)	Electrochemical	Citytech 4CM	0–2000 ppm	5 ppm
Hydrogen resistant carbon monoxide (CO-H)	Electrochemical	Citytech 2CF3	0–500 ppm	1 ppm
Carbon dioxide (CO ₂)	NDIR	Gas Sensing Solutions, MiniIR	0–50,000 ppm	50 ppm
Chlorine (Cl ₂)	Electrochemical	Citytech, Sensoric Cl2 3E 50	0–20 ppm	0.1 ppm
Chlorine dioxide (ClO ₂)	Electrochemical	Sensoric ClO2 3E 1 O	0–2 ppm	0.01 ppm
COSH	Electrochemical	Citytech, 4COSH Dual Gas CO/ H ₂ S Sensor	0–500 ppm CO, 0–100 ppm H ₂ S	1 ppm CO, 0.1 ppm H ₂ S
Hydrogen cyanide (HCN)	Electrochemical	Sensoric HCN 3E 30 F	0–30 ppm	0.1 ppm
Hydrogen sulfide (H ₂ S)	Electrochemical	City Technology, 4HS+ Hydrogen Sulfide CiTiceL	0–100 ppm	0.1 ppm
High-range hydrogen sulfide (H ₂ S)	Electrochemical	City Technology, 4HS+ Hydrogen Sulfide CiTiceL	0–500 ppm	0.5 ppm
LEL-infrared (LEL-IR)	NDIR	MIPEX, O2-X-X-X.1	0–100% LEL	1% LEL
Nitrogen dioxide (NO ₂)	Electrochemical	City Technology, 4ND	0–50 ppm	0.1 ppm
Oxygen (O ₂)	Pumped electrochemical	City Technology, 4OxLL Longlife Oxygen CiTiceL	0–25% vol	0.1% vol
Ozone (O ₃)	Electrochemical	Sensoric O3 3E 1	0–1 ppm	0.01 ppm
Photoionization (PID) ppm	PID	Ion Science, MiniPID 2	0–4,000 ppm*	Dynamic resolution*
Photoionization (PID) ppb	PID	Ion Science, MiniPID 2	0–10,000 ppb*	Dynamic resolution*
Sulfur dioxide (SO ₂)	Electrochemical	City Technology, 4S Rev. 2 Sulfur Dioxide CiTiceL	0–100 ppm	0.1 ppm

All specifications subject to change without notice

* Dependant on correction factor



Features

- Up to 100-day battery life
- Diffusion and combination diffusion / pump models
- Internal 2G/3G/4G wireless works in 100+ countries
- Works globally with optional Iridium satellite communication
- Call for help using the SOS latch
- Works seamlessly with Blackline Live cloud-hosted software
- Communicates all data to the Blackline Safety Cloud — no need to collect data from the field
- Blackline Live automates configuration changes, plus firmware updates automatically
- Leverages the same plug-and-play gas sensor cartridges as G7c
- Blackline Analytics automates compliance reporting
- Internal GPS and beacon location technology
- Manage G7 EXO area monitors in Blackline Live alongside G7 personal monitors

G7 EXO

MOVE YOUR AREA MONITORING PROGRAM INTO THE CLOUD

Blackline revolutionised personal gas monitoring with the introduction of G7c, the world's only detector with integrated cellular communications and two-way voice calling to a live monitoring team. Delivering a broad range of gas detection and real-time safety features, G7c is the most connected gas detection instrument on the market.

We are changing the gas detection world again. Introducing G7 EXO — the world's first cloud-connected area monitor with integrated 2G/3G/4G communications. From the moment G7 EXO is turned on, it automatically connects directly to the Blackline Safety Cloud and delivers a complete situational view to businesses. G7 EXO defines the ideal cloud-connected area monitor for facilities, maintenance projects, tank farms, fencelines, drilling rigs and disaster responses.

Unlike competitor solutions, G7 EXO area monitors do not need to be set up with a line of sight between each other. No more changing batteries every few days either. G7 EXO combines 100 days of battery run-time and integrated communications for seamless remote configuration and monitoring.

PRELIMINARY SPECIFICATIONS (SUBJECT TO CHANGE)

Gas cartridge features

Under and over limit alerts
Time-weighted average (TWA)
Short-term exposure limit (STEL)
Low and high gas alerts
Bump test and calibration notification
Bump test and calibration failure

User interface

Display: 480 by 640 pixel, eight-color active matrix liquid crystal display
Menu system: driven by three-button keypad,
Power button: On/off
SOS latch: Send emergency alert
Multi-language support: (EN, FR, ES, DE, IT, NL, PT)

User notification

Green connectivity light: Blinking (powered), continuous (connected)
360-degree visible yellow, red and blue lights
Yellow light: pending and warning alarms
Red light: Red alert communicated
Blue LiveResponse light: Confirmation that a monitoring team has acknowledged the alert
Alarm sound pressure: ~100 dB @ 30 cm (11.8")
Two-way voice calling sound pressure: ~95 dB @ 30 cm (11.8")

Gas sensors

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Pump model

Number of pump channels: 4
Sampling period per channel: Adjustable
Tubing length per channel: Up to 30 m (100 ft)

Input / output ports

Intrinsically safe, highly configurable external signal ports designed to integrate with external alarms and electrical systems.
Intrinsic safety specification: TBD

Power & battery

Rechargeable battery capacity: 144 Ah (LiFePO₄)
Battery life in diffusion mode: 100 days at 20°C (68°F), LEL-IR, H₂S, CO and O₂ config.
Battery life in pump mode: 30 days at 20°C (68°F), LEL-IR, H₂S, CO and O₂ config.
Charge time: TBD
Intrinsically safe trickle-charging port: Yes, supports G7 EXO continuous operation

Cellular wireless radio

Coverage: 100+ countries and 200+ carriers
Europe: 2G/3G or 2G/4G
North America: 2G/3G or 3G/4G
Australia/New Zealand: 2G/3G or 3G/4G
Antenna: Regionally optimised
Band specifications: TBD

Satellite wireless radio option

User-upgradeable add-on: Yes
Network: Iridium, global coverage

Wireless updates

Device configuration changes: Yes
Device firmware upgrade OTA: Yes

Location technology

GPS radio: 48-channel high sensitivity
Assisted-GPS: Yes
GPS accuracy: ~5 m (16 ft) outdoors, open sky
Location beacon radio: Yes, Blackline's proprietary location beacon technology and floor/site plans

Size & weight

Material: Rugged housing built from aluminum, plastic and rubberized bumpers
Size: 385 mm x 188 mm x 220 mm (15.1" x 7.4" x 8.7")
Weight: 9.5 kg (21 lb)

Environmental

Storage temp.: -40°C to 60°C (-40°F to 140°F)
Operating temp.: -40°C to 55°C (-40°F to 131°F)
Charging temp.: 0°C to 45°C (32°F to 113°F)
Ingress protection: Designed to meet IP65

Approvals (targeted)

RoHS, CE, RCM
Canada & USA: Class I Division 1 Group A,B,C,D T4;  Class I Zone 0 AEx da ia IIC T4; Ex da ia IIC T4 Ga IECEx: Ex da ia IIC T4 Ga  II 1 G
ATEX: Ex da ia IIC T4 Ga  II 1 G
LEL: CSA C22.2 No.152; ISA 12.13.01

Accessories

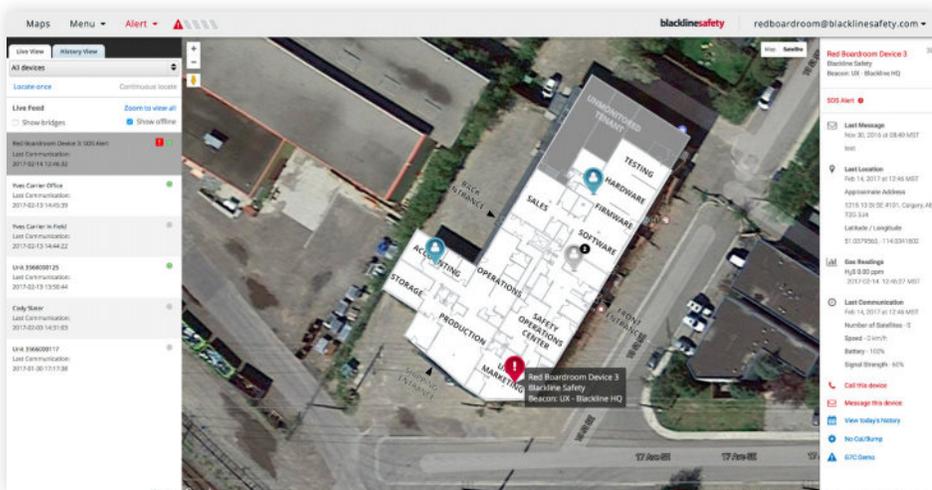
Solar panel for continuous monitoring. Mounting options include wall, tripod, anti-tip, magnetic and rail/scaffold mounts

Blackline Live web application

Cloud-hosted safety monitoring web application is highly customisable for every customer requirement. Includes live map, employee address book, user roles, alert management, device configurations, alert setups and reporting

Warranty

G7 EXO area monitor: three-year hardware warranty
Blackline Complete lease option: provides comprehensive warranty for full term



BLACKLINE LIVE PORTAL

LEADING SAFETY MONITORING TOOLS

The Blackline Live portal is at the core of all Blackline Safety monitoring solutions, equipping businesses with leading alert management tools, dashboard and comprehensive configuration management of fielded devices. Blackline Live can be accessed from anywhere on an internet-connected device.

The safety status of every team member is visible at a glance using Blackline Live's real-time maps, showing the location and alert status of all fielded devices. Custom floor and site plans work together with Location Beacons, delivering more comprehensive situational awareness where GPS may be unavailable or in and around complex facilities.

Employee-worn monitoring devices are easily configured for specific work environments. Each device is managed in Blackline Live using configuration profiles that make it easy to tailor device functionality to accommodate any need. Devices are configured wirelessly, over-the-air, ensuring they are always up-to-date and working as they should. Alert profiles are also configured through Blackline Live, with documented custom emergency protocols tailored to the device that instruct monitoring personnel how to manage optimized emergency responses. Using address book contacts stored in Blackline Live, personnel know who to call and how to escalate responses, up to and including EMS, fire or police.

Whether you decide to monitor in-house or take advantage of Blackline's 24/7 Safety Operations Center, monitoring personnel use Blackline Live to provide them with critical insights and workflows to manage emergency alerts in real-time. As a cloud-hosted web portal, Blackline Live doesn't require IT approved downloads or costly installation — accessing your account is as simple as logging in. Delivering situational awareness communicated from employee-worn devices in the field, Blackline Live provides all the tools necessary for monitoring personnel to manage a world-class emergency response.

Supporting gas detection programs, G7 devices equipped with gas sensors wirelessly communicate compliance and usage data to Blackline Live for automatic reporting, alleviating the need for manual data collection. From incident through to resolution all activities are time-stamped for future reporting, including notes that are used to document the response.

FEATURES



Alert management tools



Custom maps & floor plans



Custom alert profiles



Wireless device configuration



Evacuation management



Employee address book



Compliance dashboard



Reporting



DETAILED SPECIFICATION

Alert Management

Visual and audible indication of every alert
Location and identity of the employee plus nearby co-workers (map)
Document alert activities with notes
Resolve alerts as a system test, false alert or incident (with or without dispatch)

Real-time Location Map

Real-time safety status of every team member visible on the map page

Device Configuration Profiles

Devices configured wirelessly, over-the-air
Adjust alert functions and sensitivities from any internet connected device

Alert Profiles

Documented emergency response protocols easily customized for different environments or operating needs
Identify how monitoring personnel will escalate responses during an emergency
Notify supervisors by text and email when an alert occurs

Evacuation Management

Notify and direct a single worker or whole teams to designated muster points
Trigger a large scale evacuation using mass-notifications
Monitor the progress of evacuations on a map in real-time from start to finish

Reporting

Every event is time-stamped and recorded for reporting
Transparent emergency response-time reporting ensures superior performance standards

Employee Address Book

Store employee contact information for escalation
Employees are associated with devices and as notified contacts or emergency contacts within alert profiles

Alert History

View documented history of every alert
Review notes, messages to employees and voice recordings of calls to users

Requirements

Internet connection
Web browser: Safari, Chrome, Firefox, Internet Explorer, Blackberry Wi-Fi browser

Dashboard

View real-time equipment utilization
Address gas detection compliance gaps proactively

Gas Detection Compliance

Monitor fleet health, see which devices are healthy, have service pending or required
Schedule and monitor calibration and bump tests
Map gas events to identify potential hazards



SAFETY OPERATIONS CENTER

24/7 WORRY-FREE SAFETY MONITORING SERVICE

Blackline's safety monitoring and gas detection solutions deliver complete customization and 24/7 real-time safety monitoring for any application. Our Safety Operations Center provides organizations with expert safety monitoring and support, ensuring superior employee safety monitoring without sacrificing business productivity.

While some businesses are capable of self-monitoring, with designated control rooms or highly available supervisors, many are better supported by our in-house monitoring team. Blackline's Safety Operations Center (SOC) focuses exclusively on monitoring the well-being of employees' safety. Unlike traditional call centers that often split focus between telemarketing and IT support, our SOC is staffed with professionally-trained monitoring agents 365 days a year.

Our SOC utilizes the Blackline Live web portal, providing them with critical insights into emergency alerts in real-time. Delivering situational awareness communicated from employee-worn devices in the field, Blackline Live provides all the tools necessary for the SOC to manage a world-class emergency response.

Located at our headquarters in Calgary, Canada, the Safety Operations Center incorporates state-of-the-art infrastructure, including redundancy of power supply, communications and computing. We monitor over 7,500 devices world-wide, around-the-clock.

Monitoring personnel manage safety and gas detection alerts in real-time from receipt through to resolution by following the customer's tailored and documented emergency response protocol. Should an emergency take place, our Safety Operations Center is empowered to dispatch local emergency services across North America. Emergency responders are directed to the precise location of the employee in distress.

With 99.5% of alerts responded to in under a minute, Blackline's Safety Monitoring Center facilitates worry-free monitoring services and support, so employees can take comfort knowing their safety is always covered.

Overview

- Turn-key, around-the-clock emergency response management service
- Ideal for businesses without a control room or supervisors that are always available
- Supports all Blackline Safety monitoring device types
- Every alert managed according to your custom, documented response protocol
- Eases the burden on your team
- Our agents are always available and highly trained
- 99.5% of alerts responded to in less than a minute
- Ideal for both lone working and gas detection applications
- Agents can provide on-the-spot training for your employees
- Direct 9-1-1 call escalation to police and EMS in Canada and the United States



EMERGENCY RESPONSE MANAGEMENT

- Response management for injuries, health events, security breaches, gas leaks and evacuations
- Alerts efficiently managed from receipt through to resolution
- Monitoring over 7,500 client devices

CUSTOM EMERGENCY RESPONSE PROTOCOL

- Emergency responses are managed based on custom emergency response protocols
- Supervisors are notified by text and email while SOC manages the alert
- Alert escalation path to supervisors or local emergency services is clearly defined and managed
- Mapping of employee locations using GPS or Location Beacons ensures an efficient response

ALERT LIFE-CYCLE MANAGEMENT

- Transparent response-time reporting ensures superior performance standards
- Every event is time-stamped and recorded for reporting
- Highly qualified monitoring agents handle every alert

BLACKLINE LIVE WEB MONITORING PORTAL

- Provides personnel with leading safety monitoring tools
- Real-time safety status of every team member is visible on the map page
- Simple configuration of emergency protocols
- Type of alert is clearly displayed on a map with details like gas type and concentration

COMMUNICATING WITH EMPLOYEES

- Blackline Live address book provides employee contact information for escalation
- Agents can speak with the employee via optional two-way voice communication (Loner M6 and G7c monitoring devices)
- Monitoring team communicates with employees via messaging (G7c and G7x)
- Real-time translation of over 200 languages

EVACUATION MANAGEMENT

- Can notify and direct a single worker or whole teams to designated muster points
- Trigger a large scale evacuation using mass-notifications

- Monitor the progress of evacuations in real-time from start to finish

ENVIRONMENTAL GAS MONITORING

- The type and concentration of a gas exposure is relayed in real-time
- Empowered with situational awareness of an event, personnel can manage optimized emergency responses
- All gas readings are stored in Blackline Live
- High gas, TWA and STEL events trigger real-time alert management

HIGHLY-QUALIFIED MONITORING AGENTS

- Specialize in Blackline Safety employee-worn monitoring devices
- Can provide on-the-spot training to support your employees
- Agent training includes:
 - WHMIS
 - Standard first aid with CPR-C and AED
 - H2S Alive

INTRINSICALLY SAFE

LOCATION BEACON



RESPOND TO INDOOR INCIDENTS WITH PRECISION

Precise positioning empowers emergency response

In certain facilities, GPS signals alone may not provide sufficient positioning precision to locate employees during an emergency response. In such circumstances, every second counts and time wasted searching for someone could mean the difference between rescue and recovery.

Blackline Safety addresses this challenge with Location Beacons — compact wireless positioning transmitters. Beacons are installed where employees operate, from one per floor to one per room depending on facility size and operations. Beacon locations are then recorded on custom floor or site plans on a live map in Blackline Live, Blackline's safety monitoring software, so you always know exactly where your people are in context of their surroundings. Beacons are self-powered and affordable, taking only minutes to install without any calibration or triangulation.

Each beacon broadcasts a unique identity number that is received by Blackline Safety's monitoring devices, including G7c and G7x. When personnel are within proximity of beacons, monitoring devices store the nearby beacon identities and reports their location to Blackline Live.

Protect the safety of your workforce with Loner Beacon indoor location technology.

Features



Intrinsically safe



Precise location technology



Floor plans and location names



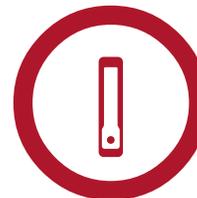
Long battery life



IP65 sealed



Easy setup



Compact design



Easy Location Beacon Battery Replacement

Alert Management

Custom floor and site plans are overlaid on top of the interactive Google map

DETAILED SPECIFICATION

Size & Weight

Size: 161 mm H x 40 mm W x 32 mm D (6.4" x 1.6" x 1.3")

Weight: 210 g (7.4 oz)

Mounting

Mounting bracket included

Mounting methods: screws, tie straps, adhesive

Mounting options: walls, wall corners, poles, etc.

Buttons & Indicator Lights

Single button for powering on/off plus configuration

Green LED for power indication and configuration

Red LED for low battery indication

Wireless Communication

Indoor positioning radio: 2.4 GHz to supported Loner safety monitoring devices

Location Technology

Low-power continuous beacon signal enables

Loner safety monitoring device proximity

detection

Beacon Signal Range

Four configurable signal range levels between 4.5 m and 36 m (15 ft and 120 ft) line of sight (less range when obstructed)

Notification Messages

Low Battery communicated by Loner or G7 devices

Power & Battery

Batteries: two C-cell alkaline (included)

Battery life: 5 years continuous operation at highest power setting, no wiring required

Environmental

Storage temperature: -40 to 65° C (-40 to 149° F)

Operating temperature: -20 to 55° C (-4 to 131° F)

Ingress Protection: IP65

Regulatory Compliance

Class I, Div 1, Groups A-D, T4

ATEX: CE II 1G, Ex ia IIC T4 Ga

IECEx: Ex ia IIC T4 Ga

RoHS

FCC ID: W77BCN

IC: 8255A-BCN

Device Requirements

Blackline Live Portal user account with activated, compatible Loner or G7 devices

Warranty

One year limited factory warranty

Wireless Coverage and Activated Service Plans

2.4 GHz operation regions: global

Service plan options: no service plan required

Blackline Live Web Application

Features Include: Beacon map editor, alarm banner, event history, device location mapping, device management, alert & notification settings and more
Comprehensive safety alert life cycle management: includes alert configuration profiles, safety protocol, and emergency contacts

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