

blacklinesafety

Solutions Guide

GAS DETECTION, SAFETY SERVICES,
AREA MONITORING AND MORE



OUR PURPOSE



DEAR PARTNERS IN SAFETY,

Over the last 15 years, Blackline has tirelessly pursued innovation at the forefront of connected safety. We showed the world how to meet the challenge of keeping lone workers safe and revolutionized the personal gas detection industry. With decades of experience, our team has already delivered some of the world's most advanced solutions in communications, location technology and gas detection.

Our purpose is to ensure every worker has the confidence to get the job done and return home safe.

At Blackline Safety, we strive to transform the industrial workplace through connected safety technology, increasing visibility of operations and allowing businesses around the world to keep their workforce safe.

We approach safety in a different way than most industrial companies, and we punch above our weight. We deliver the world's hardest-working range of direct-to-cloud connected personal and area gas detection and safety monitoring systems, powered by the best online compliance dashboard, automated analytics tools and data science services.

Blackline, at its core, is a service-oriented business, and we are passionate about the engineering, manufacturing and designing that make us the best at what we do. We stand behind our products, services and customers.

We look forward to working with you to make the world a safer place for teams in every industry.

Cody Slater, CEO & Chairman

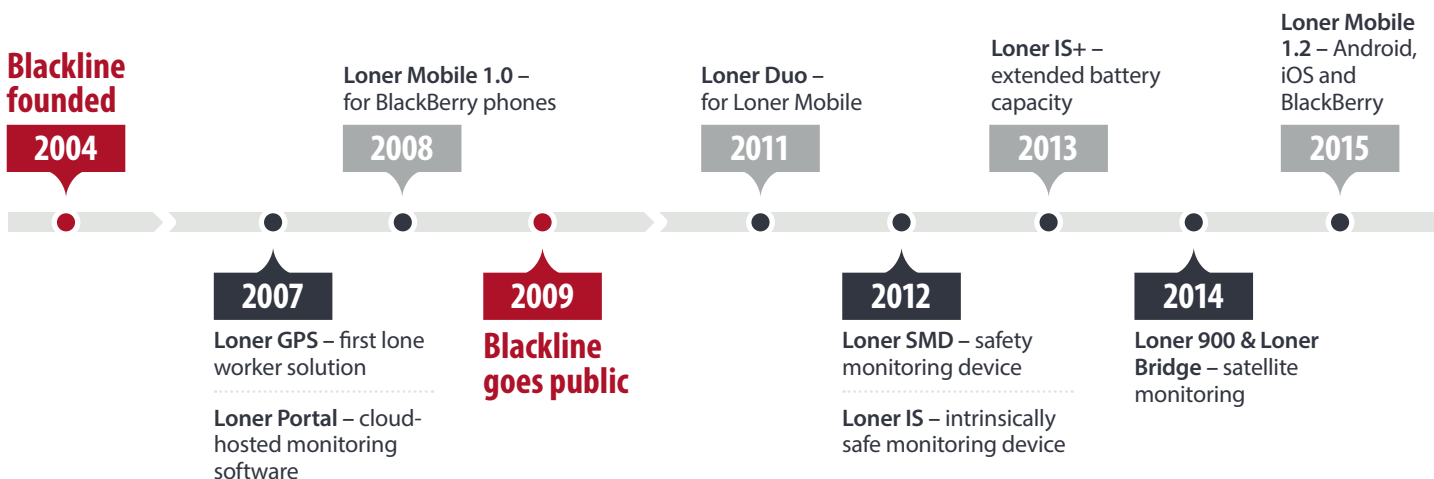


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■ G7c – First Cellular Safety Monitoring Device With Optional Gas Sensors

■ G7x & G7 Bridge – Remote Worker Monitoring

- G7 Dock – bump test, calibration, charge station
- Loner Mobile 1.7

2017

Pump cartridge for confined space entry and leak check applications

Blackline Vision data science division

Next-gen G7 EXO debuted on world tour

2019

2016

Loner M6/M6i – two-way voice calling

Blackline Live cloud-hosted portal launched

2018

Five Diamond Certification for in-house Safety Operations Center

Blackline Analytics reporting platform

PID gas sensor system for G7 wearables

Push-to-talk for G7 wearables

First-gen G7 EXO direct-to-cloud area monitor

2020

■ G7 EXO ships to market

■ New NevadaNano LEL-MPS sensor launched

SOLUTIONS PORTFOLIO

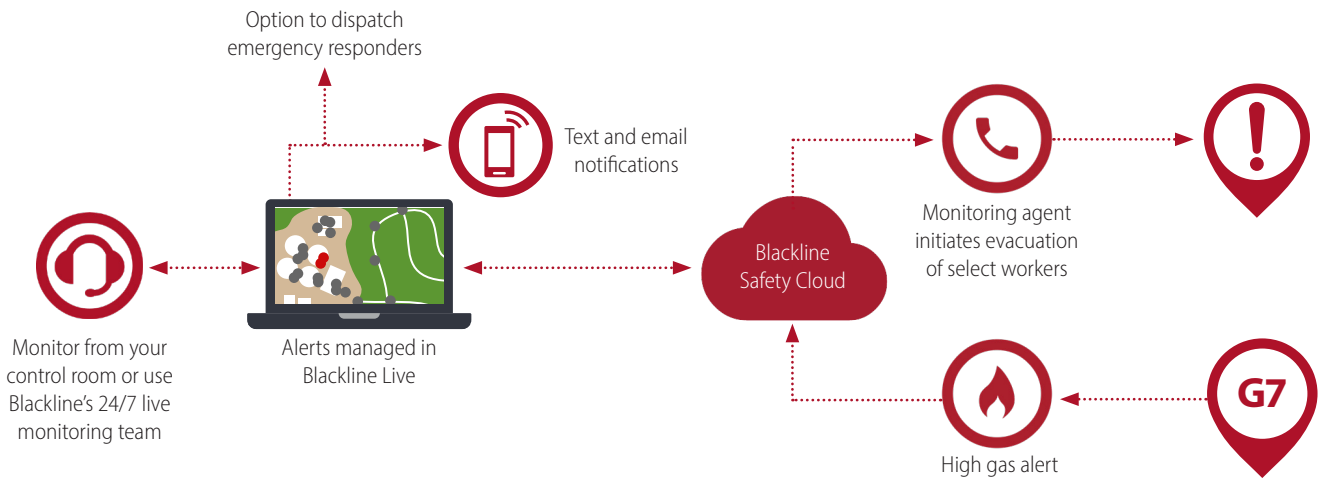
CONNECTIVITY IS STANDARD.

Blackline Safety transforms the industrial workplace through connected safety technology, increasing visibility of operations and allowing businesses around the world to keep their workforce safe. Unlike our competitors, connectivity is a standard — for every one of our safety solutions.

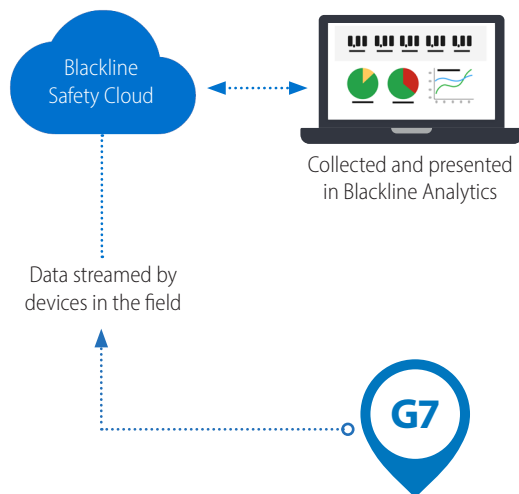
Our portfolio of G7 wearables, G7 EXO area monitoring systems and software solutions incorporate state-of-the-art technologies which address the shortcomings of other systems. Wireless connectivity links workers by integrating connectivity with live monitoring personnel and automating gas detection compliance and reporting processes, Blackline's solutions empower teams to monitor their environment for hazards and respond instantly should something happen. When it comes to safety, Blackline's G7 solutions can make the ultimate difference.



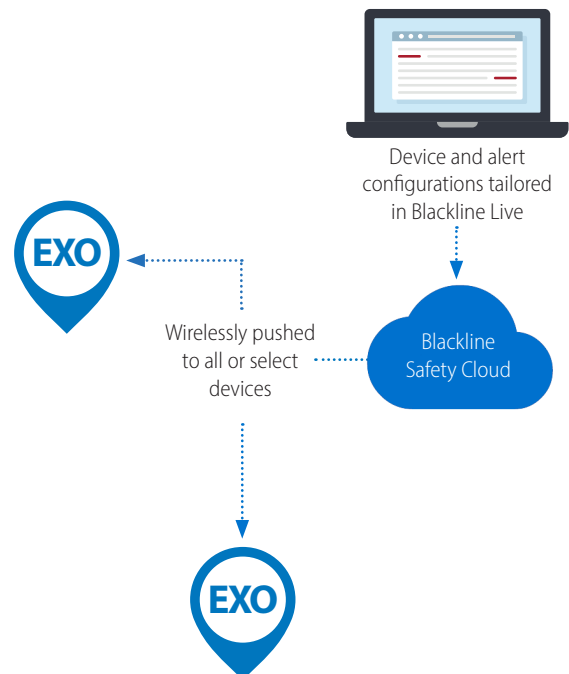
EMERGENCY RESPONSE MANAGEMENT



AUTOMATED DATA COLLECTION AND ANALYTICS



OVER-THE-AIR SYSTEM MANAGEMENT



SOLUTIONS PORTFOLIO

CONNECTED ECOSYSTEM

G7 connected safety monitor

G7 safety monitoring and gas detection wearable devices leverage integrated cellular and optional satellite connectivity to wirelessly link your team to real people, while automating data analytics and compliance reporting. Should a gas leak, injury or health event occur, G7 confidently accounts for everyone's well-being and whereabouts in real-time, so no call for help ever goes unanswered.

- Gas monitoring (diffusion and pump)
- Automated, configurable fall and no-motion detection
- Emergency SOS latch
- Scheduled automatic check-in process
- Zero network range limitations
- Two-way voice and messaging capability
- Optional push-to-talk functionality
- Over-the-air firmware and configuration updates
- Direct-to-cloud data streaming
- Assisted GPS for location tagged gas readings and alerts

Blackline Live

The Blackline Live portal allows businesses to monitor their teams while equipping them with leading alert management tools, compliance dashboard and comprehensive configuration management of fielded devices. Users can quickly view the safety status of any team member from any internet connected device.

- SOC 2 compliant
- Real-time alert management
- Cloud-hosted data storage
- Centralized device management
- Alert profile and device configuration tools
- Real-time gas detection compliance dashboard
- Tailored emergency response protocols

G7 EXO area monitor

G7 EXO is the world's first direct-to-cloud area monitor that delivers ultimate control of, and visibility into, a business's entire workforce and facility. With integrated cellular and optional satellite connectivity, G7 EXO automatically connects directly to the Blackline Safety Cloud and works alongside employee-worn G7 devices, streaming critical insights that create a more engaged, safer workforce.

- 100+ day battery life
- Direct-to-cloud data streaming
- No network limitations to the number of devices that can communicate with one another
- Emergency SOS latch
- Manage G7 EXO area monitors alongside G7 monitors
- Diffusion and optional four-channel pump gas monitoring
- Optional push-to-talk functionality
- Instant device-to-device alert notifications

Blackline Analytics

Keep teams safe and maximize productivity. Built directly into the Blackline Live portal, Blackline Analytics delivers a series of interactive reports that present much of the information businesses need to keep their teams safe and maximize productivity. All data is uploaded directly into the platform to help users derive important insights about their business, measure KPIs, and power informed decision making.

Blackline Essentials reports deliver everything you need for a superior data-driven safety program. Want more? Go further with our premium analytics packages.

- Blackline Essentials: 12 reports, included with all devices*
- Helps measure real-world performance against KPIs
- Interactive dashboards allow users to drill further into data and investigate specific information

**Premium options in development. Reach out to your Blackline Safety representative for more information*



Want more from your data? For customers looking for more highly-customized options to meet their business needs, Blackline Vision offers a variety of customized dashboards, workshops, data delivery and data analytics tools. See [page 14](#) for more.

BLACKLINE SERVICES

Core services are included with every service plan, while optional services can be added-on to tailor system functionality and accommodate every client scenario.



G7 EXO and G7 Devices

Connectivity

Blackline Live

Cartridges and gas sensors



CORE SERVICES

Connectivity

G7 wearable and G7 EXO area monitoring devices' integrated cellular and optional satellite connectivity is the critical link between devices in the field and the Blackline Safety Cloud. Service plans deliver unlimited access to multiple cellular carriers, with the option to also connect to Iridium's unparalleled global satellite network. All data is securely transmitted for compliance reporting and data analytics, and configurations and firmware updates are pushed wirelessly without taking devices out of the field.

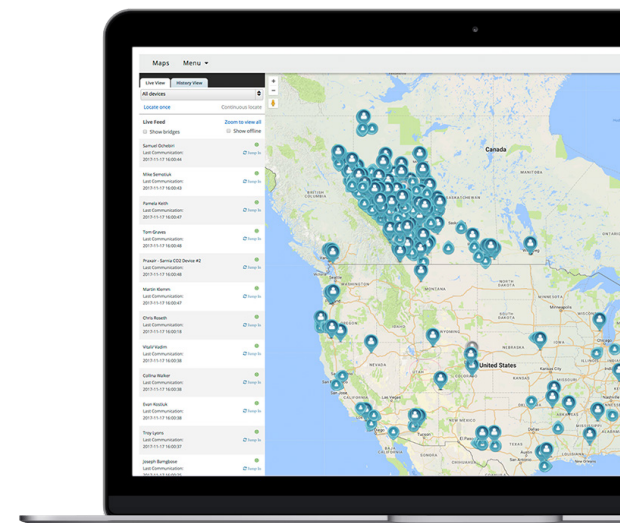


Blackline Live portal

Blackline Live is a state-of-the-art web portal that's securely accessible from any internet-connected computer or mobile device. Multiple members of an organization can be invited with specific user access controls and permissions, for no additional cost. Blackline Live users will have only the level of access they require to perform their duties. Tailor permissions for each account user, to provide only the necessary level of access to individuals or groups. Our cloud-hosted servers deliver unlimited data storage, allowing you to dive deep into your data to investigate and optimize operations.

- Wireless device configuration
- Automated compliance dashboard
- Blackline Analytics, data management and reporting

The safety status of every team member is visible at a glance on a live map in Blackline Live. Easily identify where an employee is, and view the type and status of an alert the moment it happens.



BLACKLINE SERVICES

CORE SERVICES *(continued)*

Compliance dashboard

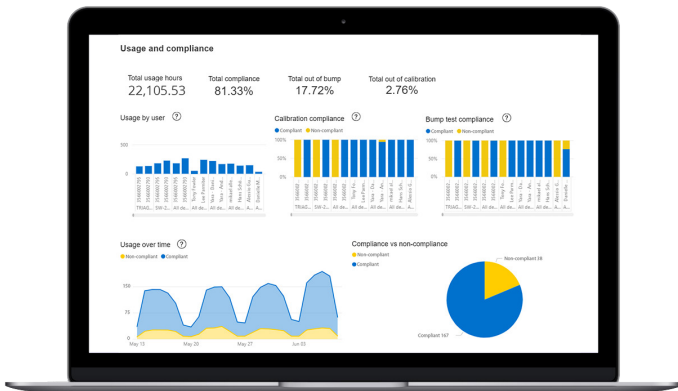
Accessed in Blackline Live, the live compliance dashboard delivers a real-world view of G7 and G7 EXO fleet compliance. G7 and G7 EXO devices automatically record all gas detection bump test and calibration data and upload it to Blackline Live. Compliance data is simply and clearly displayed in a series of charts and graphs, indicating key insights that can be used to optimize gas detection compliance programs.



Blackline Analytics Essentials

Blackline Analytics Essentials delivers a complete view of a fleet's operations. Easily identify how and where equipment is being used, where hazards are being encountered and even determine which devices are performing well and which can be leveraged better.

Every bump test, calibration, gas exposure and usage session is automatically recorded for hassle-free reporting. By leveraging out-of-the-box integrated connectivity and automated device log collection, G7 and G7 EXO build a body of data today, providing measurable performance for tomorrow.



ESSENTIALS REPORTS

- Events
- Events map
- Alerts
- Gas readings
- LEL-MPS readings
- Close contact
- Usage and compliance
- Bump tests/calibrations
- Devices and cartridges
- Asset utilization reports
- Device logs
- Device assignment history

DID YOU KNOW?

When you choose Blackline Safety solutions, you're also gaining a number of teams committed to going the extra mile to make sure you are well-supported at all times. Whether it's through hands-on training, intuitive documentation or service calls, you will have the tools and support you need to realize your goals.

CORE SERVICES *(continued)*

Cartridge and gas sensor service

Choose from a Standard (no-gas), Single-gas Diffusion, Multi-gas Diffusion and Multi-gas Pump Cartridge, and then from a range of sensors to address the demands of your environment.

STANDARD SENSORS

- Hydrogen sulfide (H₂S)
- High-range hydrogen sulfide (H₂S)
- Combustible (LEL-MPS)
- Combustible (LEL-infrared)
- Oxygen (O₂)
- Carbon monoxide (CO)
- High-range carbon monoxide (CO)
- Hydrogen-resistant (CO-H)
- Sulfur dioxide (SO₂)

PREMIUM SENSORS

- Ammonia (NH₃)
- High-range ammonia (NH₃)
- Chlorine (Cl₂)
- Chlorine dioxide (ClO₂)
- Carbon dioxide (CO₂)
- Hydrogen cyanide (HCN)
- Hydrogen fluoride (HF)
- Ozone (O₃)
- Nitrogen dioxide (NO₂)
- Photoionization (PID) ppm
- CO+H₂S (COSH)



G7 and G7 EXO SOS latch

At its core, the newly-patented SOS latch featured on G7 wearable and G7 EXO devices can be configured to send a notification to a designated contact via text message or email. For customers looking for additional functionality, with the Protect and Respond service options, the SOS latch can be configured to connect users to a live monitoring team.

BLACKLINE SERVICES



OPTIONAL SERVICES

Allow incidents to be addressed as they happen. G7 wearables and G7 EXO systems are the only solutions that can confidently identify the real-time whereabouts and wellbeing of workers in the field. Optional services leverage G7’s connectivity to link employees with monitoring personnel.

Real-time alerts

G7 and G7 EXO devices can be configured to detect incidents and call for help as they happen, notifying live monitoring personnel who can initialize an emergency response. Real-time alerts include the manual SOS latch and automated gas exposure, fall, no-motion and missed check-ins.

Two-way voice calling

In the event of an emergency, G7c and G7 EXO users can instantly connect with monitoring personnel via the built-in two-way speakerphone. Two-way text messaging is available as a standard service with all real-time service plans for G7c, G7x and G7 EXO monitors.

Blackline Live monitoring

Delivering professional safety monitoring and emergency response management for teams in the field, Blackline’s in-house Safety Operations Center (SOC) focuses on monitoring the wellbeing of employees. SOC personnel manage all alerts in real-time from receipt to resolution following tailored and documented emergency response protocols.

Push-to-talk

G7c and G7 EXO devices feature push-to-talk (PTT) functionality. Push-to-talk allows G7c and G7 EXO units to function similarly to a walkie-talkie — device users in the same organization and on the same channel are able to have two-way conversations with one another in real-time. Communicate with up to 250 users on the same channel, with 100 channels for each Blackline Live organization account.

SERVICE PLAN OPTIONS

	System access	Self-monitored	Blackline Live monitored
Configure settings over-the-air	•	•	•
Real-time compliance dashboard	•	•	•
Live location data streaming	•	•	•
Powerful analytics and reporting interface	•	•	•
Cloud-based platform with 99.9% uptime	•	•	•
Custom emergency response protocols		•	•
Fall detection, no-motion, check-in system		•	•
Mass notifications and two-way messaging		•	•
Base Blackline Analytics		•	•
Trained responder handling alerts			•
24/7, year round monitoring coverage			•
99.5% response time in under 60 seconds			•

BLACKLINE PROFESSIONAL SERVICES

Blackline's professional services empower simple and smooth deployments, ensuring solutions are tailored to accommodate the needs of every customer. For your order to be fulfilled successfully, your purchase order must include one of the following:

ACTIVATION AND PROFESSIONAL ONBOARDING

For new customers or a new site, a Blackline Implementation Coordinator works to manage change, ensure a seamless transition and deliver additional training as needed.

ADDING DEVICES TO EXISTING ACCOUNTS

For existing customers or distribution partners, an Implementation Coordinator works to seamlessly integrate more devices into an existing Blackline Live organization account.

ADDING STOCK DEVICES TO ACCOUNTS

For distribution partners adding Blackline devices to their product stock, Implementation Coordinators help ensure service is appropriately configured for back-stocked devices.

DEMO ACCOUNT ONBOARDING

For distributor partner sales teams, Blackline personnel organize the demo devices in Blackline Live and facilitate employee training.

RENTAL CUSTOMER ONBOARDING

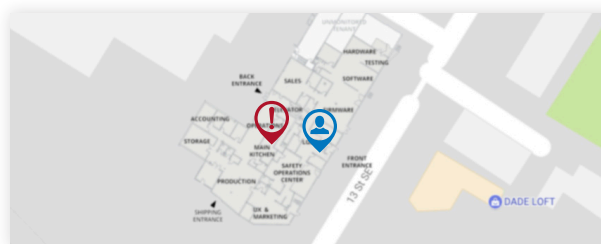
For distribution partners needing full training and account set-up for rental devices, or for those adding devices to their rental fleet.

SECURITY AND AUTHORIZATION

Convenient single sign-on (SSO) option utilizing Security Assertion Markup Language (SAML) 2.0. Further, if your Identity Provider (IDP) offers multi-factor authentication (MFA), then your employees can also use the secure MFA to authenticate with Blackline Live. And, you can control their access to our services without needing to go into Blackline Live.

CUSTOM FLOOR AND SITE PLANS

Implementation Coordinators can add custom floor and site plans into Blackline Live to provide more comprehensive situational awareness. Floor plans work in conjunction with Location Beacons to provide a detailed view of employee locations in the context of their surroundings.



PREMIUM ANALYTICS

GET THE MOST FROM YOUR DATA

Go beyond the basics. Premium Blackline Analytics drive business insights through descriptive visualizations, predictive reporting and tools to empower your decision making. Get equipped with the resources, infrastructure and strategies you need to see relationships within your data, and best leverage it throughout your day-to-day business activities.

Usage reporting

Identify how, when and where devices are being used to understand worker behaviors and optimize asset utilization and scheduling

Data integration

Combine your various data sources into a connected worksite ecosystem, empowering you to identify correlations between sources and investigate patterns

Data delivery

Receive reports in at intervals and formats best suited to your organization to facilitate faster and easier sharing of insights across all levels and locations

Data driven safety management

Integrate your real-time safety data in your HSE software, including fugitive gas emission exposures, with other sources such as location data to identify cause-and-effect occurrences

Powered by Blackline Vision

Blackline Vision takes your data analytics to the next level, delivering the right support and resources leading businesses need to save time and move away from reactive to proactive HSE practices. With a proven track record of helping enterprises achieve the next level in their digital transformation, we are industrial safety veterans who deliver expert knowledge and innovative tools that address critical goals. Let us take the burden off of your teams' limited time and resources — ultimately helping you go from reactive to proactive safety and productivity.

- 160 billion industrial workforce movement data points generated
- 7 billion gas readings processed by leading data science algorithms, producing insights for industrial hygienists
- 80% improvement in bump test and calibration compliance achieved with improved visibility
- 15 billion safety events plotted to help HSE professionals drive change and eliminate worksite risks
- 40+ continuous industrial site projects executed with industry leaders around the world, analyzing over 5.5 billion man-hours



SUCCESS SERVICE PLANS

Blackline Vision provides value to businesses beyond the visualizations and analytics related to devices in the field. Defining the level of support you have access to from our Blackline Vision team throughout our relationship, our success plans can be added to your account at any time.

Base —

Our Explore service provides uncomplicated access to your historical device logs such as alerts, events and gas reading data. We'll gather the information for you at no additional cost and support your incident investigation needs.

- Included with all Blackline Safety device purchases

Standard —

Saving you time and ensuring quality reporting, our Standard service allows you to move away from reactive, compliance-based standards towards optimized, proactive safety and productivity programs, with quarterly support to help you reach your goals.

- \$350 for 10 hours of general analyst support/quarter
- Billed monthly

Signature —

For larger customers or for those looking for more customized solutions, with our Signature service a dedicated Vision team is at your disposal, on-demand, for all your reporting and analytics needs. Partnering together, your solutions will be managed and maintained at a higher level to save you extra time while maximizing your outputs.

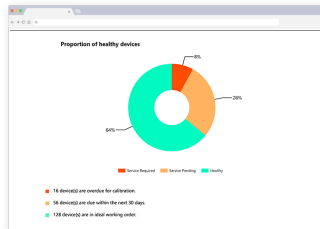
- Account managers will work with you to prioritize and deliver solutions tailored to your organization
- Retainer pricing varies on scope and complexity. Reach out to your Blackline Safety representative for more details.
- \$950 for 10 hours of dedicated analyst support/month
- Billed monthly

	Base	Standard	Signature
Online technical support	●	●	●
Blackline Analytics training	●	●	●
Incident investigation support	●	●	●
Digital support, including video conferencing		●	●
General analyst support		●	●
Complete, on-demand team of Vision data experts			●

PREMIUM ANALYTICS

ANALYTICS PRODUCTS

Essentials



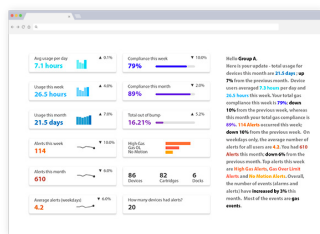
HSE DATA CONTINUITY

When transitioning to Blackline solutions, such as to G7s or G7 EXOs, we ensure you don't miss a beat. By ingesting the data from your former solutions and presenting it alongside your new Blackline-generated data, you start gaining useable insights from day one.

- Included with all purchases of G7 and G7 EXO Blackline Safety solutions
- Covers a one-time ingestion and porting over of other HSE data sources
- Request at time of onboarding

For the complete list of Blackline Analytics Essentials, see [page 10](#)

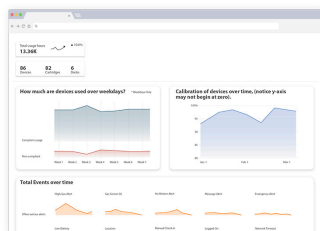
Essentials Plus



AUTOMATED REPORTS (FOR EMAIL)

Designed to help you communicate clearly across different levels and locations within your business, customized reports take your own data and present it to you at intervals and in formats that work best for your organization.

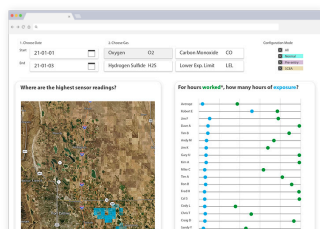
- Monthly \$75 fee per customized report, in a PDF or excel format
- Uncapped recipients of each report by your organization
- Discounts available for orders of three or more reports
- Billed annually



CUSTOM REPORTING

Take your data one step further with highly-customizable visualizations, delivering the information you need in the format you want. Location-tagged alerts, usage, compliance and event information is automatically collected, collated and presented to you in bespoke, on-demand reports that can be refined using over 50 tailored KPIs — the level of detail is up to you.

- Starts at \$145/month, billed annually on a subscription basis, for three or fewer reports
- Pricing depends on scale and complexity



INDUSTRIAL HYGIENE DATA ANALYSIS

Leverage the full suite of our data science, connected wearables and potential integrations with other information systems to help you evaluate task-based risks to employee health. Measure the mass of gas entering the body over time, measure LEL explosion hazard risk, correlate SCBA information with gas exposure data to understand PPE usage and more. For all of your activities and KPIs, we help you determine appropriate course of action, from additional training to enrollment in a health monitoring programs.

- Starts at \$550/month, billed annually
- Pricing depends on scale and complexity

Enterprise

BLACKLINE ANALYTICS FOR ENTERPRISE

Connected safety, people tracking and asset tracking technologies. These components come together to deliver complete situational awareness, supporting real-time decision-making to help you control your business's outcomes.

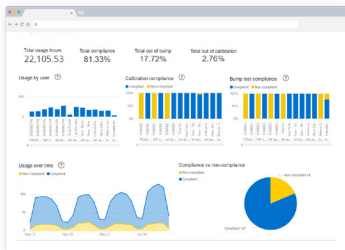
- Pricing starts and \$3000/month, with a formal quote provided once statement of work has been defined
- Project begins with a stakeholder workshop, including stakeholders from your organization and Blackline Vision specialists
- Dedicated analytics instance for optimal, uninterrupted performance
- Fully customized to suit your needs

COMMON OPERATING PICTURE

Using data integration and data delivery tools, the team builds a common operating picture, delivering a complete view of your operations, including safety and business information. Combining disparate data sources, including safety events, employee schedules and weather data, the team identifies for correlations and relationships and delivers insights you can act upon.

You have the option to host the common operating picture hosted within your domain or within Blackline Vision's domain, depending on your preferences. For example, the entirety of Blackline Analytics can be delivered within your in-house analytics environment, such as PowerBI.

- Pricing depends on scale and complexity
- Reach out to your Blackline Safety representative for more information



The first step

Stakeholder workshops provide the opportunity for us to meet with you, to understand your data wants and needs. Your health, safety, operations and IT stakeholders will work with Blackline's team to describe the challenges they encounter, which metrics they track, which metrics they wished they tracked, plus the data sources they have available to them. This gives Blackline an opportunity to consult and conduct an open discussion, which we will use to craft a unique proposal with recommendations for addressing your particular set of challenges.

PREMIUM ANALYTICS

DIGITAL WORKSITE SERVICES

Make order out of chaos, drive asset utilization up and drive idle time down. Our digital worksite services provide the customized services and systems you need to help take your short- and long-term projects to the next level. By building a cohesive analytics environment tailored to your business and projects, you gain simple access to insights and patterns previously hidden by piles of unused data.

INTEGRATION

Leveraging data collected by your existing solutions, we connect the disparate pieces together in a cohesive ecosystem that provides you in-the-moment insights into your entire operation. Easily compare areas, groups or individuals against one another to identify aspects that aren't properly aligning with your schedules or objectives, allowing you to take corrective measures before more time or money is wasted.

VISIBILITY

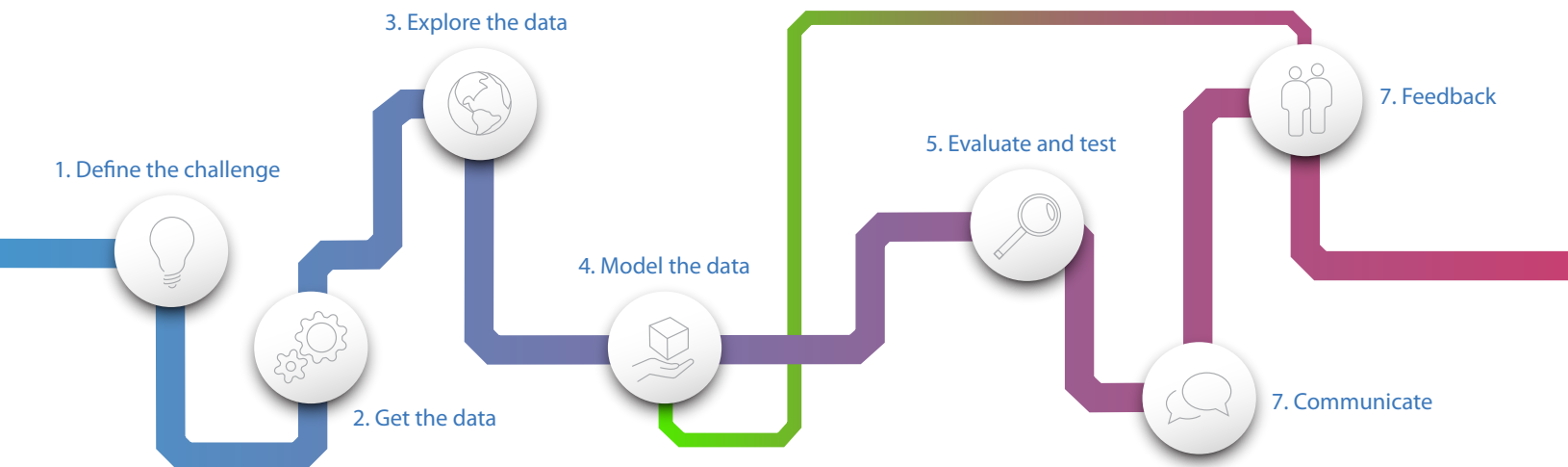
Get the information you need to know, when and where you need to know it. By eliminating the use of historical data for project status updates, which provides only a snapshot of past activities, you are empowered by real-time visibility into your teams activities and asset utilization. This approach takes you from being reactive to proactive, giving you the opportunity to make decisions that can impact your project's timelines and schedules as the project unfolds.

BASELINE

- Pricing starts at \$15,000
- Project duration of 6+ weeks
- We will configure analytics for a selected site and provide the baseline to measure future improvements
- An output, a findings report provides an itemized list, backed by data/charts/maps, for you to use when identifying operational optimizations

HEALTH CHECKS

- Pricing starts at \$10,000
- 4+ weeks after initial Baseline project
- We will check on your progress against previous recommendations and look for new opportunities
- An output, a findings report will capture results of your ongoing initiatives and add new opportunities to the itemized list



WALKING THE WALK — CASE STUDY

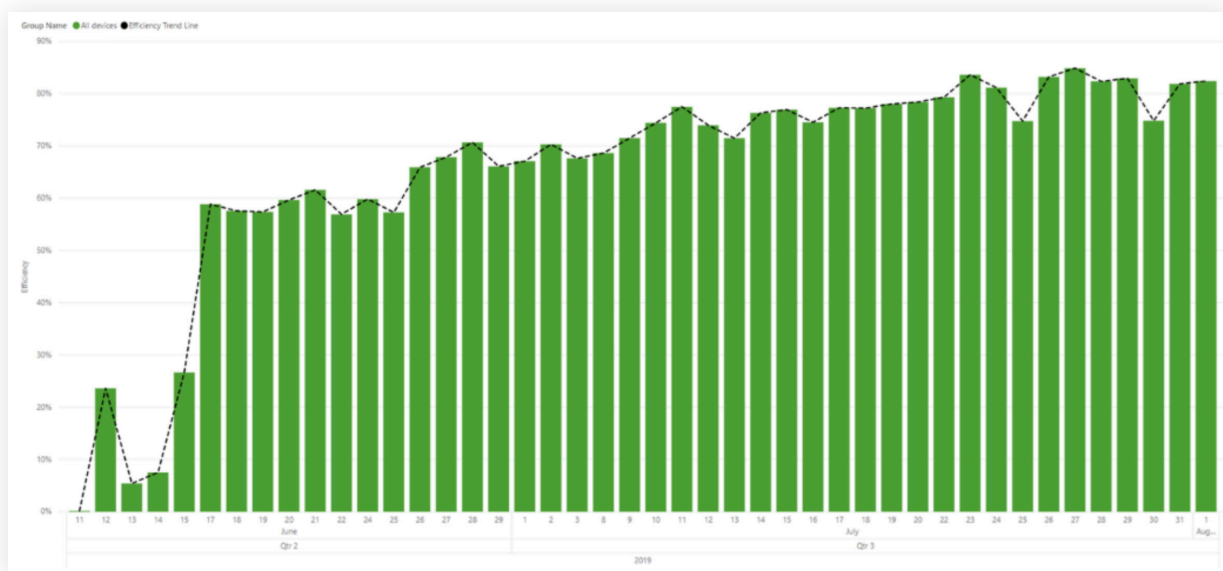
The Blackline Vision team provided the following observations and recommendations to a customer after analyzing their various data sources.

OBSERVATIONS:

- Pointed out some sub-contractor groups were abnormally inefficient
- Identified some contractors using the wrong bus routes early on

RECOMMENDATIONS:

- Re-allocated some sub-contractor groups that were abnormally inefficient
- Added new muster zones
- Added two additional smoke pits that are closer to work areas
- Instituted 12 hour reports to compare day shift and night shift
- Adjusted evacuation protocols based on travel times
- Duplicated some primary day shift processes for the night shift to close a shift inefficiency gap
- Changed process for assigning and handing out G7 devices to improve efficiency
- Quantified the efficiency of every tool crib
- Optimized cool-down station placement when there are heat warnings in the area
- Encouraged the client to not use the on-site lunch building, given the expansion of their facility
- Displayed ramp-up/ramp-down of users and effective work hours
- Recommended new pathways from specific zones



Following the implementation of the recommendations, efficiency increased across all device users and operations

TECHNOLOGY



LAYERS OF SAFETY

Blackline does not rely on any one particular alert or constant connectivity to deliver safety to the end user. Instead, we allow the organization to use many features in combination, providing the user numerous layers of safety.

Manual alerts

Triggered by the user to indicate an immediate need for assistance.

SOS LATCH

The SOS latch is an easy and obvious means of getting help when needed — the user pulls it to request help.

SILENT ALERT

If configured, users can silently call for help by pressing the red latch for three seconds. This can be used in situations where a user may not want to draw attention to themselves but knows he/she needs help.

Automatic incident detection

G7 solutions can be configured to automatically detect threats and call for help, even if the worker can't.

TRUE FALL DETECTION®

Blackline uses a combination of accelerometers and gyroscopes to detect three-dimensional acceleration and rotation of a body in motion. Using a patent pending algorithm, Blackline can routinely detect almost all real falls while having a very low false alarm rate. Managers can configure their fall detection sensitivity to accommodate work activities.

NO-MOTION (MAN DOWN) DETECTION

Blackline accelerometers to detect when a user is no longer moving as expected. Depending on the type of work being performed, the sensitivity and no-motion timer count-down can be adjusted to avoid false alarms.

GAS DETECTION

Blackline offers several different gas alarms to notify the user of changes in the environment or to get the user help in the event of a serious exposure. Included real-time alerts include low-gas, high-gas, STEL, TWA, over-limit and under-limit alerts.

Time-triggered safety

Should someone have a safety event not covered by manual alerts, automatic incident detection features, or if a safety event were to occur outside of connectivity, time-triggered safety features make sure they're never left without help.

SERVER-SIDE CHECK-IN

G7 features a check-in timer that is synchronized with the Blackline Safety Cloud. If a user fails to check in, the Blackline cloud will notify the live monitoring team, even if the user has left wireless coverage, their G7 battery drained or if G7 is broken.

SERVER-SIDE NETWORK TIMEOUT

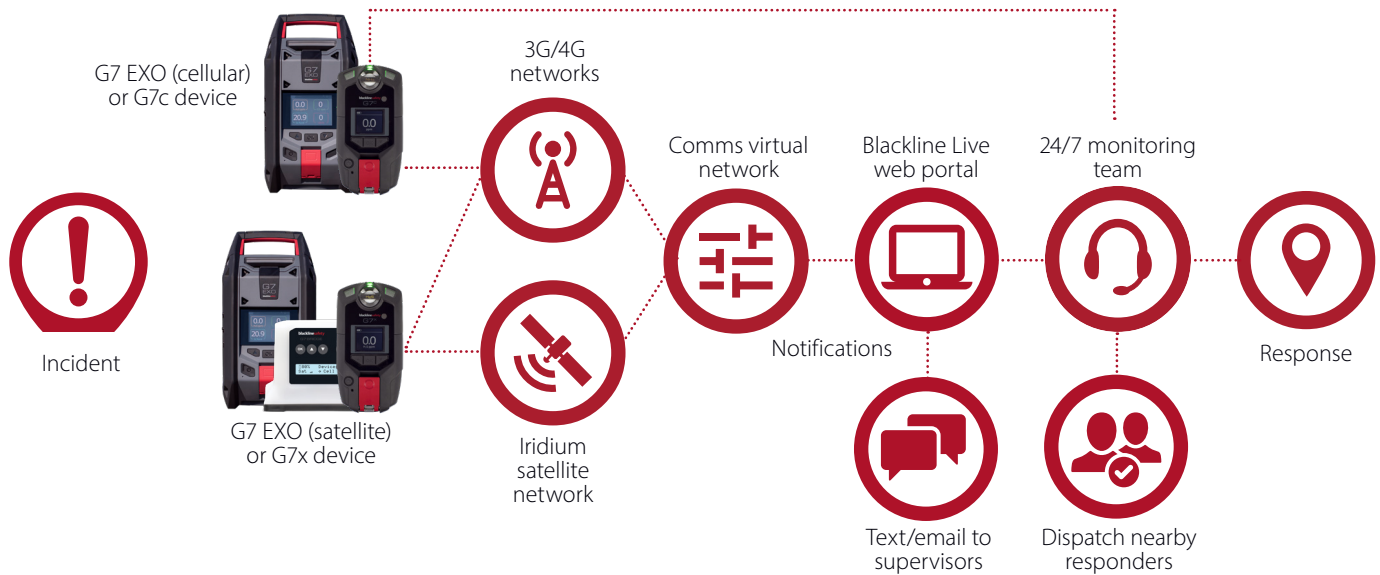
As a final layer, we can configure G7 systems to trigger a network timeout alert if the G7 wearable unexpectedly stops communicating with the Blackline Safety Cloud. This is typically used in cases where users do not want to have regular check-ins, but may be working in low connectivity areas.



SYSTEM ARCHITECTURE

G7 devices communicate with the Blackline Safety Cloud using either 3G, 4G or Iridium satellite networks. Safety monitoring personnel and management teams leverage the Blackline Live web portal for configuration, emergency response management and reporting.

TWO-WAY VOICE CALLING AND USER MESSAGING



CONNECTIVITY LIGHT



On start up, G7 or G7 EXO's green connectivity light will flash while searching for an available mobile network — once a connection has been established to the Blackline Safety Cloud, G7/G7 EXO's log on is confirmed and the green light changes to solid. The connectivity light is the employee's confirmation that they are connected to the Blackline Safety Network. Should an interruption occur in communication with the network, the green light will begin to flash. G7 systems can also be configured to notify the user of this with an optional lost-link alarm.

TECHNOLOGY



WIRELESS COMMUNICATIONS

Communication protocol

G7 systems feature a custom bi-directional, asynchronous packet communications with the Blackline Safety Cloud through cellular and satellite wireless back haul networks. This protocol facilitates always-connected communication with mobile-originated or mobile-terminated packets. All critical packets feature server and device-side acknowledgment, supporting resending as may be required. Packets that are generated by the employee device that cannot be communicated due to a communications interruption are buffered and transmitted when the server connection is re-established.

3G/4G WIRELESS NETWORK

- Delivers 3G/4G communications in over 100 countries with coverage on over 200 networks
- G7c features built-in 3G/4G wireless voice communications
- Works out of the box, automatically connecting with supported wireless networks
- For 3G UMTS networks, the GSMA recommends mobile network operators adopt the MILENAGE authentication and key generation algorithm, the Kasumi confidentiality and integrity encryption algorithms and UTAK authentication

Employee-worn Blackline device packet communication is securely routed through the local 3G/4G mobile network to Blackline's international telecom partner network via a secured VPN or similar connection. The Blackline Safety Cloud is connected to the international telecom partner network through an encrypted IPsec VPN.

G7 VOICE COMMUNICATIONS

For G7c and G7 EXO devices that are subscribed to a voice-enabled service plan, safety monitoring personnel are able to call a worker's device, which will auto-answer. Voice-calling is enabled through both a public switched telephone network or mobile network.

SATELLITE NETWORK

- Blackline partnered with Iridium Communications for satellite connectivity
- Delivers connectivity in remote locations beyond 3G/4G coverage
- G7x devices feature an internal 900 MHz frequency-hopping spread spectrum radio that communicates with G7 Bridge portable satellite base station
- G7 Bridge manages the satellite/cellular link between G7x and the Blackline Safety Cloud

900 MHz radio communication provides a real-world operating range of up to 2 km (1.2 miles), supporting a broad range of scenarios including personnel working within facilities.

MOBILE MESSAGING, SMS AND EMAIL

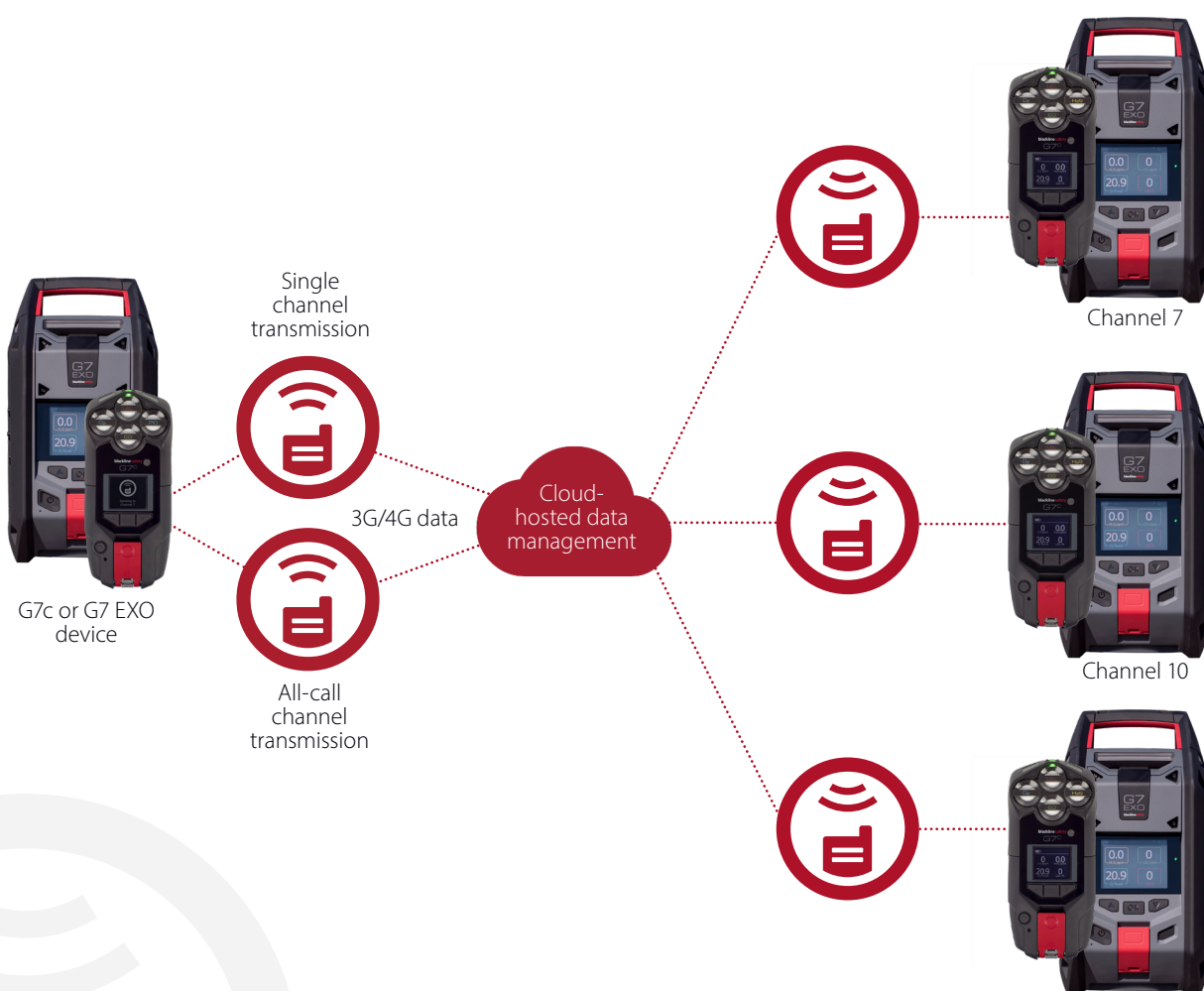
Alert profiles can be configured in Blackline Live to send a text message or email if a certain alert is received to specified individuals, such as supervisors.



PUSH-TO-TALK

G7c and G7 EXO devices feature optional push-to-talk (PTT) capability. Push-to-talk works out of the box and allows Blackline devices to function similarly to a two-way radio. G7c device users and EXOs in the same organization and on the same channel are able to have two-way conversations with one another in real time. Since G7c and G7 EXO leverage cellular connectivity to transmit messages, unlike traditional radios, there is no limited transmission range. G7c and G7 EXO with PTT are intrinsically safe, and also reduce the number of devices an employee needs to wear or have on site and maintain.

PTT is an optional feature that can be added onto a service plan. Devices that have a PTT-enabled service plan have a “PTT Channel” option in the device menu. Each organization has up to 100 user-selectable channels — only devices on the same channel are able to communicate, with the exception of all call. The all call channel allows a message to be sent to all PTT devices in an organization — this channel is recommended for safety supervisors or managers. Devices on the receive only channel can only hear transmissions, and cannot transmit to other devices.



TECHNOLOGY

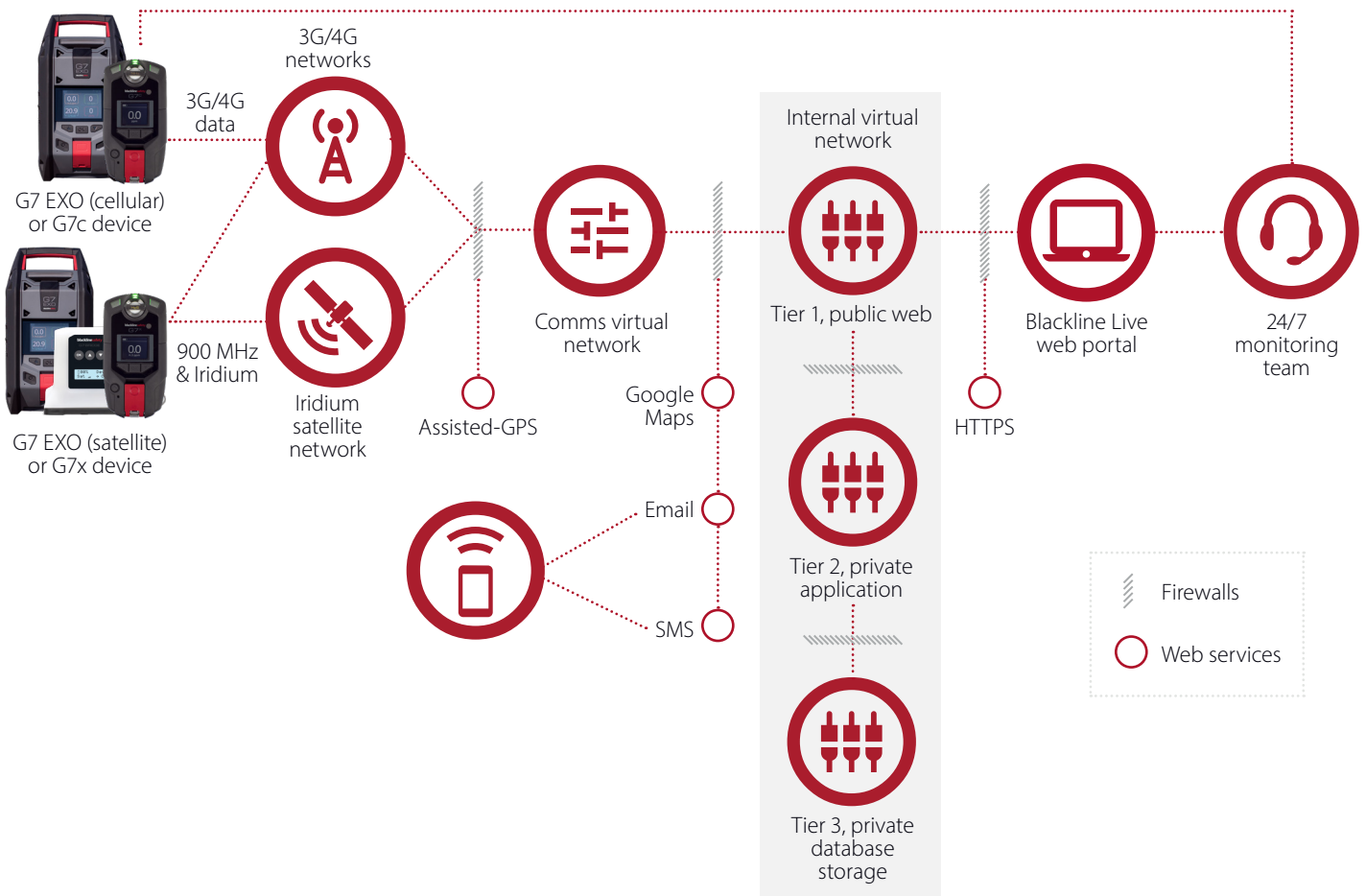
THE BLACKLINE SAFETY CLOUD

The Blackline Safety Cloud is a safety Internet of Things (IoT) platform hosted by Amazon Web Services (AWS), a leading cloud hosting service provider. Businesses including 3M, BP, Adobe, Canon, GE, Alcatel Lucent, BMW, Hitachi, NASA, NASDAQ, National Bank of Canada, Philips, Samsung, SAP, Siemens and many others leverage AWS for hosting, virtualization, data backup and other online services. Blackline uses modern cloud-based infrastructure technologies to build, maintain and innovate new software features that support our G7 employee wearables and G7 EXO area monitors.

Comprised of several layers, the overall Blackline ecosystem includes connected devices, communications networks, cloud-hosted infrastructure, user interfaces and live monitoring personnel. Blackline has separated its device communications in a standalone *comms virtual network*, fire-walling it from its application and data storage virtual network. This approach provides Blackline with the advantage of having detailed control over device communications traffic.

A second *internal virtual network* comprises our core safety monitoring application and infrastructure within AWS. This network communicates with fielded employee-worn devices through the comms network with a fire-walled separation layer in between. The internal virtual network incorporates three layers that are each fire-walled from the others.

PSTN AND MOBILE VOICE CALLING



USER DATA

User-device assignment

G7c, G7x and G7 Bridge devices can be assigned to users, linking them to the Blackline Safety Cloud. Employee contact information is stored in Blackline Live and available to monitoring personnel, supporting live emergency response and evacuation management. Equipment use reports are populated with a user-centric approach that accommodates team members who use multiple devices during the reporting period.

DEVICE DATA

Blackline devices originate a selection of data that is keyed by the device unit ID and cartridge ID. IoT service subscriptions are related to devices through the device unit ID.

- Date and time (leverages 3G/4G network, GPS and Blackline Safety Cloud timing)
- GPS location and status information (number of satellites used in location computation, etc.)
- Closest Location Beacon ID
- Environmental gas readings
- Employee check-in requests
- Device status (hardware errors, sensor errors, calibration status, bump test status, etc.)
- Alarm and pending alarm notifications
- Alert notifications to supervisors and managers
- Peak readings after a gas detection alert
- Gas detection calibration and bump test results
- Messages to and from monitoring personnel
- Voice calling via two-way speakerphone built into G7c
- General device information (log on type, log off type, signal strength, battery level, etc.)

USER-GENERATED ACCOUNT DATA

- Organization name and address
- Employee address book containing employee names, phone numbers, email addresses
- Documented emergency response protocol
- Location Beacon names, locations, addresses
- Floor plan layers
- Assignment of devices to employee contact cards stored within the address book
- G7 device configuration profiles (stores feature settings and thresholds)
- Alert profiles that define alert logic based upon G7 device settings, plus notification subscribers from the employee address book
- History of managed alerts and associated timestamps, locations, notations
- Voice calls recorded through Twilio service
- Safety Operations Center-recorded voice calls are downloaded from Ring Central and uploaded to AWS storage
- Two-way messaging

SOFTWARE DEVELOPMENT APIS

Blackline offers two software development APIs — the first pushes individual connected device alerts to client infrastructure while a second API provides a REST interface with range of endpoints for managing alerts from receipt to resolution.

Push API asynchronously delivers alert messages to designated software infrastructure through an HTTPS POST to a target end-point uniform resource indicator (URI). Push API response expects a 200-level HTTP response and an md5 hash of the POST data. Monitoring service is in place should this service fail to achieve the expected response, triggering an escalation within Blackline's software operations team.

Blackline Push: real-time alerts from the Blackline Safety Cloud pushed to a customer's existing system

Blackline Poll: provides access to the last known location and alert information of a device

TECHNOLOGY

DATA POLICIES

Retention

Blackline Safety’s policy regarding data retention is currently to retain all data indefinitely, unless otherwise requested by customers. We have the option to develop a customer-specific policy regarding data retention and welcome the opportunity to discuss further with clients.

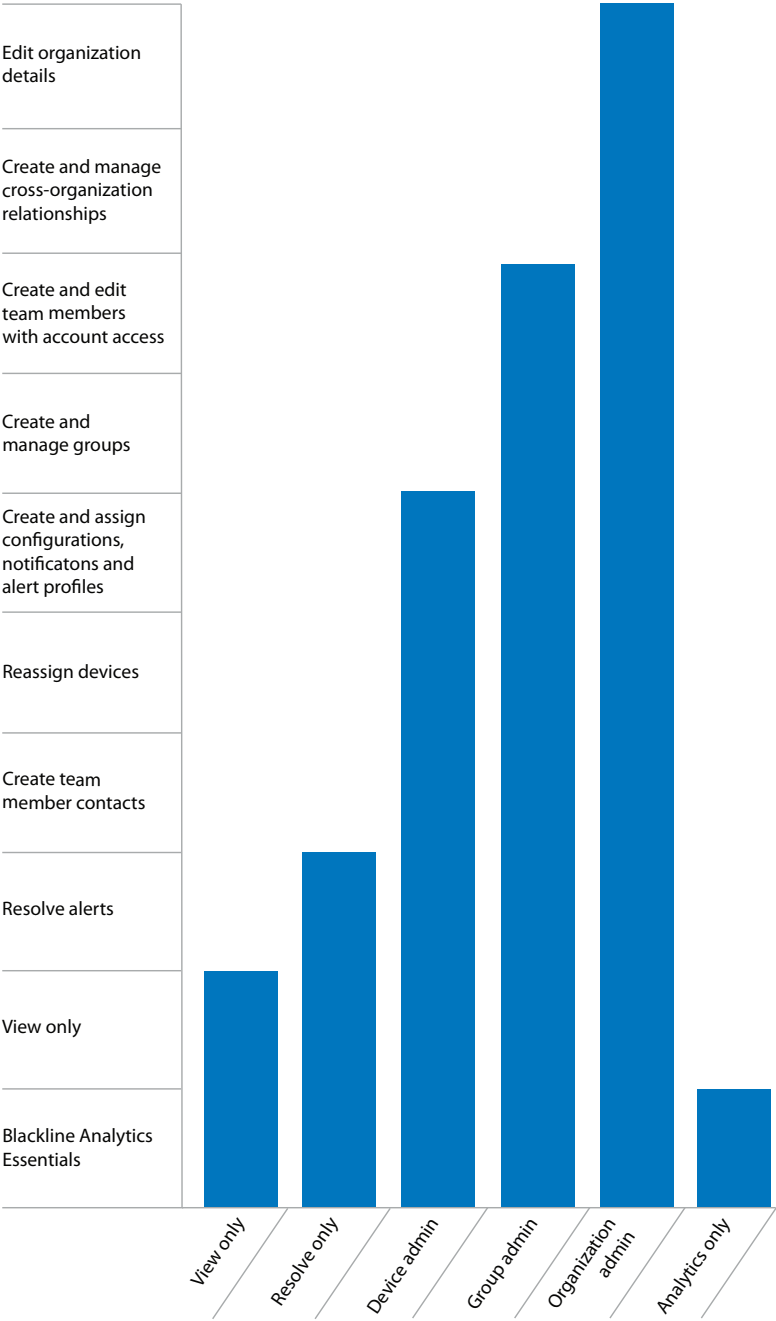
Backup

All data is backed-up regularly within AWS, using RDS backup and S3 archiving services.

USER ACCOUNTS AND ACCESS CONTROLS

Organizations in Blackline Live can be configured to mimic the real world organization of a business, allowing you to tailor user access depending on employee positions: employee, supervisor, administrator or monitoring personnel.

Roles are assigned on a group-by-group basis, defining how a team member can use the Blackline Live portal and what assets they have access to. The role a user has within a particular group will determine what they can do with that specific selection of devices — one user may be given view-only access for one group but group administration for another group. Each role level has a preset level of access to a group.



SECURITY

Human security

Blackline Safety employee roles that have access to client data are trained to take necessary precautions to assure that it is never released to unauthorized parties. Procedures are in place to validate the identity of individuals requesting information prior to release of customer information. Blackline performs background checks for all personnel with customer care or developer access within Blackline Live accounts.

Physical security

Blackline's headquarters are located in Calgary, Canada. Our office is staffed and monitored with video surveillance around the clock by personnel in our Safety Operations Center.



Security and privacy

We're committed to providing our customers with world-leading safety monitoring technology. We take the care and management of client data very seriously and have put policies and procedures in place to safeguard such information. Confidential customer information includes employee names, contact information, location data, alerts, life-cycle data related to alert management, voice recordings, user-to-user messages, device configurations, emergency response protocols and floor plans.

TECHNOLOGY



DATA DEVICE MANAGEMENT

Communication, schedules and reporting

Blackline Safety G7 EXO and G7 devices monitor the safety of workers, detect dangers due to gas exposure and increase productivity through business intelligence tools and reporting. The G7 EXO and G7 devices manage the complexity of sensor inputs (accelerometers, gyros and gas sensors) and location technology while seamlessly communicating with the Blackline Safety Cloud and responding to inbound voice calls, messages, configuration changes and firmware updates.

DATA-DRIVEN DESIGN

Data generated by G7 EXO and G7 devices have three main purposes:

- Triggering an immediate emergency response process when the employee requires help
- Communicating data to provide compliance reporting
- Storing and compiling data for analysis and business intelligence



COMMUNICATION INTERVALS

Three types of triggers prompt the G7 EXO and G7 devices to send data to the Blackline Safety Cloud:

- **Alerts** – G7c communicates data immediately and begins a high-resolution schedule that stores data every ten seconds and reports this data every two minutes for ten minutes. G7x reports data every five minutes for one hour after an alert.
- **Low-level gas readings** – For G7c and G7x, when environmental gas measurements are above a specified minimum threshold, locations and gas readings are collected and reported in the same manner as when there is an alert
- **Scheduled events** – data is regularly communicated for analytics and reporting every five minutes for G7c and 30 minutes for G7x



ALERTS

Falls, no-motion events, missed check-ins and high gas alerts are immediately communicated to the Blackline Safety Cloud for emergency response management. Manual SOS alerts are also communicated without delay. Alerts are typically delivered to Blackline Live in just a few seconds, empowering an immediate response.

While in alert, G7c automatically calculates its location every 10 seconds, storing this data and associated environmental gas samples. Every two minutes, G7c reports collected data to the Blackline Safety Cloud. If G7c triggers a new alert, the ten minute timer restarts.

During an alert, when using satellite communications via G7 Bridge, G7x reports locations every five minutes for one hour after the alert. During an alert, when supported by cellular communications via G7 Bridge, G7x will report locations once per minute for one hour. If G7x triggers a new alert, the one hour timer restarts.

SCHEDULED EVENTS

When not in alert, the G7 EXO and G7 devices communicate a variety of data to the Blackline Safety Cloud using a location schedule. By default this reporting interval is five minutes for G7c and 30 minutes for G7x. Location reports to the Blackline Safety Cloud include battery level, wireless signal and other details like gas readings when G7 is equipped with a gas sensor cartridge.

This combination of data provides situational awareness, allowing the monitoring team to dispatch responders to the correct location of an employee, as quickly as possible. Additionally, G7c and G7x devices can be located on demand within Blackline Live.

SERVER-SYNCHRONIZED EMPLOYEE CHECK-IN

The G7 EXO and G7 devices feature an optional employee check-in schedule that is configurable and separate from the location schedule. This schedule is synchronized between the the G7 EXO or G7 devices and the Blackline Safety Cloud, enabling detection of a missed check-in, even when the G7 device unexpectedly stops communicating with the Blackline Safety Cloud.

GAS DETECTION DATA MANAGEMENT

While the G7 EXO and G7 devices use scheduled and unscheduled communications, they continuously monitor environmental gas readings every second for potential alerts and low-level gas readings.

Every gas reading contributes to the computation of a short-term exposure limit (STEL) and a time weighted average (TWA). Both of these readings are required by industry to monitor the accumulated health exposure of employees to environmental gases over time.

Blackline's G7 data management and communication to the Blackline Safety Cloud ensures that you have quick and easy access to the following data, each with date, time, employee name and location.

- Low-gas and high-gas alerts
- Sensor over and under limit alarms
- STEL and TWA alerts
- Peak reading while in alert
- Sensor failure

HISTORICAL DATA — ANALYTICS/REPORTING

The G7 EXO and G7 devices stream data to the Blackline Safety Cloud, supporting insightful analytics within Blackline Live. Using our Blackline Analytics platform in Blackline Live, it's easy to analyze data trends to help identify areas with higher risk of safety events, including gas exposures, for precise hazard mitigation. Data can be used to compare groups within a company, the performance of supervisors, or a company against the industry average.

- Gas exposure reports over time, by device or by user
- Predictive analysis heat maps of potentially hazardous areas
- Compliance trends over time

FORENSIC DATA REVIEW

Should an incident occur in the field, Blackline Safety is able to wirelessly download detailed logs for the previous 22 hours worth of data for G7c. G7c and G7x both support detailed log retrieval through a USB connection. When a safety incident occurs and responders are on the scene, the G7 device should be turned off — contact Blackline Safety about retrieving detailed data logs.

DATA STORAGE — BEYOND WIRELESS COVERAGE

On some occasions when operating on the edge of 3G/4G coverage, the communications link may drop due to lack of signal coverage. All data generated by the G7 EXO and G7 devices is stored in non-volatile memory and communicated to the Blackline Safety Cloud when the connection is re-established.

For employees working persistently beyond 3G wireless coverage, Blackline's G7x delivers satellite communications for uninterrupted last-mile safety monitoring.

TECHNOLOGY

AREA MONITORING TECHNOLOGY

CONNECTIVITY

On start up, G7 EXO automatically connects to cellular networks in over 100 countries, with the option to leverage the Iridium Satellite Network for true global coverage.

- With cellular and optional satellite connectivity in every device, there is no limit to the number of devices that can link together and connect to the network.
- G7 EXO works alongside G7 wearable devices, streaming data through cellular or satellite networks through the Blackline Safety Cloud to the Blackline Live portal.
- Teams can configure their fleet operations in Blackline Live, and monitoring personnel can use the portal tools to manage and respond to alerts generated by G7 EXO units in the same way as G7 wearables.

GAS DETECTION

G7 EXO features 360 degree gas detection based on its unique gas path that enables free gas diffusion from any direction. By design, area monitors are deployed at specific points that enable businesses to understand the gas reading in that area. 360 degree detection makes for a faster response to gas released in the area.

- G7 EXO is compatible with the same single-gas and multi-gas diffusion sensor cartridges as G7 wearable monitors
- Cartridges can be swapped out in minutes should a different gas configuration be required, or if a sensor failed or reached the end of its serviceable life.
- Optional pump upgrade available

FLEXIBLE MOUNTING OPTIONS

G7 EXO can be mounted or securely placed anywhere it is needed with a range of highly-configurable options, including:

- A 1 ft tripod
- A 3 ft tripod
- A universal mount
- A rail/scaffold mount

INTERFACE PORTS

Easily integrate G7 EXOs with other functions and operations of a facility to streamline operations and optimize responses during an emergency. When safety notifications are triggered on G7 EXO, A/B interface ports act as switches by sending ON or OFF signals to connected accessories.

- If a high gas threshold is reached, the A port will turn ON. Any device connected to the A port will be active. The port will turn OFF when the alert is muted or resolved on G7 EXO.
- If a low gas threshold is reached, the B port will turn ON. Any device connected to the B port will be active. The port will turn OFF when the alarm is dismissed or resolved on G7 EXO.

BATTERY AND CHARGING OPTIONS

G7 EXO features industry-leading battery life of over 100 days under standard diffusion operating conditions with the option to run indefinitely using battery extenders, including:

- Non-intrinsically safe trickle charger
- Solar panel
- Fast charger
- Optional replacement batteries*

WEATHERPROOFING

Designed to take anything you or mother nature can throw at it, G7 EXO has been tested by third-party labs in extreme conditions to prove its performance.

- Wind speed: 165 km/h (103 m/h)
- Freezing rain: 30 km/h (19 m/h)
- Snow: -20° C (-4°F)



*Swapping G7 EXO batteries must be done in a non-hazardous (non-IS) environment

LOCATION TECHNOLOGY

GPS

GPS technology works well when outdoors and is an important feature of Blackline's services. Blackline Safety assists the GPS system embedded within G7 EXO, G7c and G7x devices. Long-term GPS satellite orbit models pushed to devices in the field. Assisted-GPS technology improves the time to compute the first location after waking up the GPS radio and reduces the satellite signal acquisition sensitivity.



Location Beacons

GPS satellite signals can be weak and subject to reflection from large objects such as buildings. Reflected GPS satellite signals (multiple-path/multi-path signals) can cause the precision of reported GPS locations to decrease within a building. Concrete and steel can additionally block GPS signals, causing multi-path signals to be increasingly dominant, or cause a lack of sufficient satellite signals to compute a location.

Blackline Location Beacons can be installed inside and around large buildings, process facilities, pressure vessels, piping and tanks. When a G7 detects the presence of a nearby beacon, it reports that beacon ID and its location to the Blackline Safety Cloud where beacon locations have been recorded. Location Beacons are configurable with power levels that deliver 15-foot to 150-foot positioning resolution, when spaced accordingly. Within Blackline Live, employee locations are mapped on a Google Map at the pre-determined location of the identified beacon.

Floor/site plans are optionally imported into the Blackline Live account and provides additional context regarding the employee's location. Floor plans are provided by the end customer and imported as user data into the Blackline Safety Cloud. For multi-storey buildings and structures, floor plans can be assigned to layers that enable employee locations to be mapped on the correct floor level.

Over-the-air configuration changes

Blackline devices are configurable over-the-air. Changes are easy to make in Blackline Live through the device configuration page, and can be pushed to a single device, group or an entire fleet.

Over-the-air firmware updates

G7 firmware updates are automatically sent, verified and committed to devices. No user interaction is needed and an update completes in about five minutes, ensuring all devices are operating with the latest features.*

**Firmware update processes differ slightly for G7 Bridge units. See User Manual for details.*

TECHNOLOGY



CARTRIDGES

Blackline Safety is the only gas detection vendor to offer plug-and-play cartridges that deliver unparalleled configuration flexibility, supported by a broad range of gas sensors. Reconfiguring and redeploying a G7 EXO or G7 wearable with new sensors is easy, and future-proofs your investment.

Cartridges enable one device to support nearly any configuration with a similar cartridge change. Further, cartridges eliminate device downtime associated with a failed sensor or pump. Replacing a cartridge with a new one takes just a few seconds.

- Standard (no-gas) Cartridge
- Single-gas Diffusion Cartridge with a choice of one gas sensor
- Multi-gas Diffusion Cartridge with a choice of two to four gas sensors*
- Multi-gas Pump Cartridge with a choice of one to four gas sensors*

**Can detect up to five gases when configured with a COSH sensor*

STANDARD SENSORS

- Hydrogen sulfide (H₂S)
- High-range hydrogen sulfide (H₂S)
- Combustible (LEL-MPS)
- Combustible (LEL-infrared)
- Oxygen (O₂)
- Carbon monoxide (CO)
- High-range carbon monoxide (CO)
- Hydrogen-resistant (CO-H)
- Sulfur dioxide (SO₂)

PREMIUM SENSORS

- Ammonia (NH₃)
- High-range ammonia (NH₃)
- Chlorine (Cl₂)
- Chlorine dioxide (ClO₂)
- Carbon dioxide (CO₂)
- Hydrogen cyanide (HCN)
- Hydrogen fluoride (HF)
- Ozone (O₃)
- Nitrogen dioxide (NO₂)
- Photoionization (PID) ppm
- CO+H₂S (COSH)



CONFIGURATION MODES

Configuration modes enable your team members to tailor G7 operation on-the-fly. Whether it's a confined space that will be entered or a pipeline that is going to be pigged, it's easy to tailor device operation for the situation at hand.

PRE-ENTRY MODE (MULTI-GAS PUMP CARTRIDGE ONLY)

This mode is used before entering a space that could potentially contain dangerous gas. You can customize how your G7 device will behave when it detects high levels of gas.

LEAK CHECK MODE (ALL CARTRIDGES)

This mode is used when performing leak inspections. Gas alarm options can be configured to address environmental needs.

SCBA MODE (ALL CARTRIDGES)

This mode is used when entering an area known to have high gas levels and the worker is wearing a self-contained breathing apparatus (SCBA). This mode is configurable to alter gas alarm and safety alert behaviors as required for each scenario.

HIGH-RISK MODE (ALL CARTRIDGES)

This mode is used for general high-risk situations, such as when traveling through known dangerous areas. If desired, this mode can initiate more frequent G7 check-ins and modified safety monitoring functionality.

LEL-MPS

Blackline Safety' G7 connected combustible gas detectors use the industry leading Molecular Property Spectrometer (MPS™) Flammable Gas Sensor by NevadaNano. This MPS sensor's innovative technology delivers TrueLEL™, offering the most accurate readings in the market for over 14 of the most common combustible gases and gas mixes — including hydrogen — while eliminating issues found with traditional sensors.

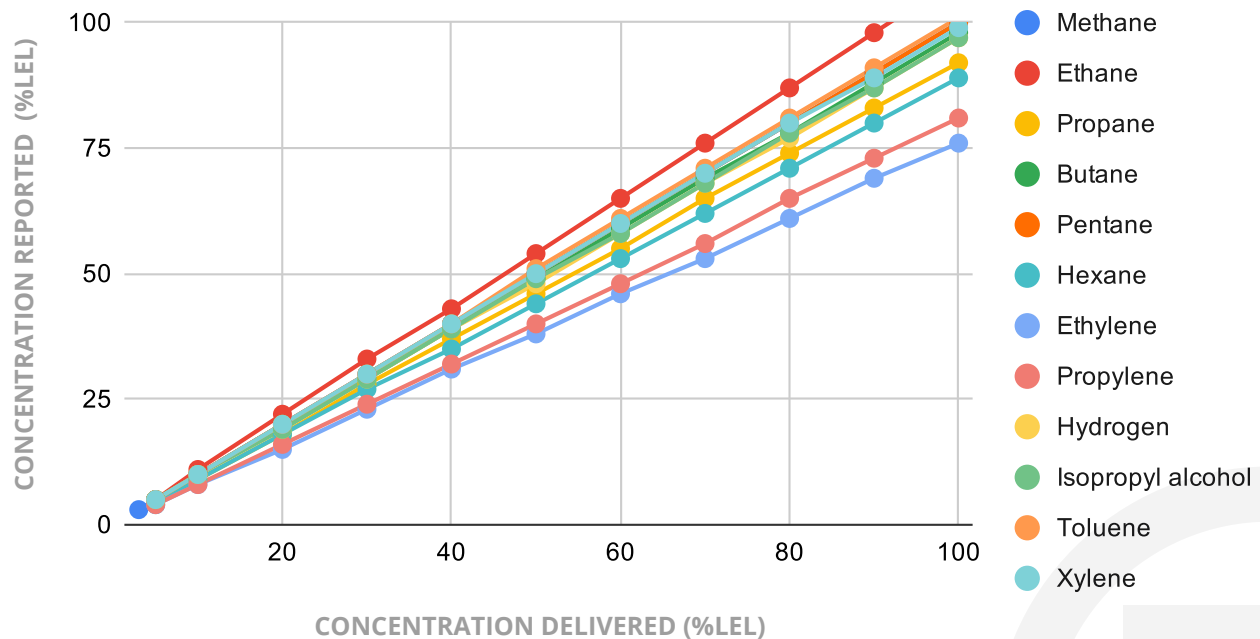
MPS sensor can be used complex industrial environments such as Oil & Gas, Petrochemical, Industrial Manufacturing, Water and Wastewater, Hazmat and Fire Response.

- ✓ Poison immune
- ✓ Multi-gas protection – including hydrogen
- ✓ Accurate, automatic readings without correction factors
- ✓ Automatic gas classification
- ✓ Extended lifetime (5+ years)
- ✓ Reduced false alarms

The MPS sensor is intrinsically safe, stable, poison immune and can accurately detect over 14 combustible gases from one calibration with reduced false alarms or non-alarms due to a wide environmental operating range.

- Hydrogen
- Ethane
- Butane
- Xylene
- Propylene
- Methane
- Propane
- Pentane
- Toluene
- Isopropanol
- Isobutane
- Isobutylene
- Methyl ethyl ketone
- Octane

The MPS sensor's micro-electromechanical system (MEMS) transducer is a micro-machined membrane with an embedded Joule heater and resistance thermometer. The MEMS transducer is mounted on a PCB and packaged inside a rugged enclosure open to ambient air. Delivering a TrueLEL, the presence of a flammable gas causes changes in the thermodynamic properties of the air/gas mixture that are measured by the transducer. Sensor data are processed by patented algorithms to report accurate concentration and classify the flammable gas.



For inert environments, Blackline recommends using our LEL-IR gas sensor. For more information on the accuracy of additional gases, contact your Blackline Safety representative.

TECHNOLOGY

PHOTOIONIZATION DETECTOR (PID)

Photoionization detection technology is the trusted solution to ensure workers are not being exposed to toxic levels of volatile organic compounds (VOCs). While LEL sensors are the most common sensors used to protect workers against explosive hazards, they alone are not sensitive enough to protect workers from low-level toxicity.

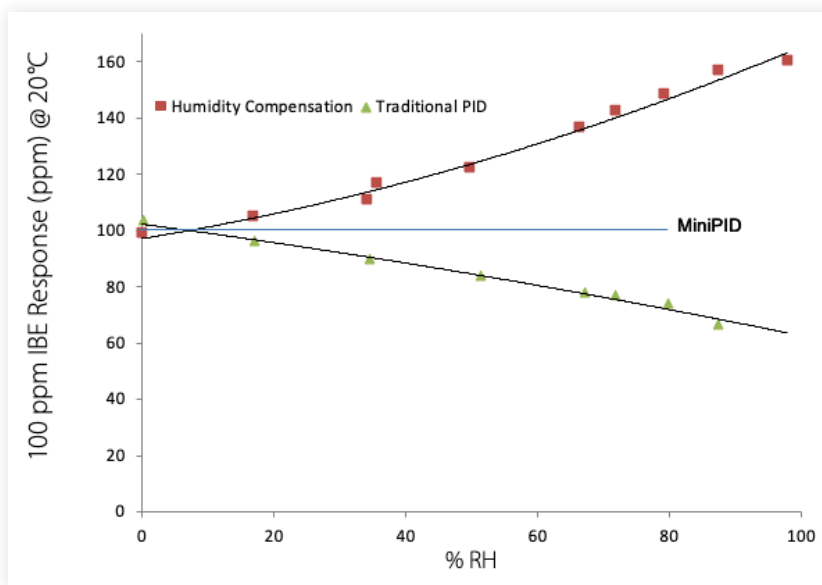
VOCs that Blackline can help protect workers against include, but are not limited to, the following:

- Isopentane ▪ Benzene ▪ Xylene ▪ Diethylamine ▪ Trichloroethylene ▪ Isopropanol
- Octane ▪ Toulene ▪ Styrene ▪ Triethylamine ▪ Ethanol ▪ Hexane

Occupational exposure limits are defined by safety regulations, and it is important for businesses with personnel who work near VOCs to monitor employee exposure within these limits. Blackline's G7 personal gas monitors and G7 EXO area gas monitors feature a plug-and-play cartridge interface with diffusion and combination diffusion-pump options. Both cartridges are available with an industry leading PID sensor from a the world's largest manufacturer of PIDs, ION Science.

ION Science has been proven to deliver the highest performance through third-party testing. Blackline devices leverage the 10.6 eV MiniPID 2 sensor, chosen for its robustness, low maintenance and long service life. This next generation long-life lamp provides exceptional stability and long-term performance and delivers dynamic and dependable responses to thousands of VOCs in many different applications. All MiniPID 2 sensors include patented Fence Electrode Technology, protecting the sensor from moisture, dust and aerosols.

For the PID sensor to respond to a VOC, the photon energy of the lamp must be greater than its ionization energy (IE). The response factor (RF) relates the sensitivity of PID to a volatile compound with the sensitivity of the PID to the standard calibration gas isobutylene. RFs are inverse to sensitivity — the higher RF, the lower the sensitivity. Isobutylene is used to calibrate PID, and an RF is used to convert the isobutylene calibrated measurement to a measurement of the target volatile compound.



The MiniPID 2 sensor significantly reduces the amount of signal suppression as humidity increases, giving more accurate results across a wide range of environmental conditions

- Proven anti-contamination, humidity-resistant design
- Accurate results in all environmental conditions
- Trustworthy performance for over 10,000 hours of use
- Maximized accuracy keeps workers safe
- Increased reliability allows hazard mitigation to be done where needed



The safe use of PID requires knowledge of the environment in which it is used, and correct interpretation of the results obtained. If your MiniPID2 sensor needs to be serviced, replacing the cartridge takes just a few seconds greatly reducing any downtime.

NOTES



Wherever there's a need for safety

We're there

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