SICK.COM

APPLICATION NOTE

NEXT-GENERATION 3D SAFETY FOR ALL APPLICATIONS

Combining intelligent sensing with flexible safety design to protect workers and optimize machine uptime with the safeVisionary2.

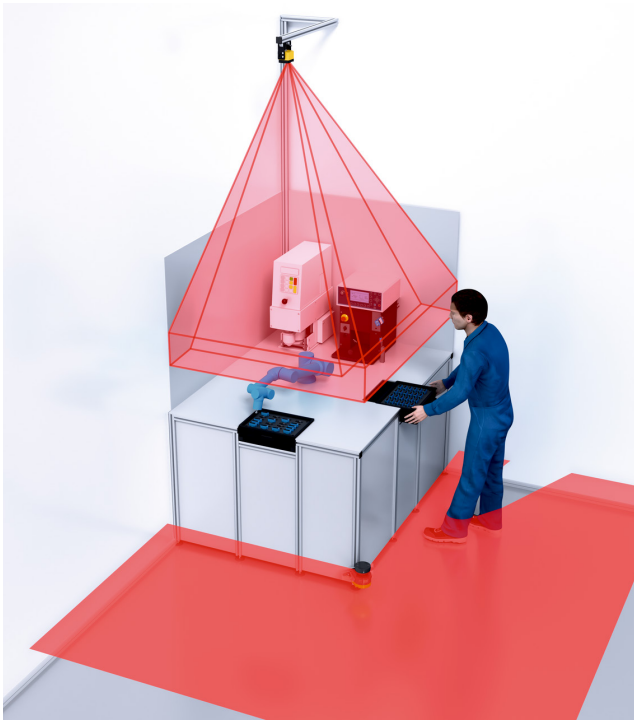
SICK Sensor Intelligence

APPLICATION NOTE

3D SAFETY FOR STATIONARY MACHINERY

The safeVisionary2 is a 3D safety-certified time-of-flight (ToF) sensor designed to deliver advanced area protection, access detection, and machine hazard mitigation in stationary industrial environments.

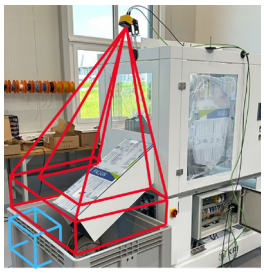
Its fully configurable 3D protective fields allow machine builders and integrators to reduce hardware footprint, replace multiple traditional safety devices, and simplify overall safety design while maintaining the required Performance Level (PL).



COMMON STATIONARY APPLICATIONS

METAL BENDING/METAL STAMPING STATIONS

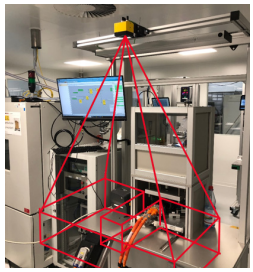
In these applications, the safeVisionary2 secures areas where heavy metal parts drop into trays by creating a single U-shaped 3D protective field that blocks access to hazardous zones. Contour detection fields also verify that a tray is correctly positioned before operation, enabling two safety functions with one device while saving space and reducing sensor count.



In metal stamping environments, the safeVisionary2 monitors the infeed area where sharp-edged parts fall onto trays and automatically stops the conveyor when a person enters the zone, eliminating physical barriers and providing a simple, cost-effective PL c safety solution.

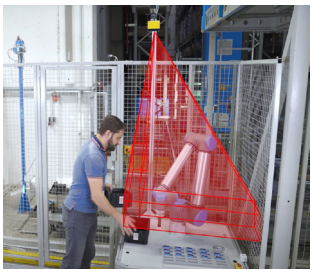
CABLE TESTING STATIONS

For high-voltage cable testing stations, the safeVisionary2 delivers gapless 3D safeguarding, using flexible field shapes and CutOut areas to exclude required fixtures while maintaining full protection. This creates a seamless safety volume with minimal space impact and high configurability.



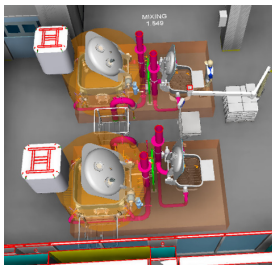
ROBOTIC TRAY EXCHANGES

In semi-stationary applications like robotic tray exchange, the safeVisionary2 supports safe, efficient human–robot interaction by slowing the robot instead of stopping it when someone approaches. It also protects against leaning-over intrusions and enables shorter separation distances, allowing the robot to keep working safely at reduced speed and improving overall throughput.



FOOD PROCESSING APPLICATIONS

The safeVisionary2 works well in food processing applications, where dangerous access points must be monitored without needing to install additional hardware.



In these applications, the safeVisionary2 can create a U-shaped volume to prevent access to mixing areas or detect personnel near mixing pots when lids close. With only one device needed and no extra space required, the sensor enhances operator safety while simplifying integration.

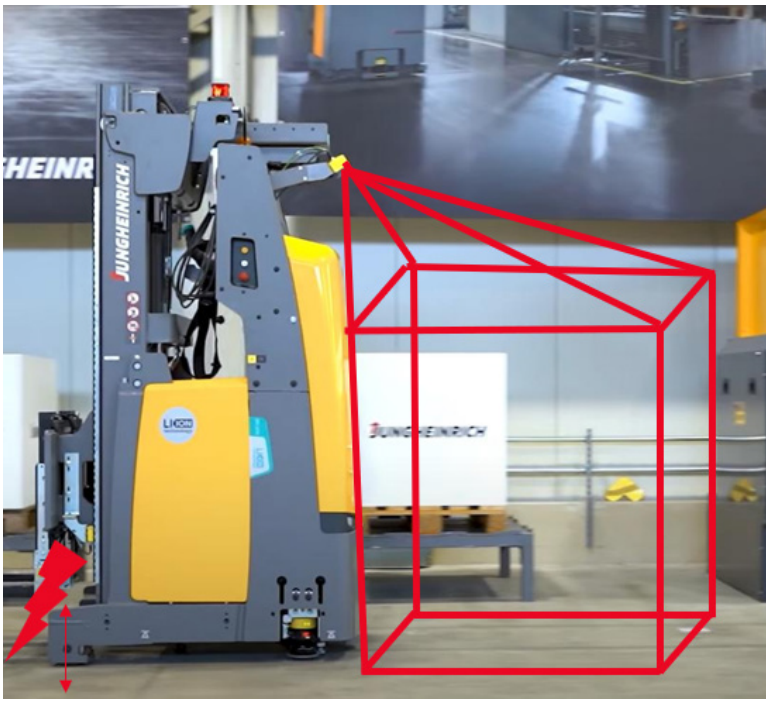
Learn more about the safeVisionary2
sick.com/safevisionary2⟶

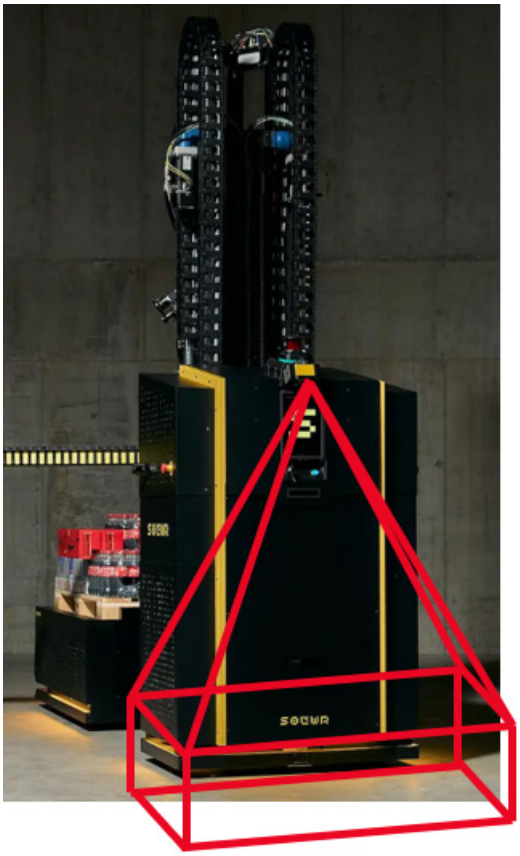
SICK
Sensor Intelligence

3D SAFETY FOR MOBILE PLATFORMS

The safeVisionary2 brings advanced 3D safety to mobile platforms by adding overhead and elevated-plane protection that traditional 2D safety scanners cannot cover. Whether used on forklifts, AGVs, tugger trains, or specialized mobile robots, it provides reliable anti-collision monitoring that reduces secondary accidents, protects equipment, and fills critical detection gaps.

With its flexible 3D field configuration and ability to complement existing safety systems, the safeVisionary2 enhances mobile machine safety without increasing operational complexity—delivering a smarter, more complete protective solution for dynamic industrial environments.





ANTI-COLLISION MOBILE APPLICATIONS

Traditional 2D safety scanners protect only at ground level, leaving elevated areas vulnerable to collisions. By adding a safeVisionary2 above the microScan3 scan plane, forklifts gain true 3D anti-collision monitoring that covers the full height of the vehicle. This additional layer of protection reduces the risk of secondary accidents, safeguards the vehicle's superstructure, and helps lower overall fleet damage costs.

INDUSTRIAL TUGGER TRAINS & AGVS

Mobile platforms such as tugger trains and AGVs often encounter obstacles—pallets, protruding materials, or even human limbs—that sit above the detection range of conventional 2D scanners. The safeVisionary2 fills this gap by monitoring higher elevations and working in combination with existing PL-rated scanners. This provides continuous, gapless safeguarding that prevents overhead or protruding object collisions, improves uptime, and enhances overall operational reliability.

Learn more about the safeVisionary2
sick.com/safevisionary2⟶

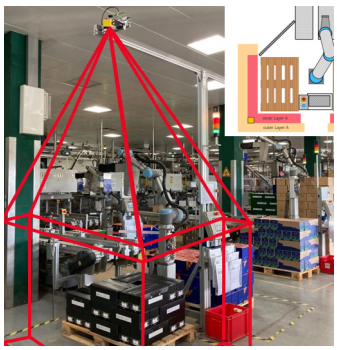
APPLICATION NOTE

3D ROBOTICS SAFETY

The safeVisionary2 elevates robotic safety by introducing intelligent 3D protective fields that adapt to the dynamic nature of modern automated cells. Whether used for palletizing, pick-and-place, or advanced human–robot collaboration, it provides precise intrusion detection, flexible field shaping, and the ability to support speed-and-separation monitoring strategies.

COMMON ROBOTICS APPLICATIONS

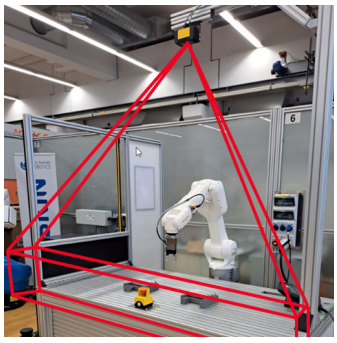
DEPALLETIZING AND PALLETIZING



In depalletizing and palletizing applications, space is often extremely limited, making physical fencing impractical. By using one or two safeVisionary2 sensors, integrators can create multi-side virtual fences that securely monitor access without occupying floor space.

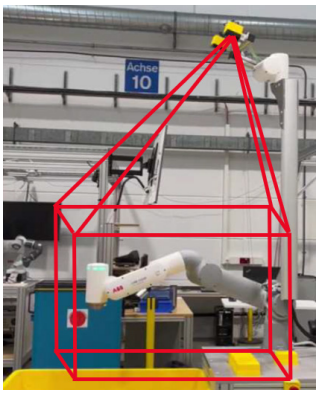
The system can also employ both external and internal protective fields to enable sequence monitoring, allowing it to distinguish whether a person is entering or exiting the cell. This ensures the robot automatically restarts once an operator has safely left the area, while overhead mounting keeps the footprint minimal and the workspace open.

PICK AND PLACE



In a typical pick-and-place demonstrator cell, the safeVisionary2 enhances safety and efficiency by stopping the robot immediately upon human intrusion, while an S300 Mini scanner progressively slows the robot as a person approaches. This coordinated approach ensures the robot only stops when absolutely necessary, improving productivity by supporting dynamic speed control. The result is a safe and responsive cell that maintains efficiency without compromising human safety.

PICK-CHECK-DROP SYSTEM



For fast-moving robotic systems such as pick-check-drop applications, hazards change rapidly as the robot moves through its path. Mounting the safeVisionary2 on the robot's first axis enables the protective fields to move with the robot, providing continuous monitoring of the true hazard zone. The sensor automatically adjusts its protective fields based on robot speed and operating state, reducing required safety distances and allowing the robot to work safely in closer proximity to humans. This adaptive capability supports higher throughput and enables more compact, space-efficient cell designs.

AIRPORT BAGGAGE HANDLING & BELT PICKING

In automated baggage-handling scenarios, a combination of two safeVisionary2 sensors (PL c), two nanoScan3 scanners (PL d), and a Visionary-T Mini for 3D localization creates a comprehensive safety system for both people and robotic equipment. The safeVisionary2 units prevent personnel from leaning over trolleys and ensure the robot slows down when someone walks between the trolley and the wall. This setup adds an essential safety layer, delivering reliable 3D coverage in fast-moving, highly dynamic airport environments.

Learn more about the safeVisionary2
sick.com/safevisionary2⟶

SICK
Sensor Intelligence