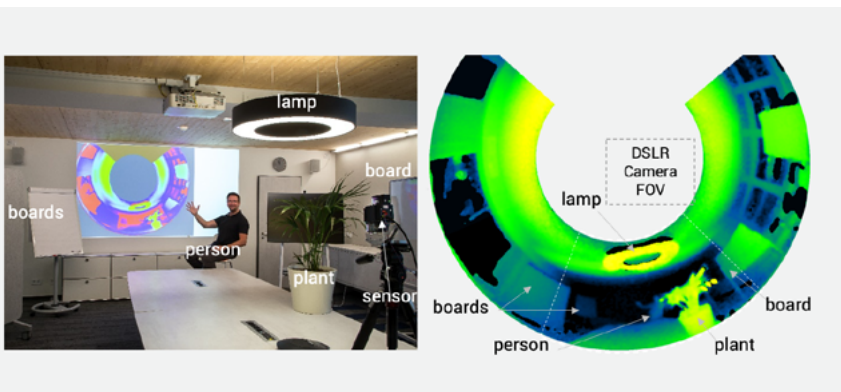


Jabil Omnidirectional Sensor

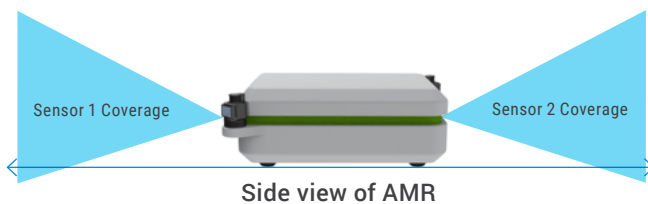
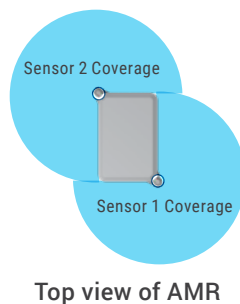
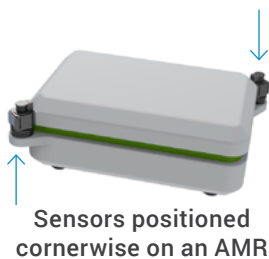
Expanding the Boundaries of Imaging

The Jabil Omnidirectional Sensor removes the need for multiple independent sensors on robotics platforms. With its large field of view, the innovative solid-state sensor supports state-of-the-art object detection and collision avoidance algorithms. The Jabil Omnidirectional Sensor provides a new sensing tool for complex robotics platforms.



OPTIMIZED FOR AMR

The first-generation omnidirectional sensor was optimized for autonomous mobile robots platforms. Complete radial coverage of an AMR can be obtained by mounting two sensors diagonally opposite. Jabil can design sensors with 360° HFOV coverage, if that format is more suitable for a particular AMR, collaborative robot, or drone implementation.



SPECIFICATIONS

FOV	HFOV: 270° VFOV: 60°
Frame Rate	30fps
Power Input	24v / 0.6a Average
Resolution	640x480 Pixels
Processor	NXP iMX8M-Mini
Wavelength	850nm / (940nm)
Detection Range	Up to 5m
Dimensions	Height: ~125mm Width: ~95mm
Touch Display	320x240 Pixels
Interface	Wired or wireless (customizable to customer needs)
Patent Portfolio	System, Optics, Control
Custom Lens	Designed by Jabil Optics

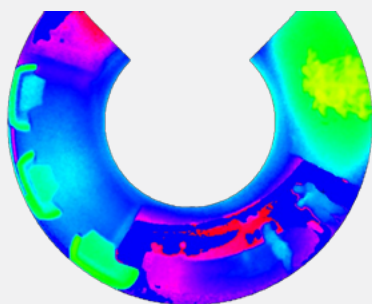
APPLICATIONS

- Autonomous Mobile Robots (AMR)
- Collaborative Robotics
- Drones

Sensor Data Flow

1. POLAR DATA CAPTURE

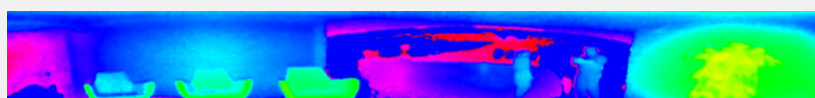
- Calibration
- Lens correction for distortion
- Per pixel gain and offset correction



Polar Depth Data

2. PLANAR DATA OUTPUT

- Transformation of polar data to cartesian data
- Noise filtering
- Greyscale or false color



False Color Depth Data after Transformation

3. APPLICATION SUPPORT

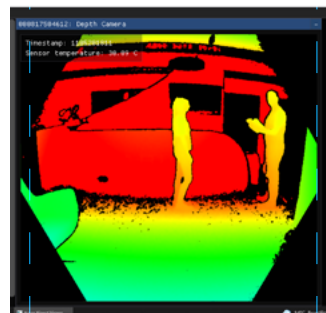
- Web interface
- API
- IMX8 MINI - support customer application code on device

Performance Comparison

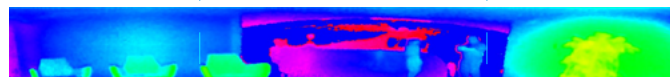
JABIL OMNIDIRECTIONAL	AZURE KINECT DK
270° HFOV	120° HFOV
60° VFOV	120° VFOV
640x480 Pixels	512x512 WFOV Binned
850nm	850nm
Captured @ 30fps	Captured @ 5fps
On-device processing	Processing off-loaded to host
Transformation applied	

Black pixels in Azure Kinect image are invalid pixels.
 Pink pixels in Jabil Omnidirectional image are low-signal or invalid pixels.

To learn more about the Jabil Omnidirectional Sensor Reference Design or to purchase an evaluation kit, please visit our webpage: jabil.com/services/optics/3d-sensor



Azure Kinect DK



Jabil Omnidirectional