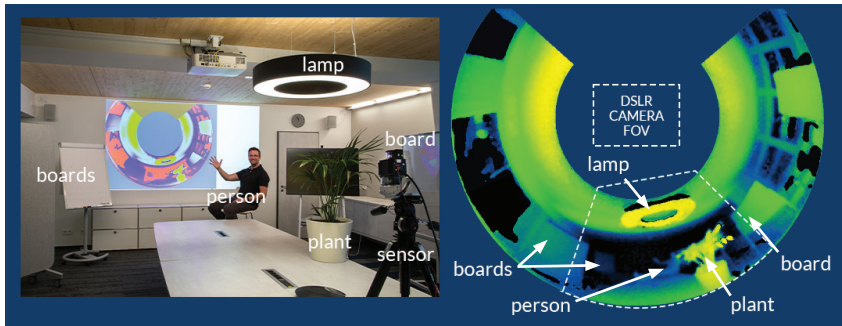


Jabil Omnidirectional Sensor

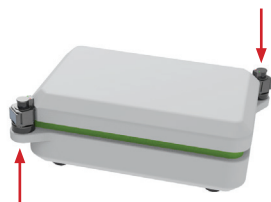
Expanding the Boundaries of Imaging

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.

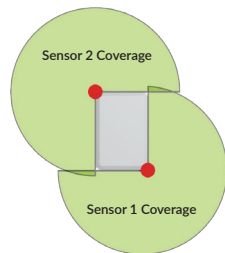


OPTIMIZED FOR AMR

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.



Sensors positioned cornerwise on an AMR



Top View of AMR



Side View of AMR

SPECIFICATION

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	Ethernet/USB2.0 Wi-Fi/Bluetooth/SD
PATENT PORTFOLIO	System, optics, control
CUSTOM LENS	Designed by Jabil Optics

APPLICATIONS

Autonomous Mobile Robots (AMR)

Collaborative Robotics

Drones

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Request an evaluation kit today at Ian_Blasch@Jabil.com

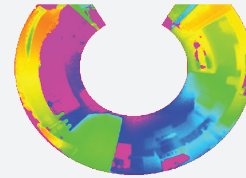
JABIL

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

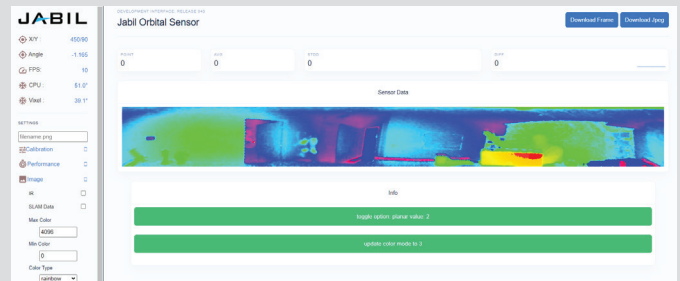
FALSE COLOR DEPTH DATA AFTER TRANSFORMATION



3) APPLICATION SUPPORT

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

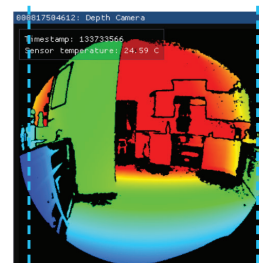
WEB INTERFACE



PERFORMANCE COMPARISON

JABIL OMNIDIRECTIONAL	AZURE KINECT DK
270° HFOV	120° HFOV
60° VFOV	120° VFOV
640 x 480	512 x 512 WFOV Binned
850nm	850nm
Captured @ 30fps	Captured @ 5fps
On-device processing	Processing off-loaded to host
Transformation applied	

AZURE KINECT DK



JABIL OMNIDIRECTIONAL



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

Contact Information

To learn more about the Jabil Omnidirectional Sensor Reference Design or to purchase an evaluation kit, please contact:

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Request an evaluation kit today at Ian_Blasch@Jabil.com

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