



Intel® RealSense™ Development Kit Featuring the ZR300

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The Intel® RealSense™ System Developer Kit (SDK) for Linux provides a development platform to create the next generation of natural, immersive, and intuitive software applications. The SDK is a collection of software libraries providing the ability to build rich sensory capabilities for robots and other devices. These libraries aim to lower the barriers for using these capabilities and shift the application developers' focus from coding the algorithm details to innovating on the usage of these capabilities for next generation human-device experience.

- Person Library: Programming for person detection and tracking, body gesture recognition, localization and posture analysis
- SLAM Library: Programming support for determining robot pose, recognize it's position in an environment, simultaneously with building a map of it's surrounding, 6 degrees of freedom (6DoF) tracking with re-localization, dense reconstruction, and occupancy map creation.
- Object Library: Programming for single and multi-object detection, recognition, localization and tracking

FEATURES:

Navigation

- Determine position & orientation using visual odometry
- Enables 3D spatial perception using motion tracking, depth perception, and area learning.
- Robust tracking enabled by using depth, wide FOV camera and IMU

Indoor and Outdoor¹ performance

- > 3.5m indoor range and longer range outdoors
- Uses IR projector for indoor usages and ambient IR from sunlight for outdoors
- IR pattern provides texture to non-textured objects
- No multi-camera interference. Supports multi-camera configuration

ASIC designed by Intel

- ASIC processes advanced algorithms
- Enables high depth resolution & frame rate at low power
- High frame rate enables tracking performance for 3D scanning applications

Fully calibrated camera

1. The middleware has been optimized for indoor use and has not been tested for outdoor use.

ADDITIONAL INFORMATION:

Use Environment	Indoor & Outdoor
Depth Technology	Active IR Stereo
Stereo Imagers Resolution & Frame Rate	2 x VGA @ 60 fps , global shutter, fixed focus
Stereo Imagers FOV (D x V x H)	70° x 46° x 59°
RGB camera resolution and frame rate	2MP, Up to 1080p @ 30fps, 16:9, rolling shutter, fixed focus
RGB camera FOV (D x V x H)	75° x 41.5° x 68°
Depth Output Resolution & Frame Rate	Up to 628x468 @ 60 fps
Depth Output Format	16-bit
Minimum Depth Distance (Min-Z)	0.6m (628x468) 0.5m (480x360)
Maximum Range	Varies depending on light conditions
Tracking Module	Fisheye camera resolution: VGA @ 60 fps Fisheye camera FOV (DxVxH): 166° x 100° x 133° IMU: 3-axis accelerometer & 3-axis gyroscope IMU Time Stamp: 50 µsec accuracy
Maximum Power	1.9 W†
IO Connectivity	USB 3.0 required
Note	Power usage includes stereoscopic camera, infrared projector, imaging ASIC, RGB camera, and tracking module. †