

# Intel® RealSense™ Depth Module D400 Series

## Software Calibration Tool

Release Notes

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*January 29, 2018*

*Version 2.5.2.0*



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# Contents

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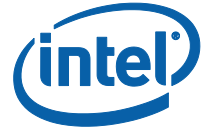
1	Introduction .....	5
2	What's New.....	6
3	Known Issues and Limitations .....	7
4	Installation and Additional Documentation .....	9



## Revision History

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Document Number	Revision Number	Description	Revision Date
	2.5.2.0	Initial release for Intel® RealSense™ D400 series depth camera devices	01/25/2018



# 1 Introduction

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In order to operate Intel® RealSense™ D400 device efficiently and accurately, user needs to make sure the device is well calibrated. Calibration Tool API provides such calibration tools as well as software interfaces for users who prefer to develop custom calibration application with Intel proprietary algorithms or user custom algorithms for their unique usages.

The Calibration Tool API for Intel® RealSense™ Technology includes:

- Calibration Tools including **Intel® RealSense™ Dynamic Calibrator**
- Calibration API including libraries, headers, and sample applications
- **Intel® RealSense™ Dynamic Target Tool** phone app on Apple App Store and Google Play



## 2 What's New

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New Calibration Tool API product for Intel® RealSense™ D400 series 3D depth camera devices.

- Support Intel® RealSense™ Depth Module in the D400 series including D400, D410, D415, D420, D430, and D435
- Calibration with printed target
- Calibration with target displayed on iPhones and Android phones through Intel® RealSense™ Dynamic Target Tool app on Apple App Store and Google Play
- Calibration without target
- Support Calibration API with Intel proprietary algorithms and user custom algorithms
- Support calibration parameter read/write/restore
- Includes source code for sample calibrator application with Intel proprietary algorithms
- Includes source code for custom calibration sample app with OpenCV algorithm and white paper demonstrate how to calibrate with user custom algorithms
- Support Windows and Linux



### 3 Known Issues and Limitations

This section lists known product limitations.

Issue	Description
<p><a href="#">DSO-2592</a></p>	<p><b>Impact of reflections from environment lighting</b></p> <ul style="list-style-type: none"> <li>Lighting reflection on phone screens severe impacts targeted calibration effectiveness. When a phone target is used where lighting reflection on phone glass screen presents, for example, outdoor under bright sunlight, or indoor with lots of lights surrounded, calibration performance degrade. In severe cases, calibration may not converge (as the impacted images thrown away) and it takes longer to complete or no result may be reached.</li> <li>In case this issue happens, try to move the phone to another location or a different direction to avoid reflections.</li> </ul>
<p><a href="#">DSO-4182</a></p>	<p><b>Impact of rolling wave bands in images with AWG devices and phone targets on Samsung displays</b></p> <ul style="list-style-type: none"> <li>Images from D420, D430, D435 devices and phone targets on Samsung displays have rolling wave bands, and in some cases this would affect effectiveness of calibration since its algorithm looking for accurate patterns in target. Only D420, D430, D435 devices impacted. D400, D410, D415 devices have no impact.</li> <li>Only AOS Samsung target phones impacted. IOS phones no impact.</li> </ul>



	<ul style="list-style-type: none"> <li>• Impact should be limited to performance. Accuracy should not be impacted based on existing tests.</li> <li>• The issue was worked around in dynamic calibration by automatically adjust auto exposure brightness to minimize the impact from the wave bands.</li> </ul>
<p><a href="#">DSO-5731</a></p>	<p><b>Target on Galaxy S5 phone not accurate. Avoid use this phone as target.</b></p>
<p><a href="#">DSO-7965</a></p>	<p><b>Restore data from Gold sector to Dynamic sector not working on D435 devices with 5.8.15.0 and older firmware</b></p> <ul style="list-style-type: none"> <li>• Impacts only D435 devices</li> <li>• -g reset option in CustomRW tool and ResetDeviceCalibration API will not work correctly. The active RGB calibration table will be missing. <b>Avoid use this option on D435 devices with 5.8.15.0 and older firmware.</b></li> <li>• The issue will be fixed in newer firmware release</li> </ul>





## **4      *Installation and Additional Documentation***

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For installation and other information, please refer to the User's Guide and Programmer Guide documents that are also available online:

- Intel® RealSense™ Depth Module D400 Series Software Calibration Tool – User's Guide
- Intel® RealSense™ Depth Module D400 Series Software Calibration Tool – Programmer Guide
- Intel® RealSense™ Depth Module D400 Series Custom Calibration