

# UAV LOW LIGHT NAVIGATION MODULE

Revolutionary Ultra Wide-Angle camera, meeting the highest standards within the Blue UAS Framework, now available off-the-shelf.





The camera module, that was developed as part of the Blue UAS Framework, is now broadly available for commercial applications and ready to be integrated with any drone platform.

*“The Immervision camera was ‘easily two times better than the nearest competitor’.”*

- Ryan Kier, Senior Electrical Engineer at Teal

**Our latest state-of-the-art ultra wide-angle computer vision camera for Unmanned Aerial Systems (UAS) is now out of the lab.**

Immervision’s latest UAV (Unmanned Aerial Vehicle) Low-Light Navigation Camera Module is a ready-to-use camera module designed for the autonomous and semi-autonomous navigation of UAVs in all lighting and environmental conditions, with high performance in low-light conditions, both outdoor and indoor. After a two-year development period as part of the Blue UAS Framework, Immervision is excited to announce that this innovative new camera module is now available to drone vendors and camera integrators outside of the DIU Blue UAS program.



# KEY FEATURES AND BENEFITS

- Ultra wide-angle Panomorph lens with smart pixel management, providing a 190 degrees field of view (FoV) with enhanced image quality.
- The 190 degrees field of view captures more information than most cameras available for such applications and allows manufacturers to reduce the number of sensors required to monitor the 360 degrees surroundings of the drone
- With a 5 mega pixel image resolution, the pixel density is ideal for embedded computer vision applications, such as object detection, SLAM (Simultaneous Location and Mapping) and visual-inertial odometry.
- Its sensitivity to low light improves the performance of navigation algorithms, allows for secure navigation from dawn-to-dusk and can eliminate the need to have to have additional illuminator source.

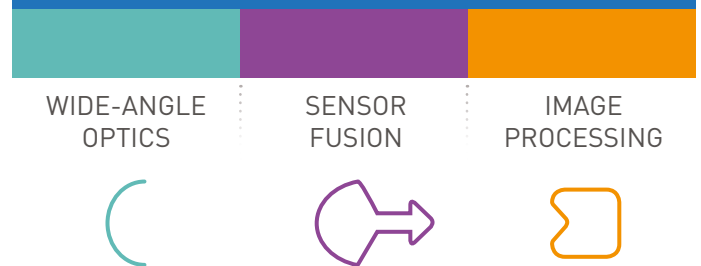
Looking for technical specifications?  
Contact an expert at  
[info@immervision.com](mailto:info@immervision.com)

The module is an off-the-shelf solution, which means it's ready for integration. A camera with this level of quality would typically be developed on-demand by a drone manufacturer. These custom developments require time and money and comes with a certain level of risk.

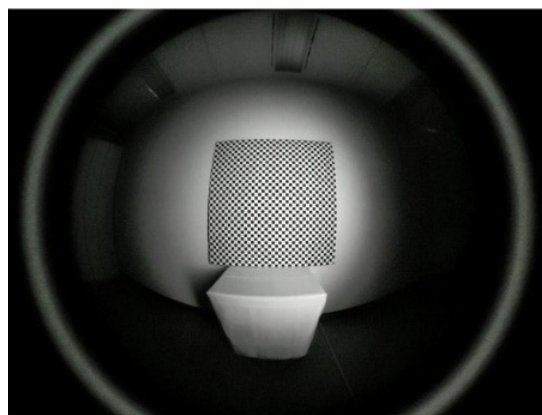
The Immervision camera module is supported out-of-the-box by industry leading robotics platforms such as the Qualcomm® Robotics RB5, Qualcomm® Flight RB5 5G, and ModalAI® VOXL® 2. Drivers are available to facilitate the evaluation and minimize the integration effort by the drone providers.

Immervision provides the full pipeline to feed your application with the best pixels, from the optical elements to the processing software. Along with the camera module, an advanced image processing library is available with features such as dewarping, sensor fusion, camera stitching, image stabilization, and more.

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**15 Lux (dark sky)**



**3 Lux (Dark limit of civil twilight)**



**0.5 Lux (Deep twilight)**

*Caption: With the Immervision camera module, objects can be detected at very low illumination.*





**SEE MORE,  
SMARTER**



# THE BLUE UAS FRAMEWORK EXPLAINED

Immervision is proud to be part of the Blue UAS framework – a program that is well-known and highly respected within the drone and UAV ecosystem. For those unfamiliar with the term, Blue UAS is an American governmental framework from the DIU (Defense Innovation Unit), a Department of Defense (DoD) organization that accelerates commercial technology with the goal to provide a lift of competitive, healthy, sustainable and trusted sUAS components for various commercial and governmental applications.

After a lengthy evaluation process with various drone technology suppliers, in 2020 the DIU decided to fund the development of the camera module by Immervision, due to our unmatched expertise in designing and manufacturing a complete ultra-wide-angle camera.

During the development process, Immervision collaborated with various drone providers to ensure the solution meets all requirements of the drone ecosystem, such as providing a compact, low-weight camera module with low-battery consumption able to operate under low-light conditions.



Blue UAS: Interoperable, NDAA compliant UAS components and software that provide options for Government and industry partners.





# A COMPLETE, READY-TO-USE AND OFF- THE-SHELF SOLUTION FOR ANY DRONE PLATFORM

Now that development is complete and the product meets the highest standard, the camera is available off-the-shelf to drone vendors outside of the DIU UAS program for developing commercial applications. Although developed for drone platforms, it is easily implemented into other platforms and well suited for other navigation applications such as land vehicles, water vessels, robots, etcetera.

The camera module is already being adopted by manufacturers, including Teal Drones, a leading drone provider from the Blue UAS Cleared list. Companies developing drones or vision systems for drones for commercial and governmental applications can contact Immervision directly to access this component. An demonstration kit is available to interested parties.



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