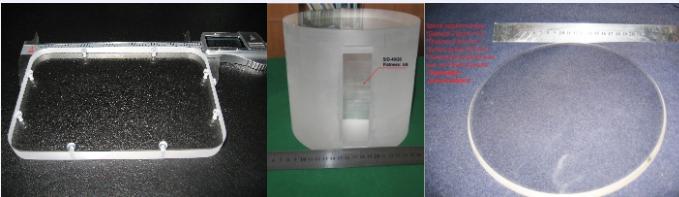


## OUR PRIVILEGE



### Large Sapphire Window

ARD produces a wide range of large aperture sapphire windows with diameter up to 300mm, both in standard quality as well as with high precision surfaces. Our technology gives us ability to make sapphire window with surfaces quality S/D-20/10, and surface flatness up to lambda/15.

Aside from industrial use these windows are commonly utilized in anti-ballistic missile and missile warning & protection systems, homeland security applications and in countless EO systems R&D, KAGRA, VIRGO, The Boltzmann Project etc.



### Flow tubes and reflectors

ARD optics offers a wide range of standard and specific flow tubes and reflectors for lasers. We manufacture laser flow tubes and reflectors from the following materials: Pyrex Glass, Borofloat 33, Fused Silica, Cerium Doped Fused Silica, Samarium doped Glass S7005 (5% Sm) S7010 (10%Sm). We also produced flow tubes coated with silver (high reflection Ag) and protected with several metallic layers. Any reflector or a flow tube can be produced in accordance with customer's required specification.

## ABOUT US



The founders of ARD-OPTICS, established in Armenia in 2007 are specialists in optical production sphere of three countries: Armenia, Russia and Germany.

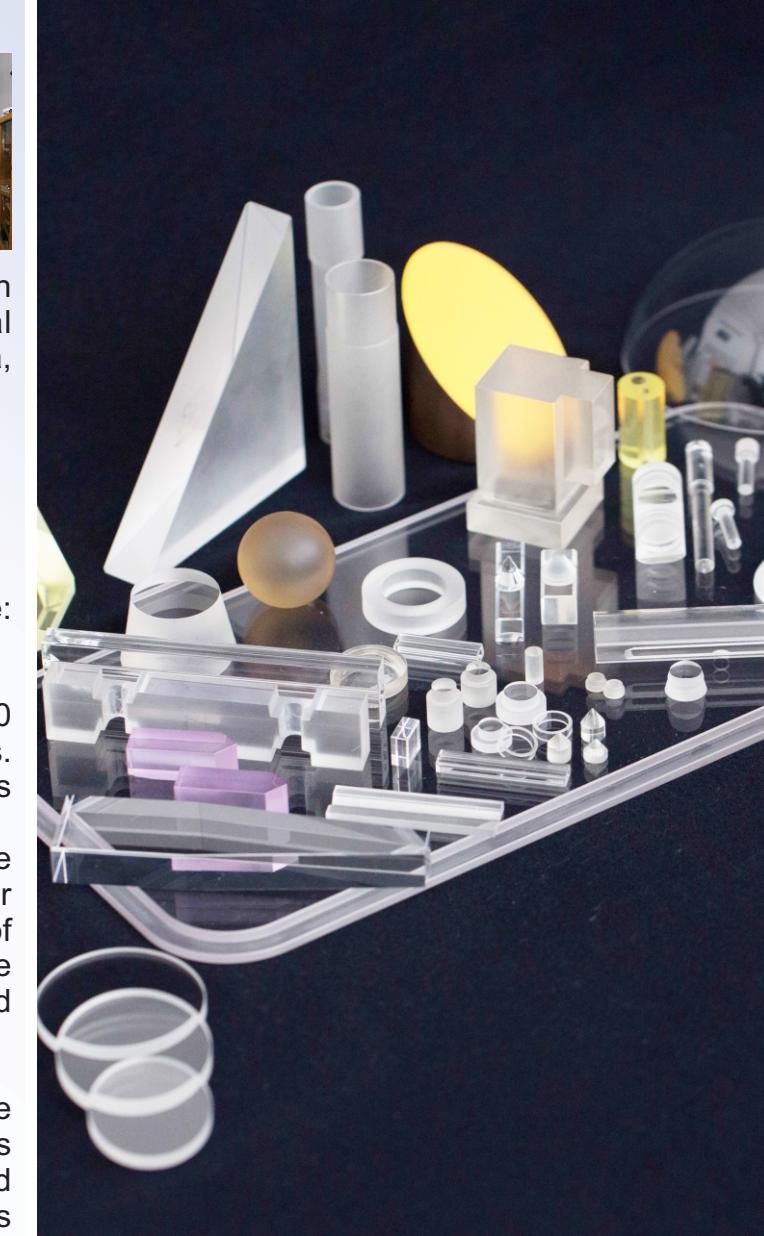
Ruben Babasyan (the director of the company)  
"Opto-Technological Laboratory" JSC  
Impex HighTech GmbH.

Currently, the shareholders of the company are:  
Ruben Babasyan and Impex HighTech GmbH.

At the present production facility located in 900 Sq.meters, with a machinery park over 120 units. Standard 1-4 spindle flat grinders/polishers machines.

Today we are equipped to produce a wide range type of optical elements made of sapphire, other optical crystals, and glasses. The staff consists of more than 35 employees which are both long-time experienced professionals and young and innovative specialists.

At the present time, ARD optics cooperate with 100 different companies from the 35 countries in the world. Nowadays ARD Optics established its position as a reliable source for modern optics elements supplier.



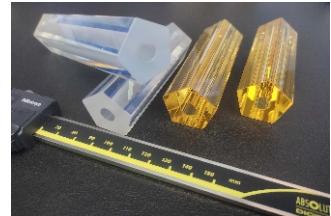
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*Competence in Optics*

## Technological Ability



The company has state of the art equipment and uses most innovative processing technologies. The emphasis of the company is the manufacturing of optical elements from crystals and glasses, including the complete production line. Every day the company team try to improve production and technology.

ARD production capacity ranges from prototype quantity to mass production.

We produce optical components of sapphire, YAG, GGG, fluorides, other crystals, ceramics, and optical glasses.

- precision optical windows for lasers
- large aperture sapphire optics
- sapphire and glass domes
- sapphire and glass light guides commonly used for cosmetic
- sapphire components of irregular shapes: cones pyramids wedges
- sapphire blanks of different configuration
- sapphire and glass tubes,
- Reflectors and flow tubes, filters for laser cavity



## Processing

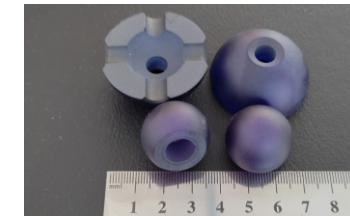


### Our Equipment allows us to process:

- plane optics from few mm sizes up to 300mm & 400mm in cross section.
- cutting crystals and glasses from a few mm to 200mm
- holes drilling is possible from a part of mm to 50mm
- laser mirror polishing quality up to 250mm
- grinding of hemispherical surfaces up to 250mm
- inner and outside polishing of tubes and cylindrical surfaces up to 400mm lenght.
- we can configurate complicate bevels, e.g. step windows
- surface flatness up to Lambda/15
- surface accuracy of large windows up to S/D-20/10 according to MIL PRF-13830B standard.
- polishing prisms with angle accuracy of 2 arcsecond.
- cylindrical surfaces up to 400mm lenght
- different types of irregularly shaped elements according to the customer's request.



## Opportunities



\*Sawing, cutting of glasses and crystals.

\*Diamond drilling.

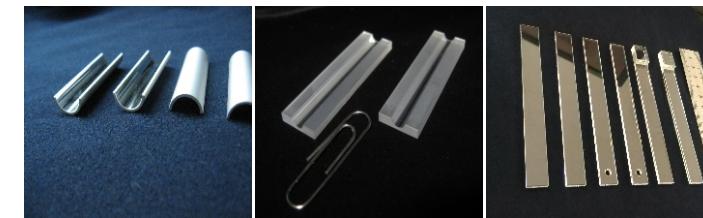
\*Spherical, cylindrical, conical, flat gridding.

\*Double side lapping, polishing

\*Chemical mechanical polishing

\*Milling of the irregular shapes

\*Metallisation, e.g. silvering of surfaces



The company has a long time experienced quality control inspectors. All products accompanied with quality protocol reports.

ARD has an ability make interferometric measurement also on flat and spherical surfaces, by using interferometer **Zygo MK-II**.

There are many measuring devices such as measuring microscopes and goniometer which are allowed us to measure the linear dimensions with accuracy up to 0.002mm & angular dimensions up to 5 arcsec.

