

## INFRARED RADIATION SENSORS



Uncooled InAs photodiode prototypes



Optical cryostat with germanium window for cooled InAs and InSb photodiodes

Stage of Development.  
Suggestions for Commercialization

IRL5, TRL4  
Manufactured and sold, upon request

### Areas of Application

The sensors are to be used at R&D laboratories and metallurgical plants for registration of infrared radiation in the spectral range of 3–5  $\mu\text{m}$ , and in optoelectronic devices for monitoring hazardous and explosive gases

### Specification

Parameters	Values of technical parameters	
	InAs	InSb
Operating mode:	Photovoltage	
Operating temperature, K	77, 300	77
Spectral band, $\mu\text{m}$	1.5–3.1 (77 K) 1.5–3.7 (300 K)	1.5–5.3
Peak wavelength, $\mu\text{m}$	2.9–3.0 (77 K) 3.4–3.5 (300 K)	5.2
Current sensitivity, A/W	1.2 (77 K) 0.8 (300 K)	2.2
Specific detectivity at the peak wavelength, $\text{cm Hz}^{1/2} \text{W}^{-1}$	$5 \cdot 10^{11}$ (77 K) $2 \cdot 10^9$ (300 K)	$4.8 \cdot 10^{10}$

### Advantages

The sensors have no analogs in Ukraine and are import-substituting products. As compared with commercial photodiodes produced by leading manufacturers of similar products, they have a lower cost at comparable threshold parameters

### IPR Protection

IPR1, IPR3

### Contact Information

Anna S. Stanetska, V.Ye. Lashkaryov Institute of Semiconductor Physics of the NAS of Ukraine;  
+38 044 525 60 43, +38 099 292 66 60, e-mail: stanetska\_anna@ukr.net