

Webinar

Climate Change: IR detection will make the difference! Questions & Answers

	Questions	Answers by Reuniwatt	Answers by Lynred
1	Are your IR detectors sold worldwide?		Lynred is active in many countries worldwide, notably Japan, India and the US.
2	Do you already address the Photovoltaics market with your IR technology? For example, using IR cameras to manage the key issue of 'Hot Spots' on PV modules of solar factories using UAV-HAV (Unmanned Aerial Vehicle -High Altitude Vehicules) like drones or even satellites, if possible?		Not yet but this is an application that could be envisaged in the short term
3	For CH4 and CO2 detection the SWIR band 1.55 - 1.7 μm is used. InGaAs is just not good enough, when the sensor is cooled for better performance. MVT with a cut-off of 1.8 μm would be ideal. Does LynRed have such sensors now, or will you have them in the near future?		We have sensors with 2.5 μm cut-off wavelength which is beyond the 1.8 μm need.
4	COBRA is 20 μm in SWIR? Or 2.0 μm ?		The COBRA detector has a pixel pitch of 20 μm and is sensitive in terms of spectral range between 0.9 and 2.5 μm .
5	What are the constraints for your detectors used for satellites in terms of resistance to radiation, temperature variation ...?		IR detectors have to survive space environment and in particular high radiation levels. These levels depend on the orbit on which the satellite is located as well as the integration mechanism which is around

		<p>the detector because this mechanism constitutes a protective shielding in terms of radiation. In general, our IR detectors have to survive to a level of radiation as high as 20 krad.</p> <p>Regarding temperature, most of the time this is not a stringent constraint as the IR detector is thermalized at its operating temperature.</p>
<p>6 What are the recommended operating temperatures of the MCT sensors, in SWIR and in MWIR?</p>		<p>The operating temperature depends on the requested performance and the detector cut-off wavelength. In order to give an order of magnitude, in SWIR (0.9 to 2.5 μm), the typical operating temperature of our detector is ranging between 150 K and 200 K. Concerning MWIR spectral range (with cut-off wavelength up to 5 μm), the operating temperature is ranging between 90 K up to 110 K.</p>
<p>7 Why do Reuniwatt's SunSat™ algorithms rely on input from visible channels and not infrared?</p>	<p>The idea of SunSat™, Reuniwatt's reliable satellite-to-irradiance technology, is to provide our customers with the reliable longterm data – typically for a period of 20 years – that they require. The data from the past 20 years can offer a valuable information about the expected solar plant performance in the future. Therefore the algorithm needs to be compliant with current, but also the former generation of satellite data. The first generation of IR satellite data was not sufficiently accurate for precise irradiance estimation. However, with the high quality of newer generation IR data, our specific IR algorithms will come to more use with with the launch of the first MTG-I satellite in 2022 and next generation meteorological satellites.</p>	

<p>8 How easy to use/integrate your service with VPP platforms? Would that be an option when using IR cameras on-site, similar to Pyranometers?</p>	<p>Regarding their cost-benefit ratio, Reuniwatt's IR camera Sky InSight™ is most interesting for nowcasting the production of largescale solar plants. For VPPs, we recommend our products HourCast™ and DayCast™, which can of course be combined with VPP platforms.</p>	
<p>9 Have you verified the improvement in the efficiency of a solar power plant thanks to your “real-time” technology compared to all systems allowing to manage the cloud shadowing and the Maximum Power Point Tracking for PV modules?</p>	<p>Particularly for remote/off-grid plants where the carbon footprint of fossil-fuel based energy generation can be improved by adding-on solar energy, our technology helps to further reduce carbon emission. It allows to ramp up generators just in time to encounter a drop in solar power, and keep overall spinning reserves at a minimum, therefore reducing fuel costs, emissions and prolonging the lifespan of the equipment.</p>	

If you have further questions, don't hesitate to contact the speakers of this webinar:

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