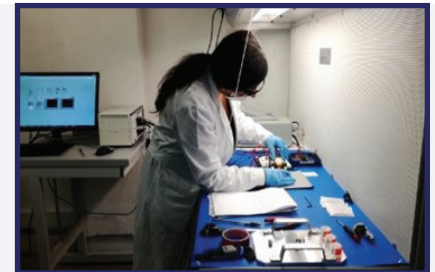


PRODUCT BRIEF

Argotec R&D unit carries out constant research on highly innovative thermal control solutions for space and terrestrial applications. In this sense, Argotec has built over the years a deep experience in the design, integration and testing of two-phase fluidic systems for heat management, such as heat pipes, loop heat pipes, pulsating heat pipes. All these technologies exploit the phase change of the working fluid to transfer high heat flows over short, medium and long distances in a completely passive way. Particular attention is given to the use of low toxicity working fluids, while ensuring the performance requirements imposed. The use of low-toxicity fluids allows to install and operate the thermal system within manned space modules and in all those application scenarios where human presence is expected.



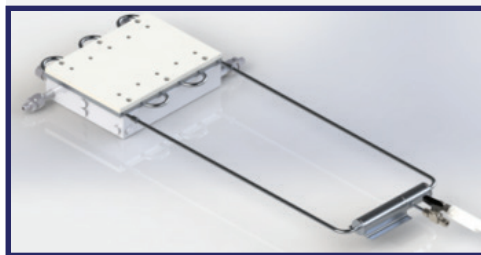
AXIAL HEAT PIPE

Used to transport dissipated heat over short to medium distances, Heat Pipes provide exceptional thermal stability in a reliable and totally passive way, even in micro-gravity conditions. Argotec conducted an intense ground-based experimental campaign, followed by an in-orbit validation aboard the ISS (Thermal Exchange, 2016-2017). The Heat Pipes manufactured and tested by Argotec reach lengths of 350 mm with a maximum transferable power of 200W.



LOOP HEAT PIPE

Loop Heat Pipes are systems capable of transporting large thermal loads over long distances with a minimum temperature difference between the hot and cold interface. The working fluid is circulated by effect of capillary forces generated by a porous septum inserted inside the evaporator. Argotec has developed Loop Heat Pipe for space applications (2-PHASE, HEAT, LHP500/1000/2000). Argotec has manufactured and tested LHPs that reach 2m in length with maximum power of 300W.



PULSATING HEAT PIPE

Thanks to their thermal efficiency, constructive simplicity, lightness and reliability, Pulsating Heat Pipes represent a valid substitute for conventional thermal systems in high power density applications. PHPs can be used in the thermal control of nano satellites, electronic devices, computers, domestic and industrial systems. Argotec is able to produce PHP using both conventional and additive manufacturing technologies, with dimensions up to 1m x 1m and powers from 20W to 150W.

