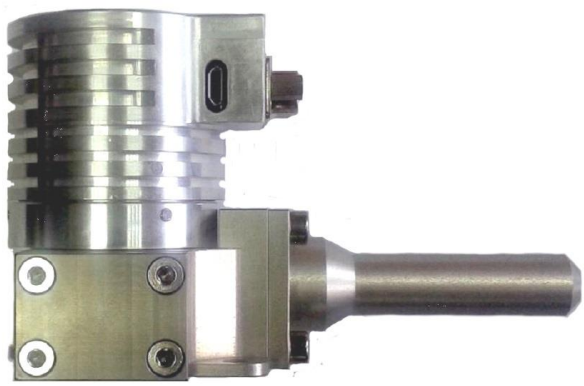
Experts in Cryocooling

INTEGRAL STIRLING COOLER – SRI401
(0,5W@80K)



The SRI401 cooler is intended to cool Infra-Red detectors but can also be used for cooling in other applications.

Le-tehnika's Integral rotary Stirling cryocooler model SRI401 was developed for this kind of applications with an aim of a long time (MTTF) and a small power consumption and small noise. This model is a member of a new more reliable family of rotary driven Stirling cooler with main improvements on compressor side and also on expander.

The concept of the direct integration of a Dewar-detector on a cooler cold finger (DDCA) was implemented by the Expander design. The operation of the Stirling compressor driven via DC brushless motor is smooth and silent with low vibrations and acoustic noise. Motor windings are outside of the working gas to prevent its contamination and prolong the lifetime and reliability of the cooler.

Small digital electronic driver with an onboard temperature controller is also fully programmable via RS232 port for a customer mission profile. Over-current protection, standby mode and remote shutdown are available. The electronic board is integrated inside stator housing, which can have arbitrary orientation. Different motor connections are possible from cable to more classical DB9 connector.

PERFORMANCE SPECIFICATIONS:
(for an ambient temperature of 23 °C)

Input Voltage: ..... 18-28 VDC
Typ. Steady State Input Power: ..... (230mW @77K @ 23°C): 7W Typ.
Cooldown time to 80K (200J): ..... < 5 min
Maximum Input Power Required: ..... 17 W (during cooldown)
Operating Ambient Temperature Range: .....- 40 °C to + 71 °C
Weight: ..... < 470gr
MTBF: ..... > 10.000h (Demonstrated)
> 20.000h (Goal)

Meets Environmental Conditions per MIL-STD-810D

Optional cold finger designs are possible upon request.

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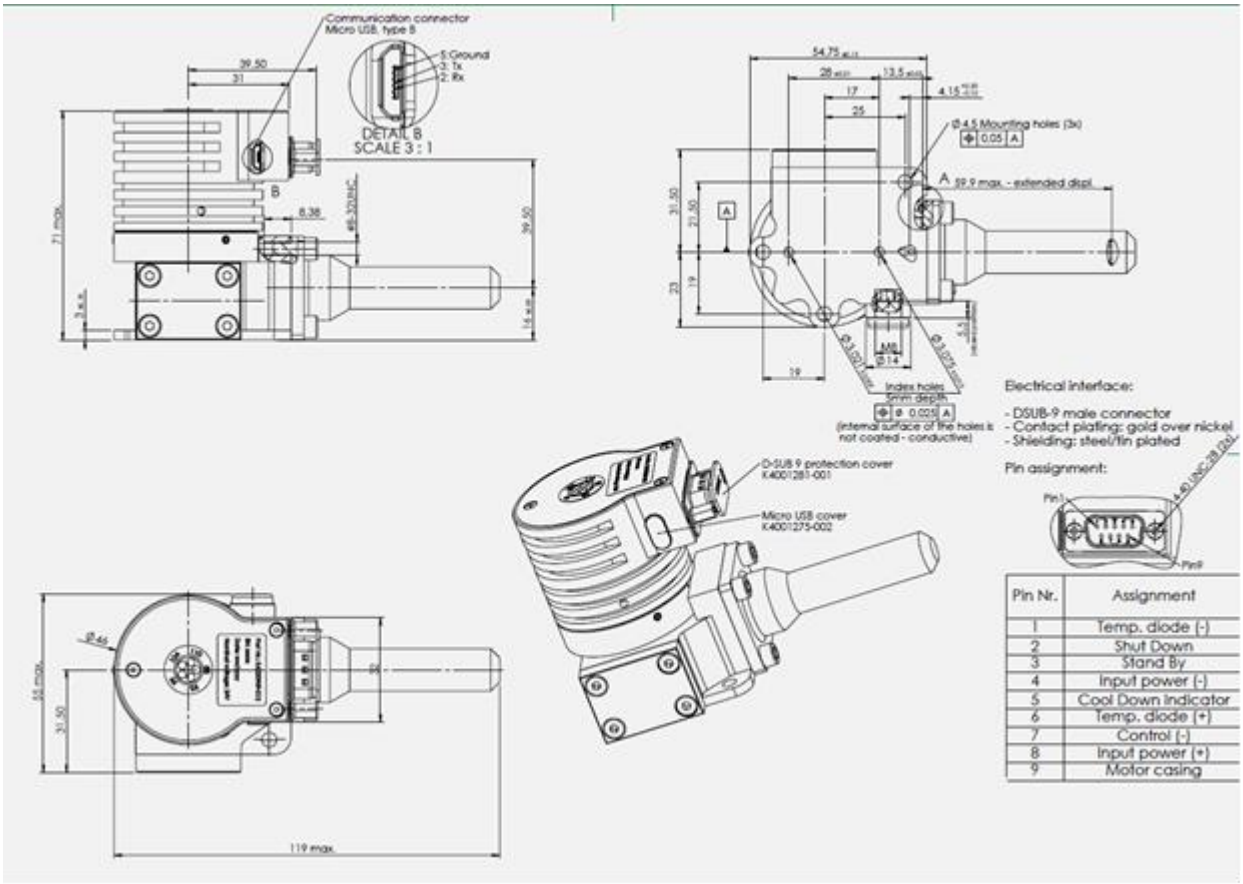
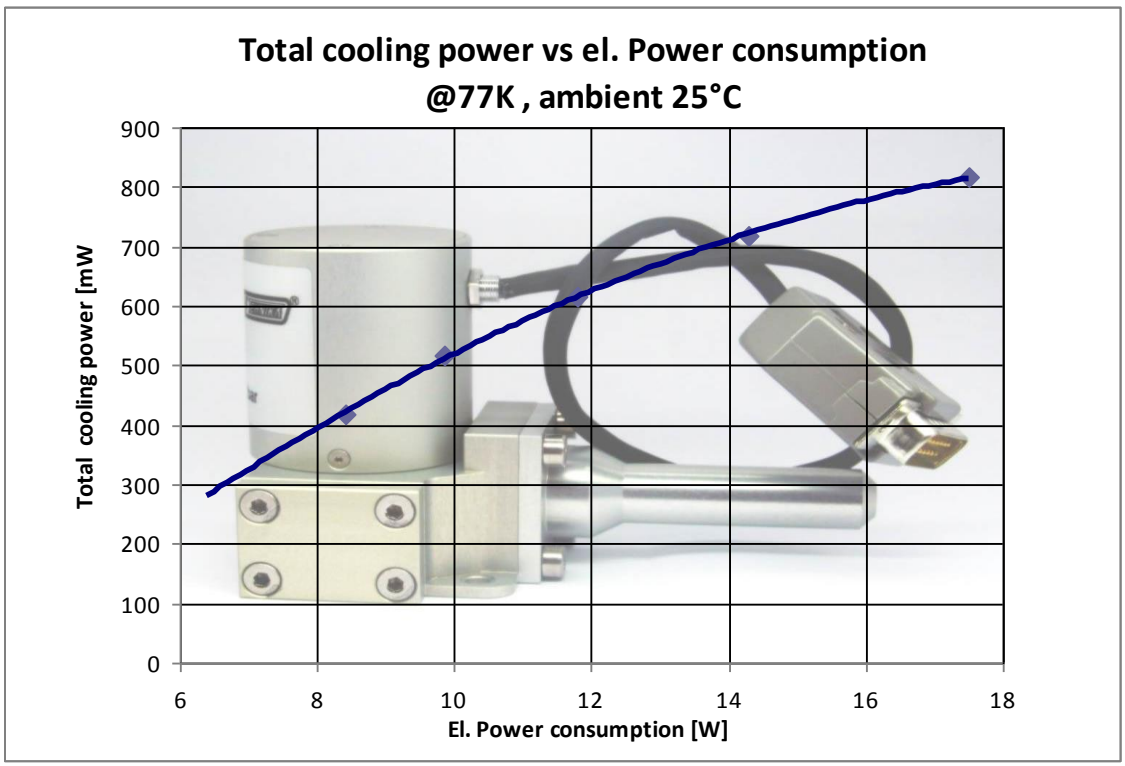
Dimensions:



Pin Nr.	Assignment
1	Temp. diode (-)
2	Shut Down
3	Stand By
4	Input power (-)
5	Cool Down Indicator
6	Temp. diode (+)
7	Control (-)
8	Input power (+)
9	Motor casing

Electrical power consumption for different total cooling powers at 77K and 23°C ambient:



Specifications are subject to change without notice

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