



STIRLING
CRYOGENICS

Stirling SPC-1T Cryogenerator

Remote cooling by He circulation at 15-60K

Stirling Technology

For over sixty years Stirling Cryogenics has been designing and manufacturing Cryogenerators for extreme low temperature cooling, serving customers all over the world under all possible conditions. This experience is incorporated in one of our most common Cryogenerators, the SPC-1T (Stirling Process Cryogenerator). The SPC-1T is a two-stage Cryogenerator that provides cooling power in the range of 30-175W @ 15-60K.

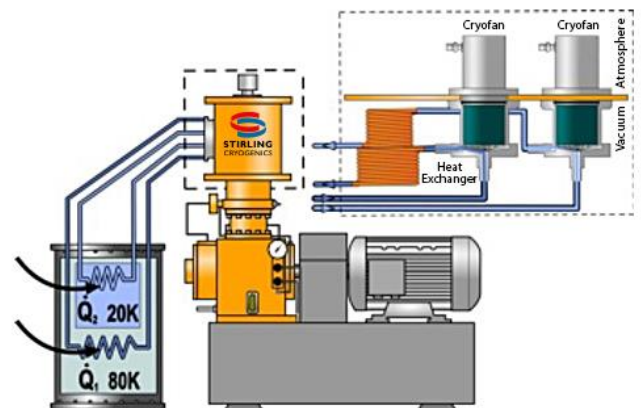
The cooling power of the SPC-1T is created by the so-called reversed Stirling Cycle: compression and expansion of a working gas in a closed cycle by mechanical pistons. This cooling power becomes available in a heat exchanger, in which energy is extracted from the flow of helium. This flow will cool the application connected.

The Stirling Cryogenics Cryogenerator operates stand-alone. It's driven by an electrical motor and has its own control unit.



SPC-1T helium loop cooling

The SPC-1T is mostly used to remotely cool an application by means of a flow of pressurized cold helium gas. The helium gas is first cooled in the coldhead of the Cryogenerator to e.g. 20K and will then cool the application while flowing through it. If useful, a separate second loop on the first stage of the Cryogenerator can be used at 80 K for e.g. shielding or pre-cooling. Other configurations are also possible.

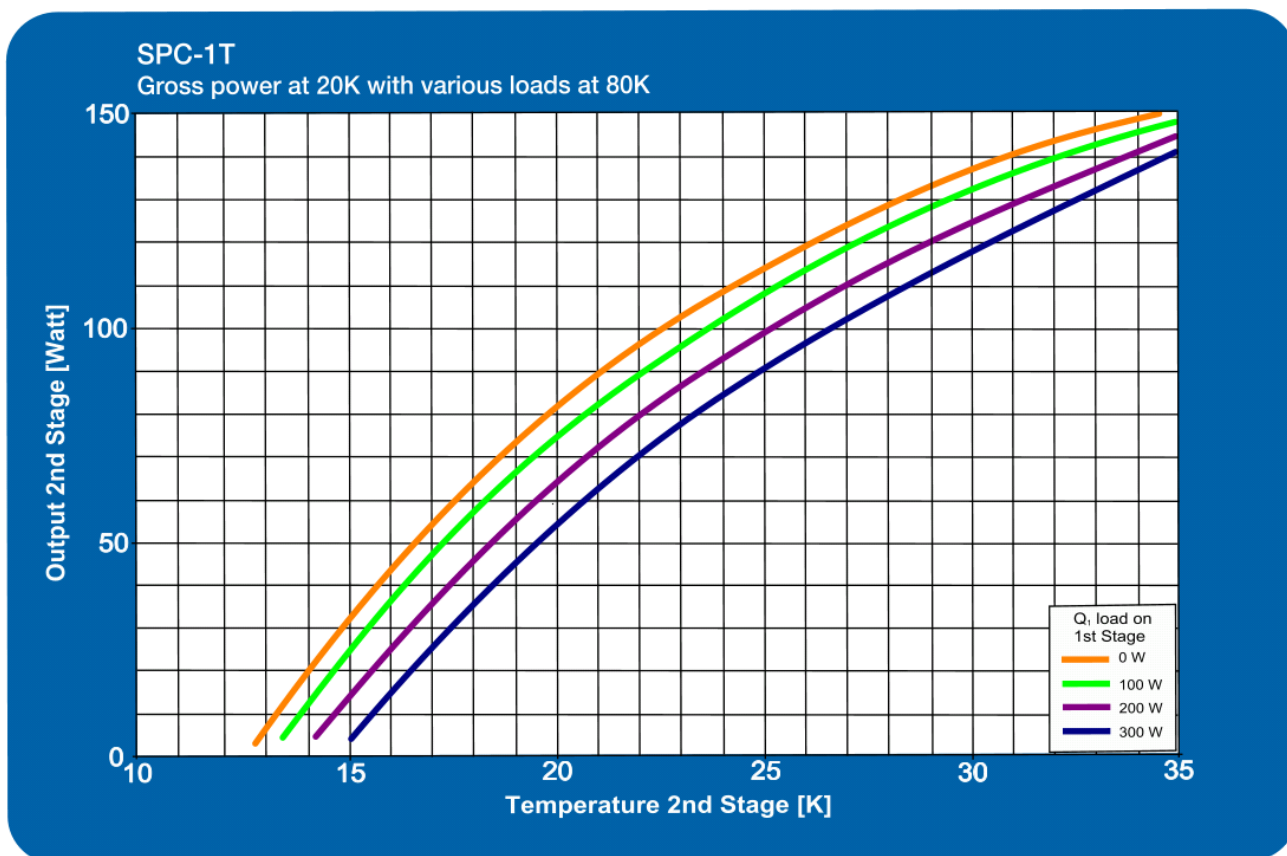


To circulate the helium, the Stirling SPC-1T Cryogenerator is equipped with integrated CryoFans (cryogenic circulators) in the vacuum space of the cold head. In many cases this eliminates the need for a separate cryostat. The CryoFans are selected based on the heat load, flow and dP of the customer's system.

Typical SPC-1T features

- Low maintenance interval (> 8.000 operating hrs)
- Low noise level
- Connectable to all power supplies
- Available in explosion proof execution
- Different coldhead/heat exchanger configurations possible
- Worldwide service & maintenance
- More than 50 years reliable track record

SPC-1T Specifications



Graph conditions				Helium gas flow & dP	
Helium pressure	30 barg	Cold production	See graph	CryoFan size will be selected depending on process conditions	
RPM	1455	Power consumption	9.5 kW @ 20K		
Water temperature	15°C	Environmental conditions	Enclosure required 5°C - 45°C 20% - 95% humidity		
Water cooling loop (20% glycol added)	1.200 l/hr @ dP of 2.5 bar			For more information	
Specifications				www.stirlingcryogenics.eu	
Power supply	3ph 400V, 50Hz 3ph 480V, 60Hz Others upon request	Weight	650 kg		
Max He loop pressure	30 barg	Soundlevel	< 72 dBA		
		System size (l x w x h)	1,0 x 0,7 x 1,75 m		