Stirling SPC-1 Cryogenerator

Reliable cryogenic cooling power

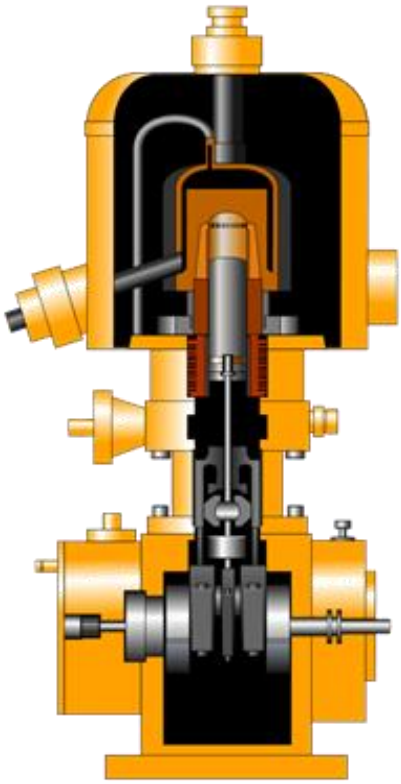
Stirling Technology

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-1 (Stirling Process Cryogenerator). The SPC-1 is a single stage Cryogenerator that provides cooling power in the range of 0,8-11kW @ 40-160K.

The cooling power of the SPC-1 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, where energy is extracted from the process gas.

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

SPC-1: liquefy, cool or sub-cool



The SPC-1 is often used to produce liquid nitrogen for different cooling purposes, but is also widely used to produce other liquid gases or to create a cryogenic cooling loop.

The SPC-1 can have the following modes of operation:

- (Re-)Liquefy gas into a cryogenic liquid
- Sub-cool a cryogenic liquid flow
- Cool a gas flow at cryogenic temperatures

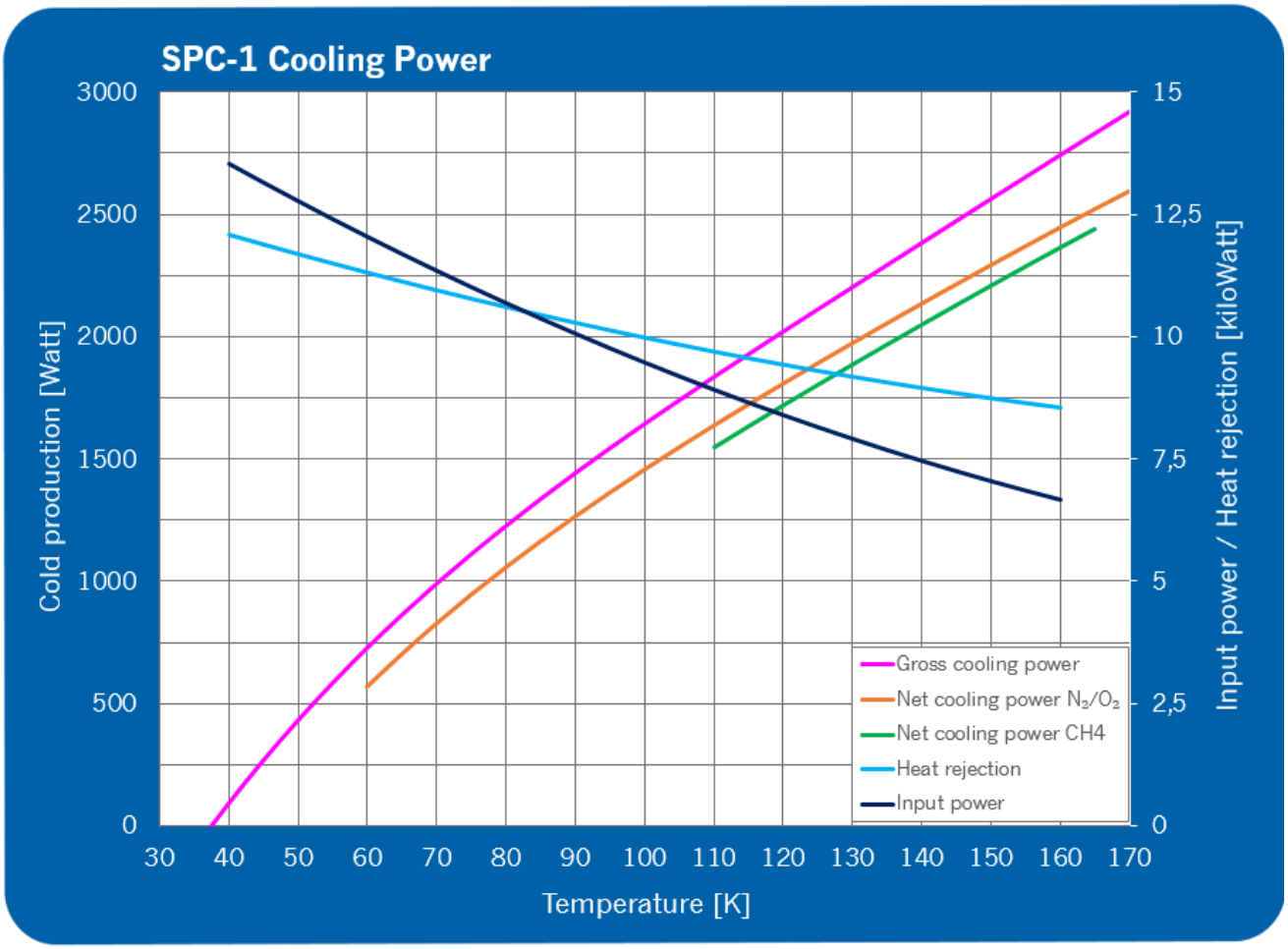
Produced liquid cryogens are nitrogen, methane, oxygen, argon, etc.
These can also be used as fluid in a cryogenic cooling loop.
For lower temperature, mostly pressurized helium gas is used.

Depending on the customer's application, the configuration of the SPC-1 will be determined.

Typical SPC-1 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-1 Specifications



Graph conditions	
Helium pressure	30 barg
RPM	1455
Water temperature	15°C
Water cooling loop (20% glycol added)	1.200 l/hr @ dP of 2.5 bar
Specifications	
Power supply	3ph 400V, 50Hz 3ph 480V, 60Hz Others upon request
Max process gas pressure	20 barg

Cold production	See graph
Power consumption	See graph
Environmental conditions	Enclosure required 5°C - 45°C 20 % - 95% humidity
Weight	550 kg
Soundlevel	< 72 dBA
System size (l x w x h)	1,0 x 0,7 x 1,65 m

Most common applications
Nitrogen
Methane
Argon
Oxygen
Helium for gas cooling loop
For more information
www.stirlingcryogenics.eu