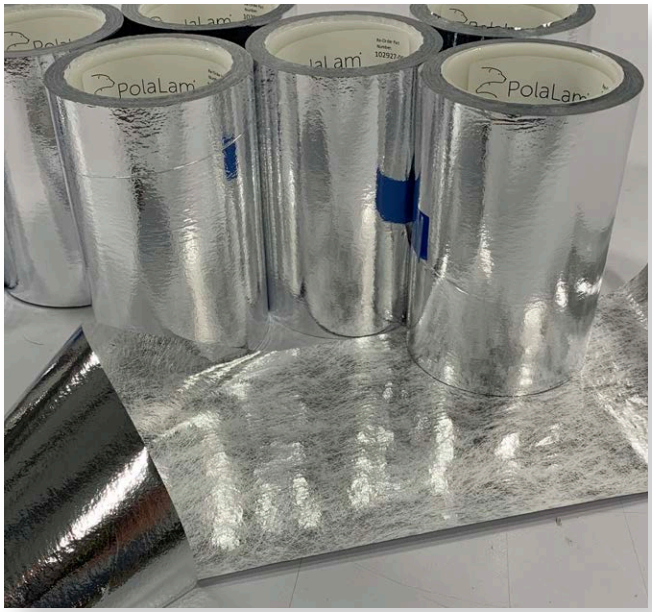
PolaLam™

Cryogenic Superinsulation Product

PolaLam™ is a cryogenic superinsulation **subsystem** that is ideal for basic insulation applications like pipe-wrapping that require ease of handling and increased tear resistance. Constructed of a single reflector layer and single low-conducting spacer layer that are lightly bonded together.

Features:

- Ultrathin polyester film reflector layer to provide efficient thermal performance with minimal weight and stiffness.
- Reflector layer is thermally bonded to a 5.0 mil (127 µm) thick spunbond polyester spacer to provide a uniform low conducting barrier.
- PolaLam™ is provided in standard material widths of 2, 4, 6, and 56 inches and in standard roll lengths of 100, 200, and 500 linear feet. Additional widths and lengths available by special order.
- Additional film treatments:
  - Perforations – offer the ability to decrease vacuum pump down time.
  - Single aluminized coating – can reduce conductive heat transfer from reflector layer to low-conducting spacer.
- All layers are 100% polyester without binder to reduce outgassing contaminants.



Product Number*	Roll Width (Inches)	Aluminum Coating	Perforated
PL001-56-XXX	56	Both Sides	No
PL001-2-XXX	2	Both Sides	No
PL001-4-XXX	4	Both Sides	No
PL001-6-XXX	6	Both Sides	No
PL002-56-XXX	56	Both Sides	Yes
PL003-56-XXX	56	One Side	No
PL004-56-XXX	56	One Side	Yes

*XXX denotes length of roll. Can be either 100, 200, or 500 Linear Feet

Material Properties

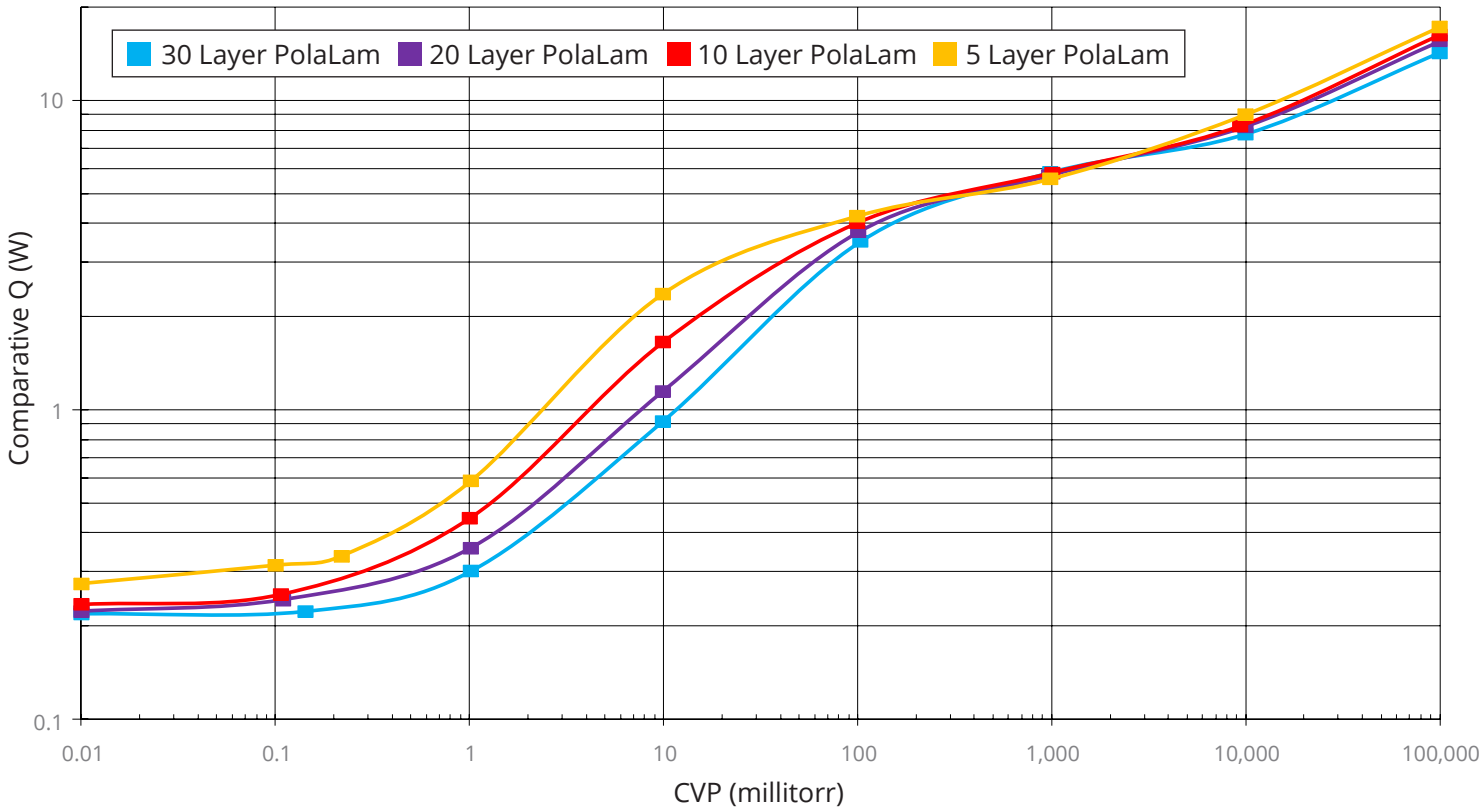
Operating Temperature, °F(°C)	-452 (-269) to +250 (121)
Areal Density per layer pair, kg/m2	0.034
Tear propagation resistance (Per ASTM D 2261), N	9.9
Thickness, mm	0.14

Applications

- Cryostats
- Storage Dewars
- Cryogenic Cabling
- Vacuum-Jacketed Piping
- Large-Scale Cryogenic Storage Tanks
- Quantum Computers
- MRI Machines

Thermal Performance

Comparative Thermal Power (Watts) to Cold Vacuum Pressure (CVP)
(300K Warm Boundary Temp, 77K Cold Boundary Temp)



Usage

- With easier handling and increased tear resistance, PolaLam™ offers more efficient installation than discrete reflector and spacer combinations.
- PolaLam™ offers improved thermal performance over blankets that don't use a spacer material.
- 2, 4, and 6 inch wide rolls are best utilized for spiral-wrapping piping.
- Layers of PolaLam™ can be stacked to create an MLI layup that can be used to make discrete parts.