



## Tyrol Series PH+ Windows and Doors

Alpen is committed to leading the industry through innovation, supporting a wide range of high performance building communities and providing **validated** proof that our product performance matches our claims. As the **first North American manufacturer to achieve dual PHIUS and PHI certifications**, we understand the challenges of designing and building a passive house certified project, and appreciate the extra lengths owners and consultants go through to be responsible stewards of our planet by promoting passive house principles.

### Benefits of Tyrol Series PH+ with Heat Mirror

- Thick-wall extrusions and compression seals deliver best-in-class sound attenuation STC/OITC ratings
- Custom crafted in the U.S., with short lead times and local servicing
- Highly knowledgeable and consultative support
- AAMA rated for residential, commercial and multifamily applications
- Award-winning, fiberglass-reinforced, European style, Rehau 4700 Geneo profile
- Low-e coating helps drive down U-values for high performance insulation
- Reduced exterior noise penetration



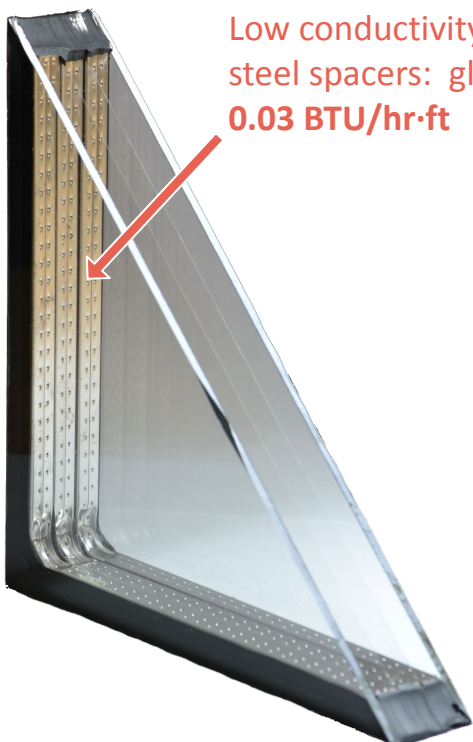
## Achieve window U-values as low as 0.11 with Heat Mirror glass and fiberglass-reinforced uPVC frames!

### Glazing Data

Glazing Type	Overall Thickness [in]	U <sub>g</sub> [BTU/hr-ft <sup>2</sup> ·°F]	SHGC	Visible Transmittance	U <sub>w</sub> (Tilt-Turn) [BTU/hr-ft <sup>2</sup> ·°F]
Balanced-6 PH+	1-5/8"	0.095	0.37	0.56	0.13
SolarControl-6 PH+	1-5/8"	0.106	0.28	0.57	0.14
HighGain-6 PH+	1-5/8"	0.113	0.54	0.70	0.14
HighGain-6 Pro PH+	1-5/8"	0.102	0.51	0.67	0.13
Balanced-9 PH+	1-5/8"	0.066	0.33	0.49	0.11
Solarcontrol-9 PH+	1-5/8"	0.071	0.25	0.51	0.11
HighGain-9 PH+	1-5/8"	0.077	0.45	0.62	0.12
HighGain-9 Pro PH+	1-5/8"	0.070	0.44	0.60	0.11
TR-11 PH+	1-5/8"	0.060	0.21	0.38	0.106

Center of glass down to  
**0.066 BTU/hr-ft<sup>2</sup>·°F**

Low conductivity, stainless  
steel spacers: glass edge  
**0.03 BTU/hr-ft**



### Frame Data

Frame Type	Frame Dimension [in]	U <sub>f</sub> [BTU/hr-ft <sup>2</sup> ·°F]
PH+ Tilt Turn	4.53"	0.13
PH+ Fixed	2.83"	0.12
PH+ Swing Door	5.56"	0.14
PH+ Low Profile	4.50"	0.19

These charts are a small representative sample of Tyrol Series PH+ products available for passive house. For additional options to fit your project's needs and optimize your energy model, please visit the Alpen website at: [www.thinkalpen.com/passive-house](http://www.thinkalpen.com/passive-house)

