



**Phius Product Number:** W-101014  
**Date Last Certified:** 08/15/2023  
**THERM Files Available:** Yes

**Phius Certification Path:** Orange Path  
**Valid Through:** 08/15/2025  
**Air Leakage Test Data Available:** No



PRODUCT INFORMATION	
<b>Product Name:</b> Alpen Tyrol TR-9 PH+ Fixed	
<b>Manufacturer:</b> Alpen High Performance Products	<b>Primary Frame Material:</b> Vinyl
<b>Series:</b> Tyrol TR-9 PH+	<b>Fixed or Operable:</b> Fixed
<b>Model:</b> Tyrol TR-9 PH+ Fixed	<b>Operation Type:</b> Fixed

IGU DETAILS		
<b>Glazing Name:</b> Balanced-9 PH+		
<b>Glass Layers:</b> Quad	<b>Gas Fill:</b> Argon	<b>Spacer:</b> Alpen SS-D - Stainless Steel, Dual Seal

RECOMMENDED CLIMATE ZONES <i>(NOTE: This information is not for use in building energy models. See next section.)</i>										
Recommended Climate Zones and Whole-Window U-values by Zone, at Standard Model Size [Btu/hr·ft <sup>2</sup> ·°F]										
Climate Zone	0, 1, 2	3A	3B	3C	4A, 4B	4C, 5C	5A, 5B	6	7	8
Recommended Zones				✓	✓	✓	✓	✓	✓	✓
U-Whole-Window	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.11
Modeled Size [W×H]	47.24" × 59.06"		SHGC, Whole Window: 0.26				Condensation Resistance:			

**COMPONENT-LEVEL PERFORMANCE DATA [IP Units] | Compatible with building energy modeling tools**

U-COG   Center of Glass U-Values, by Climate Zone [Btu/hr·ft <sup>2</sup> ·°F]										
Climate Zone	0, 1, 2	3A	3B	3C	4A, 4B	4C, 5C	5A, 5B	6	7	8
U-COG Value	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
SHGC-COG   Center of Glass Solar Heat Gain Coefficient, All Climate Zones								0.33		

Frame Parameters	Left Jamb	Right Jamb	Head	Sill
Frame Section	Left	Right	Top	Bottom
Frame Width	2.91"	2.91"	2.91"	2.91"
Frame U-Value [Btu/hr·ft <sup>2</sup> ·°F]	0.13	0.13	0.13	0.13
Glazing-to-Frame Psi Value [Btu/hr·ft <sup>2</sup> ·°F]	0.0240	0.0240	0.0243	0.0242

**Frame-to-Wall Psi Value** is dependent on the on-site installation condition. *(See Phius Guidebook for more details.)*



**Phius Product Number:** W-101014  
**Date Last Certified:** 08/15/2023  
**THERM Files Available:** Yes

**Phius Certification Path:** Orange Path  
**Valid Through:** 08/15/2025  
**Air Leakage Test Data Available:** No



PRODUCT INFORMATION	
<b>Product Name:</b> Alpen Tyrol TR-9 PH+ Fixed	
<b>Manufacturer:</b> Alpen High Performance Products	<b>Primary Frame Material:</b> Vinyl
<b>Series:</b> Tyrol TR-9 PH+	<b>Fixed or Operable:</b> Fixed
<b>Model:</b> Tyrol TR-9 PH+ Fixed	<b>Operation Type:</b> Fixed

IGU DETAILS		
<b>Glazing Name:</b> Balanced-9 PH+		
<b>Glass Layers:</b> Quad	<b>Gas Fill:</b> Argon	<b>Spacer:</b> Alpen SS-D - Stainless Steel, Dual Seal

RECOMMENDED CLIMATE ZONES <i>(NOTE: This information is not for use in building energy models. See next section.)</i>										
Recommended Climate Zones and Whole-Window U-values by Zone, at Standard Model Size [W/m <sup>2</sup> K]										
Climate Zone	0, 1, 2	3A	3B	3C	4A, 4B	4C, 5C	5A, 5B	6	7	8
<b>Recommended Zones</b>				✓	✓	✓	✓	✓	✓	✓
<b>U-Whole-Window</b>	0.57	0.57	0.57	0.57	0.57	0.57	0.56	0.57	0.58	0.60
<b>Modeled Size [W × H]</b>	1.20 m × 1.50 m		<b>SHGC, Whole Window:</b> 0.26				<b>Condensation Resistance:</b>			

**COMPONENT-LEVEL PERFORMANCE DATA [SI Units] | Compatible with building energy modeling tools**

U-COG   Center of Glass U-Values, by Climate Zone [W/m <sup>2</sup> K]										
Climate Zone	0, 1, 2	3A	3B	3C	4A, 4B	4C, 5C	5A, 5B	6	7	8
<b>U-COG Value</b>	0.39	0.38	0.38	0.38	0.38	0.38	0.37	0.38	0.40	0.42
<b>SHGC-COG   Center of Glass Solar Heat Gain Coefficient, All Climate Zones</b>								0.33		

Frame Parameters	Left Jamb	Right Jamb	Head	Sill
Frame Section	Left	Right	Top	Bottom
<b>Frame Width</b>	74 mm	74 mm	74 mm	74 mm
<b>Frame U-Value [W/m<sup>2</sup>K]</b>	0.74	0.74	0.74	0.74
<b>Glazing-to-Frame Psi Value [W/mK]</b>	0.0417	0.0417	0.0422	0.0419

**Frame-to-Wall Psi Value** is dependent on the on-site installation condition. *(See Phius Guidebook for more details.)*