


Calculation based on ISO 10077-2, EN 673, EN 410

Product name: Alpen Tyrol TR-9 PH+ Tilt Turn				Center-of-glass properties				
ASHRAE/IECC /DOE North American Climate Zone	North, East, South- facing	West - facing						
			Alpen HighGain-9 PH+ No Grids					
Climate specific recommendations:		Whole-window installed U-value			Ucog-Value			
		W/m2K	BTU/hr.ft2.F	SHGC	W/m2K	BTU/hr.ft2.F		
8		0.79	0.14	0.453	0.470	0.083		
7		0.77	0.14	0.453	0.451	0.079		
6	✓	0.76	0.13	0.453	0.434	0.077		
5	✓	0.76	0.13	0.453	0.432	0.076		
4		0.76	0.13	0.453	0.434	0.076		
Marine North		0.76	0.13	0.453	0.436	0.077		
Marine South	✓	0.76	0.13	0.453	0.440	0.077		
3	✓	0.76	0.13	0.453	0.438	0.077		
2 West		0.77	0.14	0.453	0.448	0.079		
2 East		0.77	0.14	0.453	0.448	0.079		
Alpen Tyrol TR-9 PH+ Tilt Turn SS-D	FRAME				Psi-spacer		Psi-opaque	
	Frame height		U-frame		Ψ			
	mm	in	W/m2K	BTU/hr.ft2.F	W/mK	BTU/hr.ft.F	W/mK	
	Head	117	4.61	0.86	0.15	0.048	0.028	0.157
	Sill	117	4.61	0.86	0.15	0.047	0.027	BTU/hr.ft.F
left jamb	117	4.61	0.85	0.15	0.047	0.027	0.091	
right jamb	117	4.61	0.85	0.15	0.047	0.027	Grade C	

Valid through April 2022