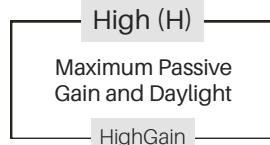
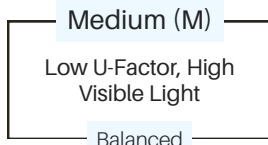
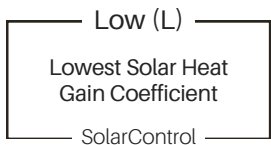






# Tyrol Series NFRC Data







# Tyrol Edge Performance Data

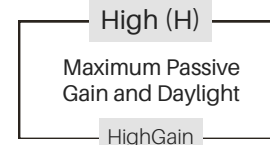
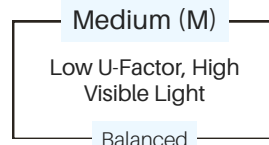
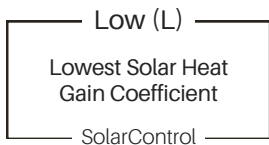
AlpenGlass: ThinGlass Triple (TGT)

TR-5 EDGE		FULL FRAME NFRC DATA						CENTER-OF-GLASS PERFORMANCE			
TYPE	GLASS PACKAGE	U-FACTOR	R-VALUE	SHGC	VT	CR	AIR INFILTRATION	U-FACTOR	R-VALUE	SHGC	VT
 Fixed	5L TGT	0.20	5.0	0.20	0.48	70	<0.01 cfm/ft <sup>2</sup>	0.18	5.4	0.25	0.60
	5M TGT	0.20	5.0	0.31	0.54	70	<0.01 cfm/ft <sup>2</sup>	0.19	5.3	0.39	0.67
	5H TGT	0.20	5.0	0.49	0.59	69	<0.01 cfm/ft <sup>2</sup>	0.20	5.0	0.60	0.74
 Tilt-Turn/Hopper	5L TGT	0.20	5.0	0.18	0.42	69	0.02 cfm/ft <sup>2</sup>	0.18	5.4	0.25	0.60
	5M TGT	0.20	5.0	0.27	0.47	69	0.02 cfm/ft <sup>2</sup>	0.19	5.3	0.39	0.67
	5H TGT	0.20	5.0	0.42	0.51	68	0.02 cfm/ft <sup>2</sup>	0.20	5.0	0.60	0.74

TR-6 EDGE		FULL FRAME NFRC DATA						CENTER-OF-GLASS PERFORMANCE			
TYPE	GLASS PACKAGE	U-FACTOR	R-VALUE	SHGC	VT	CR	AIR INFILTRATION	U-FACTOR	R-VALUE	SHGC	VT
 Fixed	SolarControl-6 TGT	0.15	6.7	0.20	0.46	77	<0.01 cfm/ft <sup>2</sup>	0.13	7.7	0.25	0.58
	Balanced-6 TGT	0.15	6.7	0.29	0.47	77	<0.01 cfm/ft <sup>2</sup>	0.13	7.7	0.36	0.58
	HighGain-6 TGT	0.15	6.7	0.46	0.57	76	<0.01 cfm/ft <sup>2</sup>	0.13	7.7	0.58	0.71
 Tilt-Turn/Hopper	SolarControl-6 TGT	0.16	6.3	0.18	0.40	76	0.02 cfm/ft <sup>2</sup>	0.13	7.7	0.25	0.58
	Balanced-6 TGT	0.16	6.3	0.25	0.41	76	0.02 cfm/ft <sup>2</sup>	0.13	7.7	0.36	0.58
	HighGain-6 TGT	0.16	6.3	0.41	0.49	75	0.02 cfm/ft <sup>2</sup>	0.13	7.7	0.58	0.71



\*Thermal performance results calculated according to NFRC. NFRC Certification is underway.



\*\*Center-of-glass values are calculated based on NFRC 2010 using LBNL Window 7.8 and represent nominal performance for glazing only.



# Tyrol Edge Performance Data

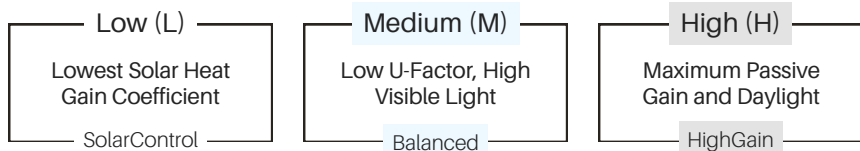
AlpenGlass: ThinGlass Quad (TGQ)

TR-9 EDGE FULL FRAME NFRC DATA								CENTER-OF-GLASS PERFORMANCE			
TYPE	GLASS PACKAGE	U-FACTOR	R-VALUE	SHGC	VT	CR	AIR INFILTRATION	U-FACTOR	R-VALUE	SHGC	VT
 Fixed	SolarControl-9 TGQ	0.12	8.3	0.19	0.43	83	<0.01 cfm/ft <sup>2</sup>	0.09	10.6	0.23	0.54
	Balanced-9 TGQ	0.12	8.3	0.27	0.44	83	<0.01 cfm/ft <sup>2</sup>	0.09	10.8	0.34	0.54
	HighGain-9 TGQ	0.13	7.7	0.44	0.53	82	<0.01 cfm/ft <sup>2</sup>	0.10	10.1	0.54	0.67
 Tilt-Turn/Hopper	SolarControl-9 TGQ	0.13	7.7	0.16	0.38	81	0.02 cfm/ft <sup>2</sup>	0.09	10.6	0.23	0.54
	Balanced-9 TGQ	0.13	7.7	0.24	0.38	81	0.02 cfm/ft <sup>2</sup>	0.09	10.8	0.34	0.54
	HighGain-9 TGQ	0.14	7.1	0.38	0.46	81	0.02 cfm/ft <sup>2</sup>	0.10	10.1	0.54	0.67

TR-11 EDGE FULL FRAME NFRC DATA								CENTER-OF-GLASS PERFORMANCE			
TYPE	GLASS PACKAGE	U-FACTOR	R-VALUE	SHGC	VT	CR	AIR INFILTRATION	U-FACTOR	R-VALUE	SHGC	VT
 Fixed	SolarControl-11 TGQ	0.10	10	0.17	0.40	74	<0.01 cfm/ft <sup>2</sup>	0.07	15.4	0.21	0.50
 Tilt-Turn/Hopper	SolarControl-11 TGQ	0.11	9.1	0.15	0.35	73	0.02 cfm/ft <sup>2</sup>	0.07	15.4	0.21	0.50

\*Thermal performance results calculated according to NFRC. NFRC Certification is underway.

\*\*Center-of-glass values are calculated based on NFRC 2010 using LBNL Window 7.8 and represent nominal performance for glazing only.



# Tyrol Contour Performance Data

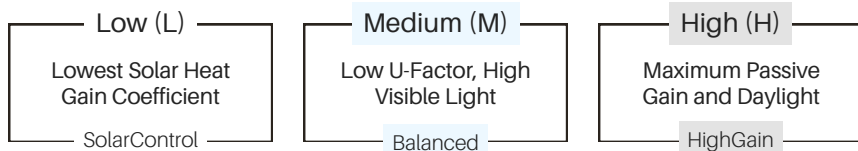
AlpenGlass: ThinGlass Triple (TGT)

TR-5 CONTOUR		FULL FRAME NFRC DATA						CENTER-OF-GLASS PERFORMANCE			
TYPE	GLASS PACKAGE	U-FACTOR	R-VALUE	SHGC	VT	CR	AIR INFILTRATION	U-FACTOR	R-VALUE	SHGC	VT
 Fixed	5L TGT	0.19	5.3	0.20	0.48	70	<0.01 cfm/ft <sup>2</sup>	0.18	5.40	0.25	0.67
	5M TGT	0.20	5.0	0.31	0.54	70	<0.01 cfm/ft <sup>2</sup>	0.19	5.30	0.39	0.60
	5H TGT	0.20	5.0	0.49	0.59	69	<0.01 cfm/ft <sup>2</sup>	0.20	5.10	0.60	0.74
 Tilt-Turn/Hopper	5L TGT	0.19	5.3	0.18	0.42	69	0.02 cfm/ft <sup>2</sup>	0.18	5.40	0.25	0.67
	5M TGT	0.20	5.0	0.27	0.47	69	0.02 cfm/ft <sup>2</sup>	0.19	5.30	0.39	0.60
	5H TGT	0.20	5.0	0.42	0.51	68	0.02 cfm/ft <sup>2</sup>	0.20	5.10	0.60	0.74

TR-6 CONTOUR		FULL FRAME NFRC DATA						CENTER-OF-GLASS PERFORMANCE			
TYPE	GLASS PACKAGE	U-FACTOR	R-VALUE	SHGC	VT	CR	AIR INFILTRATION	U-FACTOR	R-VALUE	SHGC	VT
 Fixed	SolarControl-6 TGT	0.15	6.7	0.20	0.46	77	<0.01 cfm/ft <sup>2</sup>	0.13	7.7	0.25	0.58
	Balanced-6 TGT	0.14	7.1	0.29	0.47	77	<0.01 cfm/ft <sup>2</sup>	0.13	7.7	0.36	0.58
	HighGain-6 TGT	0.15	6.7	0.46	0.57	77	<0.01 cfm/ft <sup>2</sup>	0.13	7.7	0.58	0.71
 Tilt-Turn/Hopper	SolarControl-6 TGT	0.15	6.7	0.17	0.40	76	0.02 cfm/ft <sup>2</sup>	0.13	7.7	0.25	0.58
	Balanced-6 TGT	0.15	6.7	0.25	0.41	76	0.02 cfm/ft <sup>2</sup>	0.13	7.7	0.36	0.58
	HighGain-6 TGT	0.16	6.3	0.41	0.49	75	0.02 cfm/ft <sup>2</sup>	0.13	7.7	0.58	0.71



\*Thermal performance results calculated according to NFRC. NFRC Certification is underway.



\*\*Center-of-glass values are calculated based on NFRC 2010 using LBNL Window 7.8 and represent nominal performance for glazing only.



# Tyrol Contour Performance Data

AlpenGlass: ThinGlass Quad (TGQ)

TR-9 CONTOUR		FULL FRAME NFRC DATA						CENTER-OF-GLASS PERFORMANCE			
TYPE	GLASS PACKAGE	U-FACTOR	R-VALUE	SHGC	VT	CR	AIR INFILTRATION	U-FACTOR	R-VALUE	SHGC	VT
 Fixed	SolarControl-9 TGQ	0.12	8.3	0.19	0.43	83	<0.01 cfm/ft <sup>2</sup>	0.09	10.6	0.23	0.54
	Balanced-9 TGQ	0.12	8.3	0.27	0.44	83	<0.01 cfm/ft <sup>2</sup>	0.09	10.8	0.34	0.54
	HighGain-9 TGQ	0.12	8.3	0.44	0.53	83	<0.01 cfm/ft <sup>2</sup>	0.10	10.1	0.54	0.67
 Tilt-Turn/Hopper	SolarControl-9 TGQ	0.13	7.7	0.16	0.38	81	0.02 cfm/ft <sup>2</sup>	0.09	10.6	0.23	0.54
	Balanced-9 TGQ	0.13	7.7	0.24	0.38	81	0.02 cfm/ft <sup>2</sup>	0.09	10.8	0.34	0.54
	HighGain-9 TGQ	0.13	7.7	0.38	0.46	81	0.02 cfm/ft <sup>2</sup>	0.10	10.1	0.54	0.67

TR-11 CONTOUR		FULL FRAME NFRC DATA						CENTER-OF-GLASS PERFORMANCE			
TYPE	GLASS PACKAGE	U-FACTOR	R-VALUE	SHGC	VT	CR	AIR INFILTRATION	U-FACTOR	R-VALUE	SHGC	VT
 Fixed	SolarControl-11 TGQ	0.09	11.1	0.17	0.40	75	<0.01 cfm/ft <sup>2</sup>	0.07	15.4	0.21	0.50
 Tilt-Turn/Hopper	SolarControl-11 TGQ	0.11	9.1	0.15	0.35	73	0.02 cfm/ft <sup>2</sup>	0.07	15.4	0.21	0.50

\*Thermal performance results calculated according to NFRC. NFRC Certification is underway.

\*\*Center-of-glass values are calculated based on NFRC 2010 using LBNL Window 7.8 and represent nominal performance for glazing only.