

Defender 76TS Fixed Window		
	Minimum	Maximum
WIDTH	11 in.	144 in. (white profiles) 137.5 in. (foil colour profiles)
HEIGHT	18.74 in	

Maximum NAFS Tested Sizes
98.5 in. x 111.5 in., 144 in. x 75.8 in. (width and height interchangeable)

Design Recommendations
The following design recommendations are guidelines to optimize performance, functionality, durability and budget. Discuss your project's unique requirements with your Product Consultant to ensure your Innotech products support your design and performance targets.

Specialty Sizes
Fixed Windows that are smaller than 21.65 in. and larger than 106.29 in. (height or width) are considered specialty sizes.

Very Small Windows
When designing small Fixed Windows, consider the frame to glass ratio. The Defender 76TS has a frame width of 3 in. (76.2 mm). For high-performance projects, it is recommended to limit the number of small windows as these have lower thermal performance than larger windows.

Very Large Windows
The Defender 76TS features a hybrid framing system that offers excellent structural performance at very large sizes. Very large windows may incur additional shipping and/or installation expenses. Advanced handling and installation knowledge may also be required, including crane handling, on-site glazing or on-site coupling.

Defender 76TS Tilt + Turn Window

	Minimum	Maximum
WIDTH	18.74 in. (standard / easy reach handle position) 23.25 in. (accessible handle position)	69.5 in.
HEIGHT	18.74 in (standard / easy reach handle position) 25 in. (accessible handle position)	84 in.

Maximum NAFS Tested Sizes

69.5 in. wide x 74 in. high, 42 in. wide x 84 in. high

Design Recommendations

The following design recommendations are guidelines to optimize performance, functionality, durability and budget. Discuss your project's unique requirements with your Product Consultant to ensure your Innotech products support your design and build goals.

Specialty Sizes

Tilt + Turn Windows that are smaller than 21.65 in. x 21.65 in. or have an overall frame width larger than 98 in. are considered specialty sizes.

Very Small Windows

When designing small Tilt + Turn Windows, consider the frame to glass ratio. The Defender 76TS has a frame width of 3 in. (76.2 mm). For high-performance projects, it is recommended to limit the number of small windows as these have lower thermal performance than larger windows. Smaller windows also provide less ventilation than larger windows.

Very Large Windows

The Defender 76TS features a hybrid framing system that offers excellent structural performance at very large sizes. Very large windows may incur additional shipping and/or installation expenses. Advanced handling and installation knowledge may also be required, including crane handling, on-site glazing or on-site coupling.

Depth of Tilt

Tilt + Turn Windows provide effective natural ventilation in the tilt position. The depth of the tilt depends on the width of the window.

Tilt + Turn Windows that are wider than 25.07 in. have a tilt depth of approximately 5.75 in. from the face of the frame to the outside of the sash. Tilt + Turn Windows that are smaller than 25.07 in. have a tilt depth of +/- 3 in.

Turn Restrictor

Dual action (tilt and turn) function is only available for windows that are less than 60 in. wide x 60 in. high or 42 in. wide x 84 in. high.

Windows that are equal or greater to 60 in. wide, and windows that are equal or greater than both 42 in. wide and 60 in. high are *limited to tilt only function* with a turn restrictor.

Handle Height on Wall

For Tilt + Turn Windows, consider the handle height on the wall. Handles that are located too low or too high on the wall may make it difficult for some occupants to operate. A comfortable handle height is between 36 to 60 in. from the floor.

To meet accessibility requirements, the handle should be located at 48 in. *or less* from the floor. Local governing bodies may have differing handle height requirements; if accessibility is required, please confirm requirements with your local building code.

Ease of Operation

Tilt + Turn Windows are available with three handle positions: standard, easy reach and accessible. The following are size considerations based on each handle position:

Standard

For ease of operation, limit the width of Tilt + Turn Windows to no wider than 36 in. and/or no higher than 72 in..

Easy Reach

For ease of operation, limit the width of Tilt + Turn Windows to no wider than 35 in. with a height between 31-60 in.

Accessible

For ease of operation, limit the width of Tilt + Turn Windows to no wider than 35 in. and/or no higher than 51 in.

Minimum Width to Height Size

If width is < 19.25 in., height must be > 24.75 in.

Minimum Height to Width Size

If height is < 24.75 in., width must be > 19.25 in.

Sash Width to Height Ratio

Sash width to height cannot exceed 1.5:1.

Custodial Lock

A custodial lock is required when the width of the sash is > 40 in. and ratio exceeds 1.5:1 or the width of the sash is < 40 in. and the height of the sash is < 25 in. but ratio exceeds 1.75:1.

Notes

All size limitations refer to a one (1) lite window in either double or triple pane.

All dimensions are heel dimensions.

All maximums tested for NAFS compliance unless otherwise noted.