

Product Data Sheet

V-Series Fixed Skylight Unit – Crystal Structures

CSI Section: 08 62 00 – Unit Skylights (Fixed Skylights)

1. Product Name & Description

Product Name: V-Series Fixed Skylight Unit

Description: Factory-assembled, fixed (non-venting) skylight unit engineered by Crystal Structures and Vtech Industries designed around advanced materials and glazing construction. Built for durability, weather-resistance, and high performance in commercial daylighting applications.

2. Manufacturer

Manufacturer: Crystal Structures & Vtech Industries

Address: 3333 N Mead, Wichita, KS 67219

Phone: (316) 838-0033

Website: <https://www.crystalstructuresglazing.com>

3. Applicable Standards & Specifications

- Engineered for structural loads, weather resistance (water penetration, air infiltration), and thermal performance.
 - Hurricane rated with Miami Dade rating & large missal impact
 - Meets industry standards for skylights and glazing assemblies.
 - Utilizes patented manufacturing processes to integrate frame and glazing components into a unified system.
 - Warranty coverage: 20-year full system warranty (typical).
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4. System Components

Frame / Structural Assembly:

- Frame is constructed of a high-performance aliphatic polyurethane structural body, manufactured via Reaction Injection Molding (RIM) process, encapsulating glazing components to form a seamless unit.
- The polyurethane material is weather-resistant, offers superior durability against UV and hail, and eliminates typical joints, welds or mechanical fasteners at glazing zones.
- Frame geometry and materials meet project-specific structural requirements (live load, snow load, wind load, seismic).
- Finish options: factory-applied finishes as required (e.g., color-matched polyurethane, corrosion-resistant coatings, etc.).

Glazing / Light-transmitting Elements:

- Fixed, sealed glazing units that incorporate laminated insulated glass or polycarbonate alternatives with optional advanced insulation inserts for enhanced thermal performance.
- Glazing materials are chemically bonded or encapsulated within the structural frame to eliminate gasket/seal failure modes.
- Thermal performance: example values from public spec: U-Factor in the range of ~0.38-0.43 for glass; ~0.33 for polycarbonate versions. SHGC values ~0.24-0.26 (glass) and ~0.50-0.54 (polycarbonate) (project-specific results may vary).
- Light transmittance and daylighting parameters depend on glazing selection, solar heat gain, visible transmittance and glare control options available.

Flashing & Waterproofing:

- Designed to integrate with roof curb or structural opening; weather-resistant interfaces utilize the seamless frame/glass bond to provide water infiltration resistance.
- Weepage and drainage provisions incorporated in unit design as per manufacturer details.

Finish:

- Frame finish is integral to the polyurethane body; color and texture options available.
 - Glazing surfaces: standard safety laminated glass, impact-resistant glass, or high-performance polycarbonate as specified.
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5. Performance Criteria

- Structural loads: Designed for project-specific live/snow/wind/seismic loads; tested in large-object impact, hail, fall protection, cyclic load regimes.
 - Water penetration: Tested per ASTM E547/E331 or equivalent (public data indicates high performance).
 - Thermal performance: U-Factor ~0.38-0.43 for glass. SHGC ~0.24-0.26 (glass)
 - Seal/Joint integrity: Frame/glass bond eliminates separate seals or mechanical fasteners at glazing perimeter.
 - Durability: System engineered to be “100 % leak-proof”
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6. Design & Fabrication

- Units are shop-fabricated to project dimensions, roof slope, curb interface and structural attachment details.
 - Unit arrives factory-assembled or in major sub-assemblies, labeled for field installation.
 - Frame/glass assembly is pre-sealed by manufacturer and requires minimal field sealing.
 - Typical sizing options: 2'×2', 2'×4', 3'×3' and 4'×4' (or clusters thereof)
 - Field coordination required for curb/roof interface, structural support, flashings and adjacent trades.
 - Custom sizes available through Crystal Structures 08 63 00
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7. Installation

- Install according to manufacturer's instructions, project drawings and applicable building code requirements.
 - Verify rough opening, curb condition, structural support, flashing compatibility and seal integrity.
 - Align unit to roof deck structure; anchor per manufacturer's structural attachment schedule.
 - Flash and seal per roofing system specification and manufacturer detail.
 - Clean glazing and frame after installation; protect from construction debris and finishing trades.
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8. Maintenance & Warranty

- Provide maintenance instructions for periodic inspection of frame, glazing, seal interface, flashings and roof integration.
- Warranty: 20-year full system transferable warranty on standard units (verify with manufacturer for specific version).

- Warranty covers frame/glass/systems integration as provided by manufacturer.
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9. Materials & Variants

- Standard variant: aluminum or polymer-encapsulated frame with laminated insulated glass.
 - Alternate variant: polycarbonate glazing with optional aerogel insulation insert for high thermal performance.
 - Finish options: integral colored polyurethane, custom color, or factory finish per project.
 - Size/cluster variants: standard 2'×2', 2'×4', 3'×3', 4'×4'; custom configurations available.
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10. Typical Applications

- Commercial, institutional and industrial buildings requiring fixed daylighting through roof systems.
 - Ideal for flat or low-slope roof installations where durability, water infiltration resistance and long service life are priorities.
 - Suitable for retail, manufacturing, educational, healthcare, and other high-use facilities.
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11. Ordering Information

- Provide project-specific data: curb or structural opening size, roof slope, structural load criteria, glazing selection, finish, attachment detail and flashing requirement.
 - Use manufacturer's order form and supply shop drawings for client review and approval prior to fabrication.
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12. Compliance & Submittals

- Submit manufacturer's product data, performance test data, structural calculations, finish samples, glazing product data and installation instructions.
- Provide compliance with code requirements for structural load, thermal performance, leak resistance, impact resistance, and durability.
- Coordinate with roofing system specification, building envelope design, flashing interface and warranty implications.