

## TUBULAR NATURAL LIGHTING SYSTEM

### 1. GENERAL

- .1 Tubular natural lighting system, consisting of an aluminum framed roof top, clear acrylic dome assembly, pure polished aluminum reflective pipe, clear Lexan thermal and security barrier, and interior diffuser assembly; Configuration as indicated on the drawings.

### 2. PERFORMANCE REQUIREMENTS

- .1 Completed tubular natural lighting system assemblies shall be capable of meeting the following performance requirements:

A – Air infiltration: Air infiltration will not exceed 0.0001 cubic meters per minute per square meter opening with a pressure variance of 7.65 kilograms per square meter (.075kPa) across the unit.

B. – Water resistance: No water leakage at 50.0 kilogram per square meter (.49 kPa) pressure with a water rate of 195.0 litres per hour per square meter.

C – Uniform load: No breakage, no damage to fasteners, hardware, aluminum frames, exterior dome to cause the system to be inoperable, or cause excessive damage when loaded with a load of 713 kilograms per square meter (7.0 kPa).

D – Fire Rating: all fire ratings as per manufacturers' Material Safety Data Sheets.

Top dome – 4.5 mill UV protected Acrylite acrylic polymer  
Thermal barrier – 3.0 mill clear polycarbonate  
Interior dome – either 3.0 mill white acrylic or 3.0 mill pebble clear polycarbonate

### 3. SUBMITTALS

- .1 Product date: provide material safety data sheets on all products used, and provide all preparation, storage and installation details.
- .2 Provide shop drawings: Including all components, parts and accessories.

.3 Provide warranty documents

.4 Provide maintenance and cleaning instructions

#### 4. QUALITY ASSURANCE

.1 Manufacturers' Qualifications: The manufacturer shall have been engaged in the manufacturing of natural lighting systems for at least 20 years. The installers shall be factory trained and certified by Sky-Tech Sky-Lights.

#### 5. WARRANTY

.1SunScope thermal unit warranty – 10 years

.2SunScope pure polished Miro IV reflective pipe – 25 years

.3SunScope damper unit electrical components – 5 years

.4Installation – The actual installation of the SunScope Thermal units is warranted for one (1) year from date of installation. This warranty includes repairing or replacing any part of the SunScope system which fails due to materials or poor workmanship. This warranty will be null and void if damages arise from other than normal use of the product, or by modifications by the owner or others not approved by Sky-Tech Sky-Lights.

#### 6 PRODUCT ACCEPTANCE

6.1Acceptable Manufacturer: SunScope natural lighting systems manufactured by Sky-Tech Sky-Lights, division of Hilversum Enterprises Limited, of Edmonton, Alberta.

6.2Substitutions: Systems not having an integral Lexan thermal and security barrier, tied into the building vapor barrier membrane and roof deck will not be accepted.

6.3Warranty: Systems not providing 25 year pipe warranty against, discoloration, peeling and blistering, will not be accepted.

6.4Natural lighting system must be manufactured in Canada

## 7 – PRODUCT SPECIFICATIONS (21”)

### 7.1 General specification: SunScope Thermal unit, (Part # 21-090), consisting of:

A – Clear, 810mm square, 4.5mm exterior acrylic dome

B – Aluminum frame, 815mm square (o/d) factory assembled unit consisting of extruded 76.2mm aluminum base frame (6063T5 alloy) heliarc welded corners, complete with a full 19.0mm resin thermal break, a 25.4mm condensation gutter, and a full perimeter closed cell curb air seal.

C – Galvanized steel pipe suspension adapter plate.

D – Thermal Barrier; Clear 715mm square, Lexan 3.0mm thermal barrier (Part # 21-332) sandwiched between 2 – 800mm square, galvanized steel collar assemblies, complete with butyl seals.

E – Interior Dome: 585mm diameter, 3.0mm white opal acrylic (Part # 21-204) or 3.0 mill pebbled clear polycarbonate (Part # 21-205), complete with white powder coated metal trim ring.

F – Pipe, 533mm diameter, 99.85% pure polished (non film) Miro IV aluminum pipe. (ISO 9001:2002Registered)

G – Adjustable elbow, (Part # 21-365), 533mm diameter, 30 degree adjustable elbow, 99.85% pure polished (non film) Miro IV aluminum pipe. (ISO 9001:2002 Registered) required only for vertical offsets (2 required) or where the roof deck and ceiling are not parallel to each other (1 required)

### 7.2 Optional accessories:

H – Damper Unit: (Part # 21-790) 533mm diameter, Single 24 volt disc damper, normally open, requiring 24 volts to close, with a spring return to open.

I – Round to square ceiling tile adapter. (Part # 21-338) Galvanized 533mm round to 605mm square adapter optional for suspended ceiling application.

J – Flat square interior diffuser, 605mm square, 3.0mm white opal acrylic or 3.0 mill pebbled clear polycarbonate.

7.3 General specification: SunScope Thermal unit, (Part # 13-090), consisting of:

A – Clear, 610mm square, 4.5mm exterior acrylic dome

B – Aluminum frame, 615mm square (o/d) factory assembled unit consisting of extruded 76.2mm aluminum base frame (6063T5 alloy) heliarc welded corners, complete with a full 19.0mm resin thermal break, a 25.4mm condensation gutter, and a full perimeter closed cell curb air seal.

C – Galvanized steel pipe suspension adapter plate.

D – Thermal Barrier; Clear 508mm square, Lexan 3.0mm thermal barrier (Part # 13-332) sandwiched between 2 – 600mm square, galvanized steel collar assemblies, complete with butyl seals.

E – Interior Dome: 368mm diameter, 3.0mm white opal acrylic (Part # 13-204) or 3.0 mill pebbled clear polycarbonate (Part # 13-205), complete with white powder coated metal trim ring.

F – Pipe, 330mm diameter, 99.85% pure polished (non film) Miro IV aluminum pipe. (ISO 9001:2002Registered)

G – Adjustable elbow, (Part # 13-365), 330mm diameter, 30 degree adjustable elbow, 99.85% pure polished (non film) Miro IV aluminum pipe. (ISO 9001:2002 Registered) required only for vertical offsets (2 required) or where the roof deck and ceiling are not parallel to each other (1 required)

7.4 Optional accessories:

H – Damper Unit: (Part # 13-790) 533mm diameter, Single 24 volt disc damper, normally open, requiring 24 volts to close, with a spring return to open.

I – Round to square ceiling tile adapter. (Part # 13-338) Galvanized 533mm round to 605mm square adapter optional for suspended ceiling application.

J – Flat square interior diffuser, 605mm square, 3.0mm white opal acrylic or 3.0 mill pebbled clear polycarbonate.

## 8 INSTALLATION

- 8.1 Installation shall be in accordance to Sky-Tech Sky- Lights written instructions.
- 8.2 Lexan Thermal/Security barrier shall be installed during construction and installation of the roof top curbs. The barrier must be tied into the main air barrier membrane layer to insure a 100% air tight seal. (see industrial install top detail drawing)
- 8.3 Co-ordinate the installation with the general contractor and the various sub trade. With suspended ceiling installations, close co-ordination will be required to align the SunScope thermal units with the suspended ceiling grid.
- 8.4 After the first unit is installed, inspect the unit with the owner, architect, general contractor, and related sub trades, and determine if alterations are needed. Correct any deficiencies and proceed to install the remaining units.
- 8.5 All pipe connections are to be secured and sealed with the manufacturers' supplied aluminum foil tape. All elbow segments are to be sealed with the manufacturers' supplied aluminum foil tape.
- 8.6 All interior pipe protection is to be removed after installation.
- 8.7 Clean up site in accordance to the general contractor guidelines. Recycle any waste product as per LEED guidelines. Follow all safety policies and standards, as per construction site rules, or as minimum OHS/WCB standards.
- 8.8 After 3 month, do a full inspection of all the units, making any repairs, adjustments and final cleaning as required at no charge to the owner.