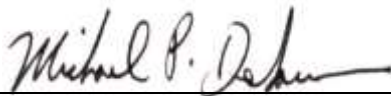


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# APPROVAL REPORT

**Project No:** 3054351  
**Class:** 4431  
**Product Name:** M74, 330 DS, and 750 DS  
**Product Type:** Tubular Daylighting Devices (Skylights)  
**Name of Listing Company:** Solatube International, Inc.  
**Address of Listing Company:** 2210 Oak Ridge Way  
Vista, CA 92081  
United States  
**Customer ID:** 145807-1  
**Customer website:** <http://www.solatube.com>

**Prepared by**



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Michael DeSousa  
Engineer

**Reviewed by**



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Technical Team Manager, Materials



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Cynthia E. Frank  
AVP, Manager of Materials

**4/5/2016**

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**Date of Approval**

## 1 INTRODUCTION

1.1 Solatube International, Inc. requested Approval of their M74, 330 DS, and 750 DS skylights listed in Section 1.4 to determine if they meet the Approval requirements of the Standard listed in Section 1.3.

1.2 This report may be freely reproduced only in its entirety and without modification.

### 1.3 Standards

Title	Number	Issue Date
Approval Standard for Skylights	4431	September 2006

### 1.4 Listing

The products will appear in the Approval Guide, an on-line resource of FM Approvals, as follows:

#### Skylights for Roofs

Solatube Models M74 DS, 750 DS, and 330 DS are Tubular Daylighting Devices (TDD) are round in shape, and consists of transparent roof-mounted skylight domes, curb mounted or self-flashing curb, reflective tube, and ceiling level diffuser assemblies that transfer sunlight to interior spaces.

#### Solatube Model M74 DS

FM Approved Solatube SkyVault Series Model M74 DS Tubular Daylighting Device (TDD), is 28.5 in. (724 mm) diameter daylighting system equipped with transparent, UV and impact resistant Dome material with flashing base supporting dome and top of tube. The dome glazing material is Type DP, minimum 0.125 in. (3.2 mm) thickness, vacuum formed polycarbonate classified as CC1 material; UV inhibiting (100 percent UVC, 100 percent UVB and 98.8 percent of the range of UVA transmission).

#### Solatube Model 750 DS

FM Approved Solatube SolaMaster Series Model 750 DS-O (Open Ceiling) and Model 750 DS-C (Penetrating Ceiling) are 21 in. (530 mm) diameter, double dome daylighting systems equipped with transparent, UV and impact resistant Dome material with flashing base supporting dome and top of tube. The outer dome glazing material is Type DA, minimum 0.125 in. (3.2 mm) thickness, injection molded acrylic classified as CC2 material; UV inhibiting (100 percent UV C, 100 percent UV B and 98.5 percent UV A), impact modified acrylic blend. The Raybender 3000 outer dome material is a variable prism optic molded into outer dome to capture low angle sunlight and limit high angle sunlight. The inner dome glazing material is Type DPI, minimum 0.115 in. (3 mm) thickness, injection molded polycarbonate classified as CC1 material.

#### Solatube Model 330 DS

FM Approved Solatube SolaMaster Series Model 330 DS-O (Open Ceiling) and Model 330 DS-C (Penetrating Ceiling) are 21 in. (530 mm) diameter, single dome daylighting systems equipped with transparent, UV and impact resistant Dome material with flashing base supporting dome and top of tube. The outer dome glazing material is Type DPI,

minimum 0.115 in. (3 mm) thickness, injection molded polycarbonate classified as CC1 material; UV inhibiting (100 percent UV C, 100 percent UV B and 98.5 percent UV A). Model 330 DS is equipped with a LightTracker Reflector, made of 0.015 in. (0.4 mm) thick aluminum sheet, with Spectralight Infinity positioned in the dome to capture low angle sunlight.

## **2 DESCRIPTION**

### **2.1** The M74, 330 DS, and 750 DS Skylights are described as follows:

Solatube SkyVault Series Model M74 DS Tubular Daylighting Device (TDD), is 28.5 in. (724 mm) diameter daylighting system equipped with transparent, UV and impact resistant Dome material with flashing base supporting dome and top of tube. The dome glazing material is Type DP, minimum 0.125 in. (3.2 mm) thickness, vacuum formed polycarbonate classified as CC1 material; UV inhibiting (100 percent UVC, 100 percent UVB and 98.8 percent of the range of UVA transmission).

Solatube SolaMaster Series Model 750 DS-O (Open Ceiling) and Model 750 DS-C (Penetrating Ceiling) are 21 in. (530 mm) diameter, double dome daylighting systems equipped with transparent, UV and impact resistant Dome material with flashing base supporting dome and top of tube. The outer dome glazing material is Type DA, minimum 0.125 in. (3.2 mm) thickness, injection molded acrylic classified as CC2 material; UV inhibiting (100 percent UV C, 100 percent UV B and 98.5 percent UV A), impact modified acrylic blend. The Raybender 3000 outer dome material is a variable prism optic molded into outer dome to capture low angle sunlight and limit high angle sunlight. The inner dome glazing material is Type DPI, minimum 0.115 in. (3 mm) thickness, injection molded polycarbonate classified as CC1 material.

Solatube SolaMaster Series Model 330 DS-O (Open Ceiling) and Model 330 DS-C (Penetrating Ceiling) are 21 in. (530 mm) diameter, single dome daylighting systems equipped with transparent, UV and impact resistant Dome material with flashing base supporting dome and top of tube. The outer dome glazing material is Type DPI, minimum 0.115 in. (3 mm) thickness, injection molded polycarbonate classified as CC1 material; UV inhibiting (100 percent UV C, 100 percent UV B and 98.5 percent UV A). Model 330 DS is equipped with a LightTracker Reflector, made of 0.015 in. (0.4 mm) thick aluminum sheet, with Spectralight Infinity positioned in the dome to capture low angle sunlight.

Drawings and specifications are on file at FM Approvals.

## **3 EXAMINATIONS AND TESTS**

**3.1** Samples were submitted for examination and testing. The samples were considered to be representative of standard production and were examined or tested as indicated below. All data is on file at FM Approvals along with other documents and correspondence applicable to this program.

**3.2** All testing and analysis considered appropriate was conducted and verified to be in compliance with the Standards defined in Section 1.3. See Table 1 below for details.

<b>Table 1</b>			
<b>Standard Number</b>	<b>Section</b>	<b>Test Name</b>	<b>Justification/Comments</b>
4431	4.1	Spread of Flame Test for Skylights from an Exterior Ignition Source	Included/Passed Class A at 5 in 12
4431	4.2	Simulated Hail Resistance Test Using Freezer Ice Balls	Included/Passed SH Rating Using 2.0 in. (51 mm) Diameter Freezer Ice Balls
4431	4.3	Simulated Impact Test for Skylights	Included/Passed *NR
4431	4.4	Simulated Wind Uplift Resistance for Skylights	Included/Passed 195 psf Wind Rating
4431	4.5	Windborne Debris Ratings (Approval Standard 4350)	Optional (Windstorm Resistant Fenestrations)
*NR = No Rating			

**4 MARKING**

- 4.1 The manufacturer shall mark each package with the manufacturer's name and product trade name. In addition, each item must be marked with the Approval Mark of FM Approvals.
- 4.2 Markings denoting Approval by FM Approvals shall be applied by the manufacturer only within and on the premises of manufacturing locations under the FM Approvals Surveillance program.
- 4.3 The manufacturer agrees that use of the FM Approvals name or Approval Mark is subject to the conditions and limitations of the Approval by FM Approvals. Such conditions and limitations must be included in all references to Approval by FM Approvals.
- 4.4 See attached marking drawing(s).

**5 REMARKS**

- 5.1 Continued Approval is based upon fabrication and construction of M74, 330 DS, and 750 DS skylights in accordance with this Approval Report, satisfactory field experience and continued use of acceptable quality control procedures as determined by Surveillance Audits.
- 5.2 Additional guidance for the use of M74, 330 DS, and 750 DS skylights are outlined in FM Global Property Loss Prevention Data Sheets 1-28, 1-29 and 1-57.

**6 SURVEILLANCE AUDIT**

The manufacturing facilities at the following locations shall be visited on a routine basis. The facility processes and quality control procedures in place have been determined to be satisfactory to manufacture products identical to that tested and Approved. An FM Approved Products/Specification Tested Revision Request Form shall be submitted to FM Approvals for requesting to manufacture products at any additional or alternate manufacturing facilities which are not listed below.

**Audit Locations:**

2210 Oak Ridge Way  
Vista, CA 92081  
United States

9705 Eton Avenue  
Chatsworth, CA 91311  
United States

**7 MANUFACTURER’S RESPONSIBILITIES**

- 7.1 Documentation that is applicable to this approval is on file at FM Approvals and listed in the Documentation File, Section 8, of this report. No changes of any nature shall be made unless notice of the proposed change has been given and written authorization obtained from FM Approvals. The FM Approved Products/Specification Tested Revision Request Form shall be forwarded to FM Approvals as notice of proposed changes.
- 7.2 When a M74 DS, 330 DS, and 750 DS skylights are to be erected for an FM Global insured, the manufacturer shall forward all submittals required by this Approval Report to the appropriate FM Global Operations Center for review and acceptance.
- 7.3 The manufacturer shall supply all instructions, materials, equipment, and assistance necessary for the complete, proper and satisfactory erection and testing of the M74 DS, 330 DS, and 750 DS skylights.
- 7.4 In accordance with the Master Agreement, the manufacturer shall make full and immediate disclosure to FM Approvals of all information concerning any defect in, or potential hazard of, the product or service manufactured or provided by the Customer which is Approved by, or being examined by, FM Approvals. The manufacturer shall make all necessary arrangements for the investigation of complaints / anomalies applicable to this approval and shall keep records of all complaints / anomalies including actions taken.

**8 DOCUMENTATION**

The following document describes the M74 DS, 330 DS, and 750 DS skylights and is on file at FM Approvals.

Document Title	Issue Date
Surveillance Audit Manual for Solatube International, Inc. at 2210 Oak Ridge Way, Vista, CA 92081 United States	March 2016
Surveillance Audit Manual for Solatube International, Inc. at 9705 Eton Avenue, Chatsworth, CA 91311 United States	April 2016

**9 CONCLUSION**

The products described in section 1.4 meet FM Approvals requirements. Since a duly signed Master Agreement is on file for this manufacturer, Approval is effective the date of this report.

**PROJECT DATA RECORD:** 3054351