



View Thru Technologies  
Cosmetic Specification  
# 3120000

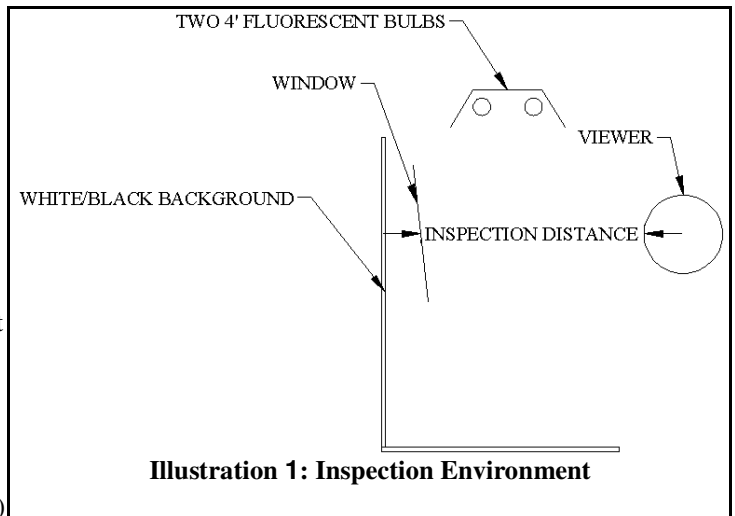
Page: 1 of 2	Issue Date: 6-9-09	Rev: A
Customer: any		<u>Approvals:</u> Engr: BS 6-9-09 Mfg: TC 6-9-09 Qual: RS 6-9-09
Product Type: LCD Window		
Recommended Size: any		
CONFIDENTIAL DOCUMENT		

**SUBJECT**

This document describes the inspection environment, procedures, and acceptance criteria for windows manufactured by View Thru Technologies, Inc.

**LIGHTING ENVIRONMENT**

Two 4' GE F40-C50 fluorescent bulbs (or equivalent) shall be mounted above the inspection table and perpendicular to the inspector's line of sight. Hanging at the rear surface of the inspection table, directly in front of the inspector, will be a black area and a white area. These are used as backgrounds during inspection. During inspections, the window may never be back-lit or edge-lit directly by the fluorescent bulbs. A light box shall be used for part of the inspection. The light box is composed of 4 F40-C50 fluorescent bulbs mounted behind a sheet of white acrylic (R&H 7447 or equivalent). Measurements are to be made with a contact reticle with 6-15X magnification (ref: Edmund Scientific 6X Pocket Comparator w/ Reticle #30-585, p/n 41-055.)



**Illustration 1: Inspection Environment**

**INSPECTION**

Inspect the window through the viewing surface only. Disregard any blemishes within 0.060" of any machined edge. For windows with a viewing area of < 2 ft<sup>2</sup>, the following inspections shall be conducted from a distance of 18 inches. For windows with a viewing area of greater than 2 ft<sup>2</sup>, but less than 4 ft<sup>2</sup>, the following inspections shall be conducted from a distance of 48 inches. And, for windows with a viewing area of greater than 4 ft<sup>2</sup>, the following inspections shall be conducted from a distance of 72 inches.

**INSPECTION PROCEDURE**

- A) **Front Surface Inspection:** Hold the window below and behind the light source and in front of the black background. Tilt the window to scan the reflection of the light bulb across the front surface. Look for defects while tilting the window.
- B) **Sub-Surface Inspection #1:** Hold the window in the same location as in step A, but keep the window perpendicular to your line of sight. Look for defects while holding the window in that position.
- C) **Sub-Surface Inspection #2:** Repeat step B in front of the white background.

**EVALUATION**

- A) Place the window on the light box.
- B) Measure any blemishes identified in step A of the inspection procedure using the reticle.
- C) View all blemishes identified in steps B and C of the inspection procedure from 18 inches directly over the window. Disregard any blemishes which disappear under these conditions. Measure all other blemishes on the light table using the reticle.
- D) During the measurement step, classify blemishes as circular or linear. Odd shaped blemishes are typically classified as circular. The diameter of an odd shaped blemish is the diameter of a circle with the same area. Use the sizes and quantities in the following tables to determine the acceptability of the window.

All information contained herein is based upon test data believed to be reliable. However, we cannot guarantee identical results will be obtained. It is recommended that each user conduct their own tests to determine the suitability of this procedure. The information contained herein is the sole property of View Thru Technologies. The disclosure of this information does not constitute the release of any proprietary rights therein. Permission to reproduce this information or the products disclosed herein must be obtained in writing from View Thru Technologies.



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**FOR WINDOWS WITH VIEWING AREAS OF LESS THAN 2 SQUARE FEET**

**CIRCULAR BLEMISHES (blemishes less than 0.03" in length)**

Diameter Range & Blemish Type	Minimum Separation from other Blemishes	Maximum Quantity Allowed (Translucent and Opaque)	Maximum Quantity of Opaque Blemishes Allowed
>0.020" & ≤0.025"	2.0"	2	1
>0.010" & ≤0.020"	1.0"	6	2
>0.005" & ≤0.010"	0.5"	Disregard Translucent	8
≤0.005"	N/A	Disregard all	Disregard all

**LINEAR BLEMISHES (blemishes greater than 0.03" in length)**

Maximum Thickness	Maximum Allowed
>0.002" & ≤0.003"	0.2" cumulative length
≤0.002"	Disregard All

**FOR WINDOWS WITH VIEWING AREAS OF MORE THAN 2 SQUARE FEET**

**CIRCULAR DEFECTS (blemishes less than 0.05" in length)**

Diameter Range & Blemish Type	Minimum Separation from other Blemishes	Maximum Quantity Allowed per Window (Translucent and Opaque)	Maximum Quantity of Opaque Blemishes Allowed per Window
>0.030" & ≤0.040"	4.0"	0.5 per sq ft of viewing area	0.25 per sq ft of viewing area
>0.020" & ≤0.030"	2.0"	1 per sq ft of viewing area	0.5 per sq ft of viewing area
>0.015" & ≤0.020"	0.5"	3 per sq ft of viewing area	1 per sq ft of viewing area
>0.010" & ≤0.015"	0.1"	Disregard Translucent	5 per sq ft of viewing area
≤0.010"	N/A	Disregard all	Disregard all

**LINEAR BLEMISHES (blemishes greater than 0.05" in length)**

Maximum Thickness	Maximum Allowed
>0.002" & ≤0.003"	0.2" cumulative length per square foot of viewing area
≤0.002"	Disregard All

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