Ultra-thin AP window mounts

Technical Note

Figure 1: AP3 X-ray window

Figure 2: AP5 X-ray window

Moxtek® delivers each AP window in a mount appropriate for each customer. The windows are bonded to a mount using vacuum compatible adhesive. This Technical Note provides general guidelines to use when designing mounts for Moxtek AP windows.

Mounting
AP windows are bonded to a metal mount using a vacuum compatible adhesive.

Figure 3 Sample window mounts

Adhesive mounting
Typical adhesive attachment of Moxtek AP3 Windows is shown in Figure 4.

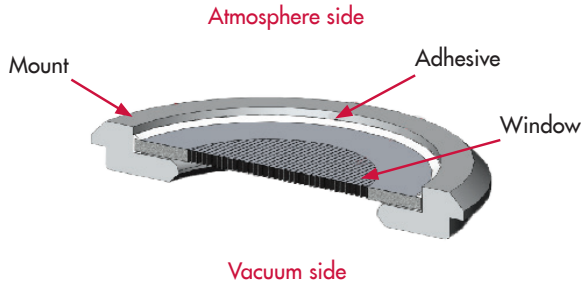

Figure 4: Adhesive attachment of the window to the mount

Custom mounts may be supplied by the customer or machined by Moxtek. For all designs, a drawing should be supplied that illustrates the orientation of the window support structure with respect to the metal mount.

For AP3 windows, the preferred mount material is stainless steel 316, aluminum can be used as an alternative. For AP5 windows the preferred mount material is titanium.

Quantum Design

Quantum Design
1 avenue de l'Atlantique
Bâtiment Fuji-Yama
91940 Les Ulis - France

Tél. : +33 1 69 19 49 49
france@qd-europe.com
www.qd-europe.com

MOXTEK

Mount design

Guidelines for design of the window mount are shown in Figure 5. Mount dimensions for each feature for standard windows are shown in Table 1. Drawings for all non-standard windows should be reviewed and approved by Moxtek.

The window should be recessed slightly from the face of the mount. A minimum Counterbore depth of 1.0 mm is required.

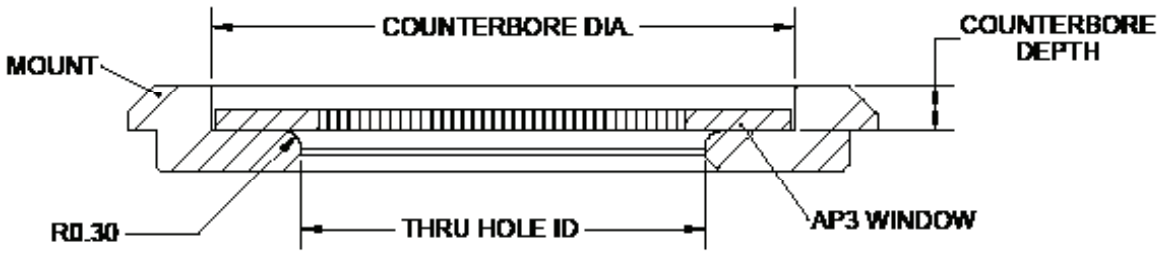

Figure 5: Geometry requirements for window counterbore

Recommended values for designing mounts for AP windows							
Window ID	**Nominal active area (mm^2)**	**Window thickness (mm)**	**ID (mm)**	**OD (mm)**	**Counterbore ∅ (mm)** Tolerance: +0.25 mm -0.00 mm	**Counterbore depth (mm)** Tolerance: +0.50 mm -0.00 mm	**Thru hole ID (mm)** Tolerance: ±0.25mm
Window and mount are circular and concentric							
AP3 CC14-31	10	0.38	3.6	7.9	8.1	1.0	3.6
AP3 CC18-26	20	0.38	4.6	6.6	6.9	1.0	4.6
AP3 CC19-37	20	0.38	4.8	9.4	9.4	1.0	4.8
AP3 CC22-31	20	0.38	5.6	7.9	8.3	1.0	5.6
AP3 CC25-36	30	0.38	6.4	9.1	9.1	1.0	6.4
AP3 CC25-39	30	0.38	6.4	9.9	10.8	1.0	6.4
AP3 CC25-42	30	0.38	6.4	10.7	10.8	1.0	6.4
AP3 CC31-48	50	0.38	7.9	12.2	12.2	1.0	7.9
AP3 CC40-55	80	0.38	10.2	14.0	15.5	1.0	10.2
AP3 CC44-70	100	0.76	11.2	17.8	18.1	2.0	11.2
AP5 CC52-65	140	0.26	13.2	16.6	16.9	1.0	14.0
Please contact Moxtek to discuss custom requirements for active area, differential pressure, and x-ray transmission. Off-centered, circular windows are also available. Please contact Moxtek for further information..							