Optical Bonding & Lamination Capabilities

• In-house bonding and lamination facility
• The latest in contrast enhancement techniques
• Reduced costs
• Improved production lead-times and production rates
• Consistent high quality through direct control of critical process steps

Capabilities Include:
• DuPont™ Vertak® bonding process
  - Proven high-performance Gen2 adhesive technology
  - Reworkable process
  - UV stable material
• Direct bonding of LCDs from 1.5” to 30” active display area
• Cover glass to frame bonding options
  - In-frame bonding
  - On-frame bonding
  - Over-frame bonding
• In-house lamination process

Optical Benefits:
• Improved display contrast and sunlight readability
  - Improved light transmission
  - Reduced internal light reflections
• Reduced parallax issues

Additional Key Benefits:
• Prevents condensation and internal dust buildup
• Improved durability
• Improved impact resistance

* based on coating and cover glass material/construction
Optical Bonding & Lamination Capabilities, continued

IEE’s In-house Capabilities Include:

• DuPont™ Vertak® optical bonding of substrates to flat panel displays
  - Touch screens
  - Filters
  - Protective windows
  - Anti-reflective, anti-glare, anti-smudge and contrast enhancement windows
• 1,000 square foot Class 10,000 clean room
  - Laminar flow benches = Class 100
• Hot roller lamination and autoclave
  - EMI filters: ITO, wire-mesh, micro-mesh
• Laser cutter
  - Finish cut all display filter material
• Robotic dispenser
• Plasma surface cleaner
• UV curing system
• Radiometer
• Darkroom for display performance measurements

Mechanical Benefits:

• Increases impact resistance
• Prevents condensation and internal dust buildup
• Durability against vibration, extreme temperatures, altitudes and vandalization
• Reworkability enables complete restoration of LCD and original substrate at any time

Advantages of Using Vertak® Adhesive:

• Excellent adhesion and compliancy properties
• Optically clear with low refractive index
• Optimized viscosity
• Cured adhesive stable at over 100°C
• Highly resistant to yellowing, delamination or bubbling
• Withstands extreme temperature, humidity, shock and vibration
• Superior bond strength
• Low curing shrinkage

Note: IEE is registered with the US DOS and as such we adhere to all ITAR regulations as it pertains to ‘defense articles’.

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