A novel spacer-free panel structure and glass for FEDs

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Abstract — A new design for an FED envelope, composed of box-shaped front glass, sheet-like rear glass, and metal members, has been devised. This design structure is effective in reducing tensile stress induced by vacuum at the sealing points. Also, a new glass composition, a new physical tempering method, and a lead-free hermetic sealing material have been developed. As a result, a novel light-weight spacer-free panel structure for FEDs has been developed by integrating these new technologies. It will assist in maximizing the essential advantages of FED such as high image quality, high reliability, and low cost.

Keywords — *FED, spacer-free, glass envelope, new glass composition, physical tempering.*

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