A Novel Hybrid Method for Reliability Prediction of High-Power LED Luminaires

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The junction temperature of LED package can be calculated based on a one-dimension model (formula (1)) of thermal resistance easily [9].

$$_{j} = \quad + _{c} = \quad _{th} \times \quad _{h} + \quad _{i} \qquad (1)$$

Where,

T_i: Temperature of solder joint of LED package;

T_j: Junction temperature;

: Thermal difference between T_j

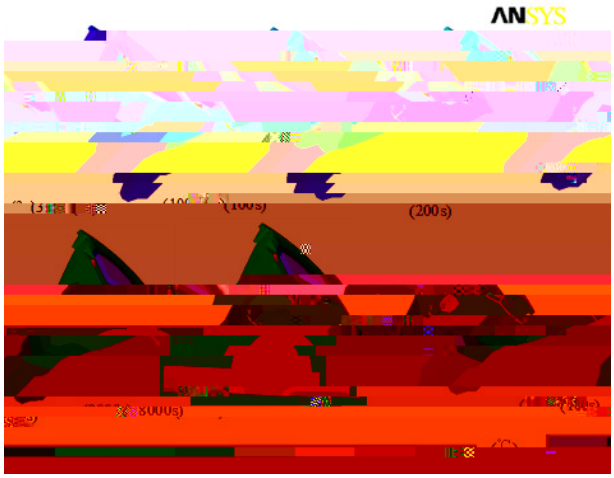
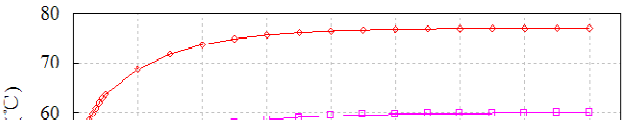


Fig. 3 Thermal distributions of quarter-sized modeling

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