



## Laboratory for Fire Safety

### C 1847-4E-RA-001

#### *Summary assessment - examination of the fire resistance of a Staircraft wooden floor construction with Aurora Lighting downlights in a plasterboard ceiling*

This document provides a summary of the field of application regarding the fire resistance of various Aurora Lighting downlights mounted in a Staircraft wooden floor construction. Detailed drawings of the specific Aurora Lighting downlights and the Staircraft floor constructions are included in report C 1847-2E-RA-003 dated January 29<sup>th</sup>, 2019 available from Aurora Ltd or Staircraft Group Ltd.

Staircraft floor constructions with Aurora Lighting downlights: **REI 30**  
expressed in analogy with the European fire classification system

The Staircraft floor constructions are made of wooden I-joists covered with chipboard flooring (22 mm) and standard (Type A) gypsum board ceiling (12.5 or 15 mm). No insulation material is added in the floor cavity. The Aurora Lighting downlights are mounted in the gypsum board ceiling. Only the downlights mentioned in table t1 are covered by this summary assessment report.

The span of the floor construction is in principle limited to a maximum of 4150 mm, but may be increased under certain circumstances:

- The spacing of the I-joists (600 mm) may be decreased, or the depth (220 mm) and flange size (47 mm x 47 mm) of the I-joists increased, provided that the maximum moments and shear forces on the I-joists, considering the load applied in practice, are not greater than those tested, when calculated on the same basis in the fire condition.
- The maximum load used in the calculations in the tested floor construction is 102 kg/m<sup>2</sup> for all downlights except the downlight types with number EN-DLM981X / bezel EN-BZ91 (IP20) and EN-DLM982X / bezel EN-BZ92. For these downlights the maximum load in the calculations is limited to 94 kg/m<sup>2</sup>. See also table t1.

The downlights mentioned in table t1 may only be applied in a Staircraft floor construction as stated in report C 1847-2E-RA-003 under the following restrictions:

- The dimension perpendicular to the span direction is unlimited provided that the spacing of the I-joists is not greater than 600 mm.
- The height of the cavity between the ceiling and the flooring may be increased but with a minimum I-joist height of 220 mm. No extra material shall be added to that cavity other than needed for the downlights incorporated.

This summary consist of 2 pages. The report being the basis of this summary is available for inspection at Aurora Ltd or Staircraft Group Ltd and is registered under number C 1847-2E-RA-003, dated 29 January 2019.	<b>Reference</b> JZ/JZ/C 1847-4E-RA-001 February 5, 2019	<b>Page</b> 1/2	<b>Initials</b> 
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