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The first experimental campaign on the Laser Megajoule Facility: characterization of plasma transparency in radiatively-heated slots VERONIQUE TASSIN, ANDRE DULIEU, CEDRIC COURTOIS, ALEXIS CASNER, RUDOLF ROSCH, TONY CAILLAUD, CLEMENT TROSSEILLE, CEA, DAM, DIF, F-91297 Arpajon, France, OLIVIER HENRY, FREDERIC SEGUINEAU, CEA-DAM-CESTA, F-33114 Le Barp, France, FREDERIC DURUT, CEA-DAM-Valduc, F-21120 Is-sur-Tille, France — The Laser Megajoule Facility [1] has been commissioned in October 2014 with performing the first experimental campaign. The goal of this first experimental campaign was to study the evolution of the plasma transparency in slots machined within radiatively-heated samples. The plasma was produced using a radiation hohlraum drive. The evolution of the plasma transparency was radiographed with a 2D time-resolved imager consisting in grazing incidence X-ray microscopes and pinholes coupled to an X-ray framing camera. We have conducted a series of experiments to study the effect of the slot width, the material thickness and the material nature (either tantalum-oxide aerogel or gold). Experimental results will be compared with 2D and 3D radiation hydrodynamics codes.

[1] LMJ-PETAL user guide: http://www-lmj.cea.fr

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