Video 1: The details of the numerical simulations and experimental intensities of the PC-PEPV beam (*m* = 3) with high spatial coherence, where the power order *n* increase from 1 to 3 with step 0.1.

Video 2: The details of the numerical simulations and experimental intensities of the PC-PEPV beam (*m* = 3) with low spatial coherence, where the power order *n* increase from 1 to 3 with step 0.1.