$$\phi_{nL}(\zeta) = \kappa^{1+L} \sqrt{\frac{2n!}{(n+L)!}} \zeta^{1/2+L} \exp\left\{ \left(\frac{-\kappa^2 \zeta^2}{2} \right) \right\} L_n^L(x^2 \zeta^2) \ ; ,$$