We present some internal conditions on a locally m-convex \( \Phi \)-algebra \( A \) stated in terms of order and/or closed ideals of \( A \). It turns out that a locally m-convex \( \Phi \)-algebra satisfies these conditions if and only if it is l-isomorphic and homeomorphic to the locally m-convex \( \Phi \)-algebra \( C_k(X) \) for some realcompact normal space \( X \). Here \( C_k(X) \) is the set of all real-valued continuous functions on \( X \) endowed with the topology of compact convergence. One of the mentioned internal conditions can be replaced by the requirement that \( A \) be a barreled space. We also prove that any Fréchet uniformly closed \( \Phi \)-algebra satisfies the internal conditions in question.