$$\begin{CD}
\mathbf{1_D} \otimes_D F(X) @>{\text{iso} \otimes_D \text{id}_{F(X)}}>> F(\mathbf{1_C}) \otimes_D F(X) \\
@V{\text{lu}_D}VV @VV{\mu_{\mathbf{1_C},X}}V \\
F(X) @<{F(\text{lu}_X^C)}<< F(\mathbf{1_C} \otimes_C X)
\end{CD}
\qquad
\begin{CD}
F(X) \otimes_D \mathbf{1_D} @>{\text{id}_{F(X)} \otimes_D \text{iso}}>> F(X) \otimes_D F(\mathbf{1_C}) \\
@V{\text{ru}_D}VV @VV{\mu_{X,\mathbf{1_C}}}V \\
F(X) @<{F(\text{ru}_X^C)}<< F(X \otimes_C \mathbf{1_C})
\end{CD}$$