Left diagram:

$$\begin{array}{ccc}
\mathbf{1_D} \otimes_{\mathbf{D}} F(X) & \xrightarrow{\text{iso} \, \otimes_{\mathbf{D}} \, \mathrm{id}_{F(X)}} & F(\mathbf{1_C}) \otimes_{\mathbf{D}} F(X) \\
\downarrow{\mathrm{lu_D}} & & \downarrow{\mu_{\mathbf{1_C},X}} \\
F(X) & \xleftarrow{F(\mathrm{lu}_X^{\mathbf{C}})} & F(\mathbf{1_C} \otimes_{\mathbf{C}} X)
\end{array}$$

Right diagram:

$$\begin{array}{ccc}
F(X) \otimes_{\mathbf{D}} \mathbf{1_D} & \xrightarrow{\mathrm{id}_{F(X)} \, \otimes_{\mathbf{D}} \, \text{iso}} & F(X) \otimes_{\mathbf{D}} F(\mathbf{1_C}) \\
\downarrow{\mathrm{ru_D}} & & \downarrow{\mu_{X,\mathbf{1_C}}} \\
F(X) & \xleftarrow{F(\mathrm{ru}_X^{\mathbf{C}})} & F(X \otimes_{\mathbf{C}} \mathbf{1_C})
\end{array}$$