

**FORMULA 4.222.7**

$$\int_0^\infty \ln\left(a^2 + \frac{1}{x^2}\right) \ln\left(1 + \frac{b^2}{x^2}\right) dx = 2\pi \left[ \frac{1+ab}{a} \ln(1+ab) - b \ln b \right]$$