

**FORMULA 4.242.6**

$$\int_a^\infty \frac{\ln x \, dx}{\sqrt{(x^2 - a^2)(x^2 - b^2)}} = \frac{1}{2a} \left[ \mathbf{K} \left( \frac{b}{a} \right) \ln ab + \frac{\pi}{2} \mathbf{K} \left( \frac{\sqrt{a^2 - b^2}}{a} \right) \right] \quad a > b > 0$$