

**FORMULA 3.524.17**

$$\int_0^{\infty} x^3 \frac{\cosh ax}{\sinh bx} dx = 2 \left( \frac{\pi}{2b} \sec \frac{\pi a}{2b} \right)^4 \left( 1 + 2 \sin^2 \frac{\pi a}{2b} \right)$$