

**FORMULA 3.524.13**

$$\int_0^{\infty} x^3 \frac{\sinh ax}{\cosh bx} dx = \sin \frac{\pi a}{2b} \left( \frac{\pi}{2b} \sec \frac{\pi a}{2b} \right)^4 \left( 6 - \cos^2 \frac{\pi a}{2b} \right)$$