

**FORMULA 3.479.1**

$$\int_0^{\infty} \frac{x^{\nu-1} \exp(-\beta\sqrt{1+x})}{\sqrt{1+x}} dx = \frac{2}{\sqrt{\pi}} \left(\frac{\beta}{2}\right)^{\frac{1}{2}-\nu} \Gamma(\nu) K_{\frac{1}{2}-\nu}(\beta) \quad \text{Re } \beta > 0, \text{ Re } \nu > 0$$