FORMULA 4.271.14

$$\int_0^\infty \frac{x^{\nu-1}\,\ln^n x\,dx}{x^2 + 2ax\cos t + a^2}\,dx = -\frac{\pi}{\sin t}\frac{d^n}{d\nu^n}\left[a^{\nu-2}\frac{\sin(\nu-1)t}{\sin\pi\nu}\right]$$