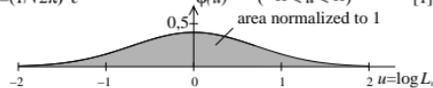


### Two standard normal functions according to Gauß

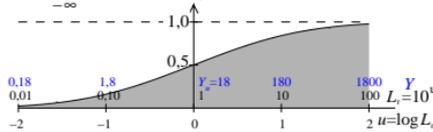
Density function  $\phi(u)$

$$\phi(u) = (1/\sqrt{2\pi}) \cdot e^{-(1/2) \cdot u^2} \quad (-\infty < u < \infty) \quad [1]$$



Distribution function  $\Phi(u)$

$$\Phi(u) = (1/\sqrt{2\pi}) \int_{-\infty}^u e^{-(1/2) \cdot t^2} dt = -0.5 \phi(u) \quad [2]$$

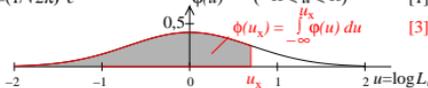


EE591-1A

### Two standard normal functions according to Gauß

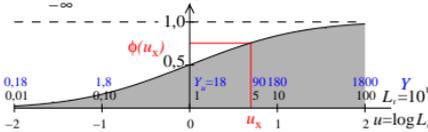
Density function  $\phi(u)$

$$\phi(u) = (1/\sqrt{2\pi}) \cdot e^{-(1/2) \cdot u^2} \quad (-\infty < u < \infty) \quad [1]$$



Distribution function  $\Phi(u)$

$$\Phi(u) = (1/\sqrt{2\pi}) \int_{-\infty}^u e^{-(1/2) \cdot t^2} dt = -0.5 \phi(u) \quad [2]$$

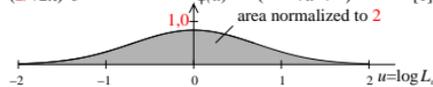


EE591-2A

### Two standard normal functions according to Gauß

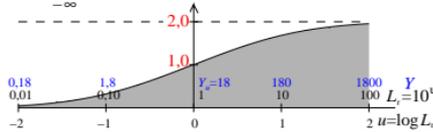
Density function  $\phi(u)$

$$\phi(u) = (2/\sqrt{2\pi}) \cdot e^{-(1/2) \cdot u^2} \quad (-\infty < u < \infty) \quad [1]$$



Distribution function  $\Phi(u)$

$$\Phi(u) = (2/\sqrt{2\pi}) \int_{-\infty}^u e^{-(1/2) \cdot t^2} dt = -1.0 \phi(u) \quad [2]$$

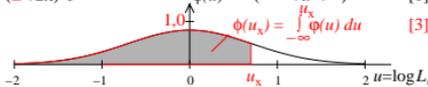


EE591-3A

### Two standard normal functions according to Gauß

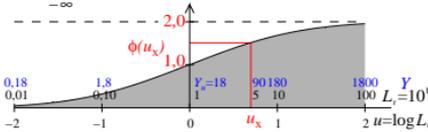
Density function  $\phi(u)$

$$\phi(u) = (2/\sqrt{2\pi}) \cdot e^{-(1/2) \cdot u^2} \quad (-\infty < u < \infty) \quad [1]$$



Distribution function  $\Phi(u)$

$$\Phi(u) = (2/\sqrt{2\pi}) \int_{-\infty}^u e^{-(1/2) \cdot t^2} dt = -1.0 \phi(u) \quad [2]$$

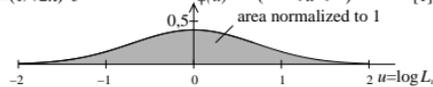


EE591-4A

### Two standard normal functions according to Gauß

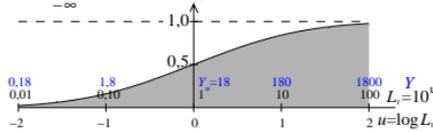
Density function  $\phi(u)$  compare with CIE luminance contrast  $L/\Delta L$

$$\phi(u) = (1/\sqrt{2\pi}) \cdot e^{-(1/2) \cdot u^2} \quad (-\infty < u < \infty) \quad [1]$$



Distribution function  $\Phi(u)$  corresponds to the CIE lightness  $L^*$

$$\Phi(u) = (1/\sqrt{2\pi}) \int_{-\infty}^u e^{-(1/2) \cdot t^2} dt = -0.5 \phi(u) \quad [2]$$

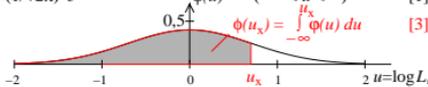


EE591-5A

### Two standard normal functions according to Gauß

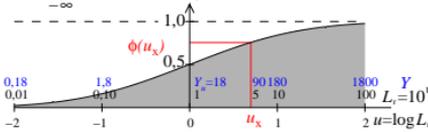
Density function  $\phi(u)$  compare with CIE luminance contrast  $L/\Delta L$

$$\phi(u) = (1/\sqrt{2\pi}) \cdot e^{-(1/2) \cdot u^2} \quad (-\infty < u < \infty) \quad [1]$$



Distribution function  $\Phi(u)$  corresponds to the CIE lightness  $L^*$

$$\Phi(u) = (1/\sqrt{2\pi}) \int_{-\infty}^u e^{-(1/2) \cdot t^2} dt = -0.5 \phi(u) \quad [2]$$

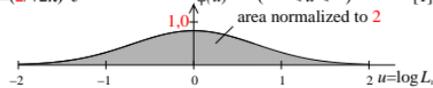


EE591-6A

### Two standard normal functions according to Gauß

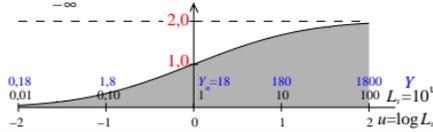
Density function  $\phi(u)$  compare with CIE luminance contrast  $L/\Delta L$

$$\phi(u) = (2/\sqrt{2\pi}) \cdot e^{-(1/2) \cdot u^2} \quad (-\infty < u < \infty) \quad [1]$$



Distribution function  $\Phi(u)$  corresponds to the CIE lightness  $L^*$

$$\Phi(u) = (2/\sqrt{2\pi}) \int_{-\infty}^u e^{-(1/2) \cdot t^2} dt = -1.0 \phi(u) \quad [2]$$

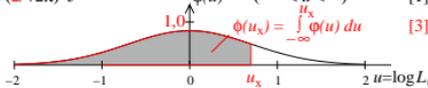


EE591-7A

### Two standard normal functions according to Gauß

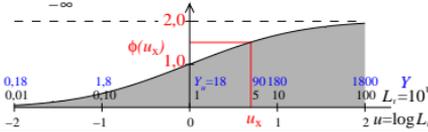
Density function  $\phi(u)$  compare with CIE luminance contrast  $L/\Delta L$

$$\phi(u) = (2/\sqrt{2\pi}) \cdot e^{-(1/2) \cdot u^2} \quad (-\infty < u < \infty) \quad [1]$$



Distribution function  $\Phi(u)$  corresponds to the CIE lightness  $L^*$

$$\Phi(u) = (2/\sqrt{2\pi}) \int_{-\infty}^u e^{-(1/2) \cdot t^2} dt = -1.0 \phi(u) \quad [2]$$



EE591-8A