## 1. Optical front end for D-D-A3.0-... optical fibers: KL-D-140-45 $/ 0^{\circ}-\mathrm{A} 3.0$

The optical front end type KL-D-140-45 $/ \mathbf{0}^{\circ}-\mathrm{A} 3.0$ is used in connection with an optical fiber e.g. D-S-A3.0-3.0-1200-67 ${ }^{\circ}$ for color measurement tasks in a rough industrial environment (high temperature, etc.). The transmitter fiber can be either used under an angle of $45^{\circ}$ to the object ( $45 \% 0^{\circ}$ - color measurement method) or perpendicular to the object ( $0^{\circ} / 45^{\circ}$ color measurement method). At this, the distance of the frontend to the object is around 140 mm .


