Impact of led lighting on Age 6-12 classroom with display board in classroom while learning

For LED lighting in classrooms for children aged 6-12, especially with display boards, important factors include illuminance (lux), color temperature, glare control, color rendering index (CRI), and uniformity. Here are the key recommended standards based on current lighting guidelines:

- **Illuminance (Lux)**: The recommended light level on work surfaces (desks) in classrooms is typically between 300 to 500 lux. General classroom lighting is advised around 350 lux for general activities and up to 500 lux for group work or discussion areas.
- **Color Temperature**: Around 5000 K is suggested for classrooms, providing a daylight-like, neutral to cool white light which promotes alertness and focus. Tunable white lighting that can shift from cooler in the morning to warmer in the afternoon is ideal but optional.
- **Glare Control**: Use fixtures designed with proper shielding and high Visual Comfort Probability (VCP) to reduce harsh reflections, especially important for whiteboards and display screens in the classroom. Minimizing glare helps reduce eye strain and discomfort.
- **Color Rendering Index (CRI)**: A CRI of 80 or higher is recommended to ensure colors appear natural and accurate under LED lights, facilitating better color distinction in printed materials and classroom displays. CRI 90+ is considered excellent for visual comfort and clarity.
- **Uniformity**: Lighting should be evenly distributed to avoid shadows and bright spots, helping all students clearly see materials on their desks and the display board. Uniform illumination supports visual comfort and reduces fatigue

Type of task / activity area	**Lux-level (E_m)**		**Glare rating (UGR_L)**	**Uniformity (U_0)**	**Colour rendition (R_a)**	**$E_{m,z}$**	**$E_{m,wall}$**	**$E_{m,ceiling}$**	**Specific requirements**
	Required	**modified**				**$U_0 \geq 0{,}10$**			
Display board	200	300	19	0,60	80	-	-	-	Vertical illuminance