

Investigation

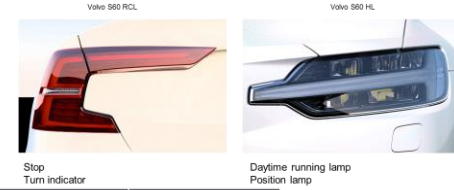


SLR-61-09



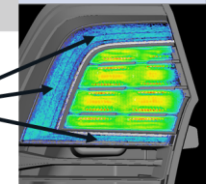
Apparent surface based on luminance criteria

- This proposal is closer to reality (the camera is similar to the human eye)
- Test done on headlamp and rear lamp for Contour and surface calculation to investigate the feasibility
- We faced a lot of issues that need further investigations :
 - For surface: +/-20% between Volvo, Hella and Dekra measurement
 - For contour: difficulty to compare different measurements to have a tolerance
 - We have to define a luminance threshold for each function, by day and by night
 - We have to take into account the tolerances of the system that will impact the luminance:
 - LED flux : +/-10%
 - LED position vs focal point: +/-10%
 - We have to use exactly the same camera and set up if we want the same results (number of pixel, sensor type, focal length ..)

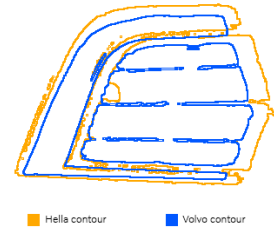


	Catia	Dekra measurement	Hella Measurement	Hella simulation	Volvo simulation
Surface cm2	59,3	69,42	64,53	64,3	~62

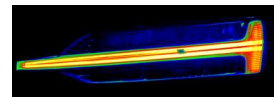
- 10% difference between min/max
- Difference due to low lumimance level in the C-shape



Threshold cd/ m²	Camera measurement HELLA cm²	simulation HELLA cm²	simulation Volvo cm²
400	70.43	68.48	64,6
450	70.76	67.71	63,2
500	69.72	66.90	61,9
550	68.62	66.05	60,5
600	67.75	65.21	59,1



- 10% difference between min/max



Surface cm2	Catia	Dekra measurement	Hella Measurement	Hella simulation	Volvo simulation
DRL	91	111,3	107,5	90,69	110
PL	91	77,29	74,13	75,41	85

For simulation and measurement : threshold 500 cd/m2

- 20% difference between min/max