



Statens vegvesen

From	Document dato
Arne Jørgensen	23. November 2022

Meeting in road- and tunnel lighting group

Time	28. november 13.00 – 18.00 and 29. november 9.00 – 12.00.
Participants	Arne, Aleksanteri, Petter, Steffan, Maria. Kai and Dennis came late at around 14.
Place	Stockholm, Sverige – Villa Aske
Meeting number	2022-2

Agenda

Case number	Case	Responsible
	<p>Minutes from last meeting, København</p> <p>Aleksanteri suggest to have the document “Lighting-of-underpasses-for-pedestrians-and-cyclists-in-Norway-Sweden-Finland-and-Denmark” on the nmfv homepage</p> <p>Kai suggests to have our minutes from the tunnel meetings on the nmfv homepage.</p> <p>Aleksanteri: CIE will keep Russia until ISO and IEC kicks them out.</p>	Dennis/Arne
	<p>Report/notes</p> <ul style="list-style-type: none">Maintenance of Lådan Kai have repaired it when it came back from Sweden, it should still work, it has not been used. After the measurements in Norway, we should discuss if we should lend it out to other countries outside the Nordic countries. We are waiting to see if Norway is ready to do the measurement in 2023. Perhaps Delta will use the principles of Lådan to extend their measurement capabilities.	Kai/Dennis

	<ul style="list-style-type: none"> • Lighting for short tunnels There is a contradiction in the LTP that with high speeds you may not need to illuminate the tunnel, but if you drive slow you will have too. There is something wrong with the LTP method. The German method using solid angle might be better? Kai have send a note at some point about it. It could be in an email, Kai will find it and resend it to us. Kai looks into this a little bit more and come up with a proposal on how to combine the two. • Lighting for super cycleways and underpasses We agree on the lighting for the super highways, we will publish “Lighting-of-underpasses-for-pedestrians-and-cyclists-in-Norway-Sweden-Finland-and-Denmark” on the homepage, the note will be resend and asked for suggestions. We suggest using between P2 and P4. Petter will send Kai and e-mail about using the same lighting level outside and inside the tunnel during the night. Advice: If the lighting level in the tunnel is too high it will be unsafe. We do not agree on the lighting for underpasses. We need a proposal on research on this. • Compare to-days adaptation curve with the spreadsheet CIE does not have any recommendation to make a step from 3:1. In Norway they allow it as long as it follows the real lighting situation and not stop when the CIE adaptation curves in theory “allows” to do it, then in some cases the real situation is above the adaptation curve, and the jump could in some cases be 6:1. Norway and Sweden will follow the CIE curve and then go from 3:1. At least until we have done more examinations and experiments. 	
	Status NMF01 Ed.4.0 The document is almost ready, and is being send out for comments to the group first, and then to the manufactures afterwards.	Aleksanteri
	MF sensor	Petter/Mikael
	<p>Light pollution (obtrusive light)</p> <ul style="list-style-type: none"> - VGU - TC169/WG2/EN 12464-2 - CIE150:2017 and TC169/WG15 new item - Workshop in Brnu <p>A homepage shows the areas that are protected and where special investigation of the lighting impact on flora (plants) and fauna (Animals) and astronomical is needed.</p>	Petter

Commented [DDC1]: Arne did I understand this correctly?

	If lighting is planned close to an astronomical observatories, they must live up to the requirements in IDA.	
	<p>Status revision of EN 13201</p> <ul style="list-style-type: none"> • How many lighting classes can be dimmed <p>Two steps in both, dimming in two step. For preprogramed stand alone drivers for dimming. The problem is that the dimming level suggested does not correspond with any lighting classes.</p> <p>Aleksanteri: We don't know what will happen when following the suggested dimming scheme. We don't know how it will affect accidents.</p> <p>Petter: He likes it is okay for M1-M3, for M4 he thinks you shouldn't dim below 60%.</p> <p>Kai: Kai will check how low we dim in the Danish road lighting handbook. We dim down to 40%, no longer.</p> <p>We want to see table 3 without the note and with a uniformity requirement instead of a minimum value. We would like the uniformity to be 0.2. Four countries have agreed on this, Norway, Finland, Sweden and Denmark. It is okay with notes with exceptions. Kai will formulate and send this e-mail.</p> <p>In Norway the street lights turn on when the lighting level is 25 lux.</p>	Petter
	<p>Status revision of CIE 88</p> <p>Dennis gave a short description on what happened on the last couple of meetings. There is a working draft on collaboration tool.</p>	Arne
	<p>Status revision of EN 16276</p> <p>Jerome is the leader of the task.</p> <p>Evacuation for road tunnels, there have not been any real working meetings recently. Nothing have happened since 2020, when Arne gave comments in 2020.</p> <p>Arne would like to kick start the work again.</p> <p>Aleksanteri will bring it up with Jerome for the next CEN meeting in December 2022</p>	Petter
	<p>Status revision of CEN 14380</p> <p>Tunnel lighting applications, the idea is to make it a commodity report to a technical report. There was a meeting recently. Kai have been modifying and updated some drawings that lives up to some requirements. We really want to just change it from CR to TR, with as little work as possible, with only update it with some</p>	Petter

	<p>correction of errors. There is some discussion going on with the inner zone. Petter will try and keep the meeting intact next time.</p>	
	<p>Directive 2011/65/EU → EUR-Lex - 32022L0274 - EN - EUR-Lex (europa.eu)</p> <ul style="list-style-type: none"> • A ban on all T5 and T8 fluorescent with long lifetime (\geq 25 000 h) lamps from 24. February 2023 • An extension to the exemption for HPS lamps of 3 to 5 years. <p>Nothing really new about it. Aleksanteri have been discussing with manufacturers about HPS, and there is an uncertainty with what will happen with the extension when it expires. They will kill the market for HPS, stop producing them after 2027. From Finland all the big municipalities will start aggressively to change to LEDs in the near future. Philips and LEDVANCE have HPS replacement lamps that they try to sell.</p>	Aleksanteri
	<p>Modulated road lighting</p> <p>They did experiment at ASTAZERO. (The city have been torn down, but it will be rebuilt). A target would be turned when they crossed a laser line. There were pressure sensors at the break and gas paddle, with a raspberry pie, so it could recorded each actions at the break with timestamps.</p> <p>Prisma light provided the light sources. 40 tests persons over three nights, they droves 12 rounds in total. The targets that moved was randomized from each run for each person. They had to fill out a questionnaire answering some driver related questions. There were three lighting scenarios. The experiment was done in wintertime with snow. The cars headlights were lowered. So, most of the light hitting the targets came from the road lighting. Some of the test persons said they didn't see a difference in the lighting even though it was dimmed between two runs. There was a lot of data collected and saved in an excel sheet. Incl some comment from the tests persons. The results will be able to be published.</p> <p>We talked about a potential project with bicycles and tunnels.</p>	Maria
	When to go from transition zone to inner zone	Kai
	Tunnel measurements in Norway	Arne/Dennis

	<p>New projects</p> <ul style="list-style-type: none"> • Potential lighting scheme project for cyclin in the underpasses • Kai will make a proposal for LTP and short tunnels – to combine german solid angle method and LTP. • Prestudy on the possible effect from glare from bikelanes in relationship to an unlit road. Stefan and Maria will come with a project suggestion. 	All
	<p>Status national guidelines (each country)</p> <p>Finland: “Road, tunnel and railway lighting”-guidelines will be published next summer. The first 8 chapters are revised. The document will be around 160 pages long when it is done. They have prepared a list of all the areas where it is possible to turn off the road lighting luminaires. Around 43 MW used in total, 35% can turned off, giving a saving of 15 MW.</p> <p>Sverige: The “guideline for road and tunnels”, draft will be ready in September 2023, and will be out for comments for 9 months and published in June 2024. The municipalities will be allowed to come with comments.</p> <p>Denmark: Denmark have recently updated the handbook for road lighting. The tender specifications will be updated whenever there is a need. History – the electricity companies normally sold the road lighting and owned it, they are still running the road lighting in Denmark but do not own it anymore. The municipalities owns it now.</p> <p>Norway: Revised requirements for N100 for road and street lighting and N500 for tunnel lighting for 2021 and 2022 respectively. N125 is going to be removed from statens vegvesen and moved into a technical committee for Norway.</p>	All
	<p>Flicker measurements on street lighting luminaire, when they are dimmed</p> <p>A perfect presentation by Dennis, big applause. Dennis will share the presentation.</p>	Dennis
	<p>Measurement of tunnel luminaires</p> <p>A perfect presentation by Dennis, big applause</p>	Dennis
	<p>Rapport too NMF meeting</p> <ul style="list-style-type: none"> • 	Arne