

SWITCH FROM FLUORESCENT TUBES TO CHROMAVISO CIRCADIAN LIGHTING



Light that follows our biological circadian rhythm and has clinically documented evidence



AGENDA

- 01** Chromaviso circadian lighting compared to conventional lighting
- 02** Consequences of conventional lighting
- 03** Effect of Chromaviso circadian lighting – staff
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- 09** Fixtures
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Chromaviso circadian lighting versus conventional lighting

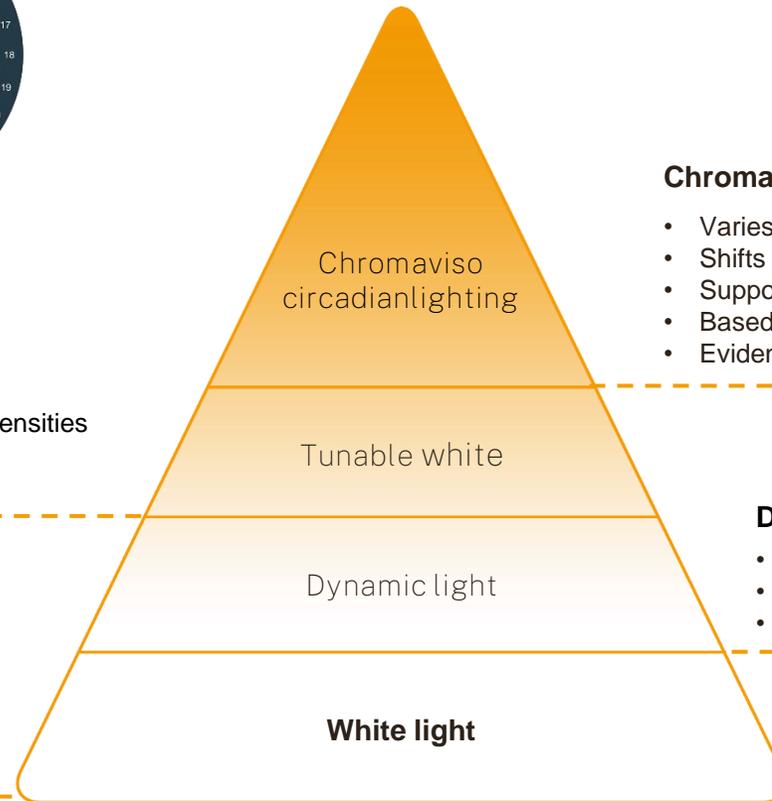


Tunable white

- White light
- Various color temperatures and intensities
- Adjusted when needed
- No evidence or health benefits

White light

- Uniform white light
- Can possibly be dimmed
- No evidence or health benefits



Chromaviso circadian lighting

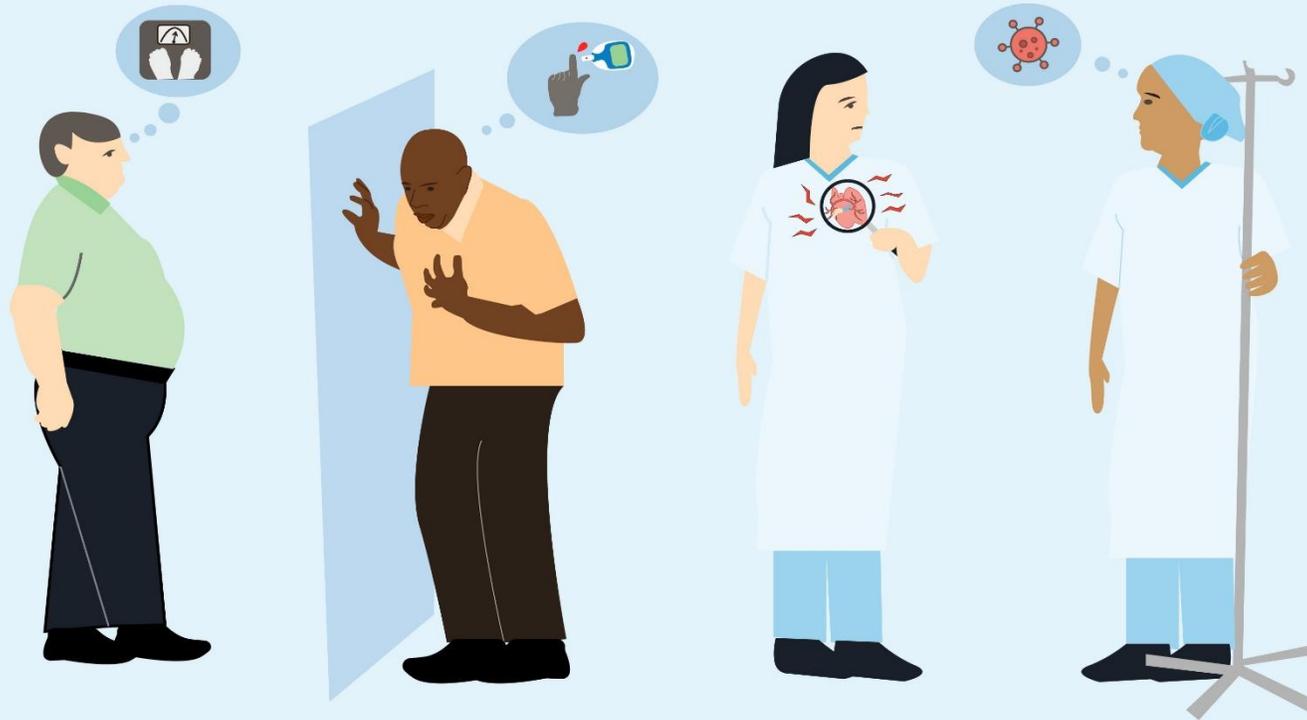
- Varies in intensity and color spectrum
- Shifts automatically 24/7/365
- Supports the body's natural circadian rhythm
- Based on clinically documented lighting protocols
- Evidence of health-promoting effects

Dynamic light

- White light in various shades
- Possibility to use RGB colors for ambience
- No evidence or health benefits

Consequences of conventional light

Too little light during the day and too much light at night



-  Poor and fragmented sleep
-  Reduced performance capacity
-  Appetite at the wrong times, risk of overweight
-  Weakened immune system
-  Increased risk of miscarriage
-  Hormonal disturbances
-  Increased risk of cancer
-  Increased risk of diabetes
-  Increased risk of heart disease
-  Low mood and frustration
-  Increased risk of depression
-  Disruptions and activities at the wrong times

Effect of Chromaviso circadian lighting – patients

- Reduces depression, anxiety, and fatigue
- Improves sleep and memory
- Shorter hospital stays, faster recovery
- Reduced need for medication



80%

Experience improved sleep habits



72%

Experience better sleep quality



75%

Experience better quality of life



80%

Experience greater calm



52%

Experience improved mood / reduced depression



52%

Experience less fatigue



Effect of Chromaviso circadian lighting – staff

- Reduces sick leave
- Improves working conditions and increases well-being
- Better sleep and feeling more rested
- Increases efficiency and performance
- Attracts and retains staff



79%

Experience greater well-being



75%

Experience less fatigue



75%

Experience more energy



79%

Experience increased well-being



72%

Experience less eye fatigue



21%

Reduction in sick leave



Evidence for Chromaviso Circadian Lighting



Clinical studies

Stroke Unit, Rigshospitalet Glostrup, Anders Sode West

90 patients: Reduces depression and fatigue more effectively than medical treatment.

49 % less depression
46 % increased well-being
28 % reduced anxiety

Circadian lighting has the same effect as antidepressant medication after a stroke

Neurosurgical Intensive Care, Aarhus University Hospital, Leanne Langhorn

20 patients: Improved sleep and memory. Reduced hospital stay, depression, and medication use.

ROOM-LIGHT, Psychiatric Center Copenhagen, Klaus Martiny

150 patients: High acceptance and usage. Reduced hospital stay, depression, and medication use.

Clinical Research Center, Hvidovre Hospital, Kristina Aggergard

35 residents and 35 staff: Improved sleep, circadian rhythm, and well-being.



Qualitative studies

Aarhus University Hospital and Rigshospitalet, Leanne Langhorn

Pilot study with 26 nurses on rotating shifts: Better sleep, feeling more rested, and improved work environment.

Stimulation Room, DemensCentrum, Jeanette Jepsen

46 residents: Improved mood, increased attention, and enhanced memory. Reduced aggressive behavior during physical and mental distress.

Odense Municipality, Herluf Trolle

Nursing home: Improved activity levels among staff. 21% reduction in sick leave. Less nighttime wandering among residents. Better sleep and well-being.

21% lower sick leave

68% less aggressive behavior

Increased efficiency among employees

PRODUCTIVITY



The effect of circadian lighting:

- Increased efficiency
- Reduced sick leave
- Improved staff well-being and loyalty
- Easier recruitment of employees

WORK ENVIRONMENT



The impact of circadian lighting:

- Reduced stress
- Increased energy
- Reduced headaches
- Improved mood
- Reduced depression
- Increased comfort and well-being

SUSTAINABILITY



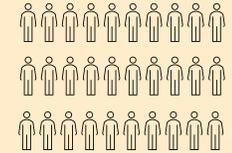
- Environmental and social responsibility that supports your ESG reporting
- Can be integrated into your CSR strategy
- Optimized energy consumption
- Reduced energy use by more than 60%
- Improves certification opportunities

Increased efficiency by 2.5%

Salary costs



300 employees



Average gross salary for the nurses

€55.000

Total annual salary cost

€16.500.000

Annual savings: circadian lighting

€16.500.000 x 2,5%

= €412.500

Return of investment

Assumptions:

- 300 employees
- 1000 luminaires
- Price per luminaire based on LED technology:
 - Chromaviso circadian lighting: €442
 - Alternative lighting solution: €160

Not included:

- Savings from shorter hospital stays
- Savings from reduced medication use



The calculation is based on a combination of our two lighting solutions, which are presented on the next page

The delivered fixtures are based on one of our two lighting solutions below, depending on the current need



Circadian lighting for areas with activity and occupancy during the daytime



Circadian lighting for areas with activity and occupancy 24/7

Luminaries

HALO



GLOW



Control panel

The control panel features four distinct functions:

1. **ON** – Always circadian lighting
2. **OFF** – Turns off the light
3. **Standard/Task Lighting** – Light according to applicable standards
4. **Night Work Lighting** – Optimized for nighttime tasks



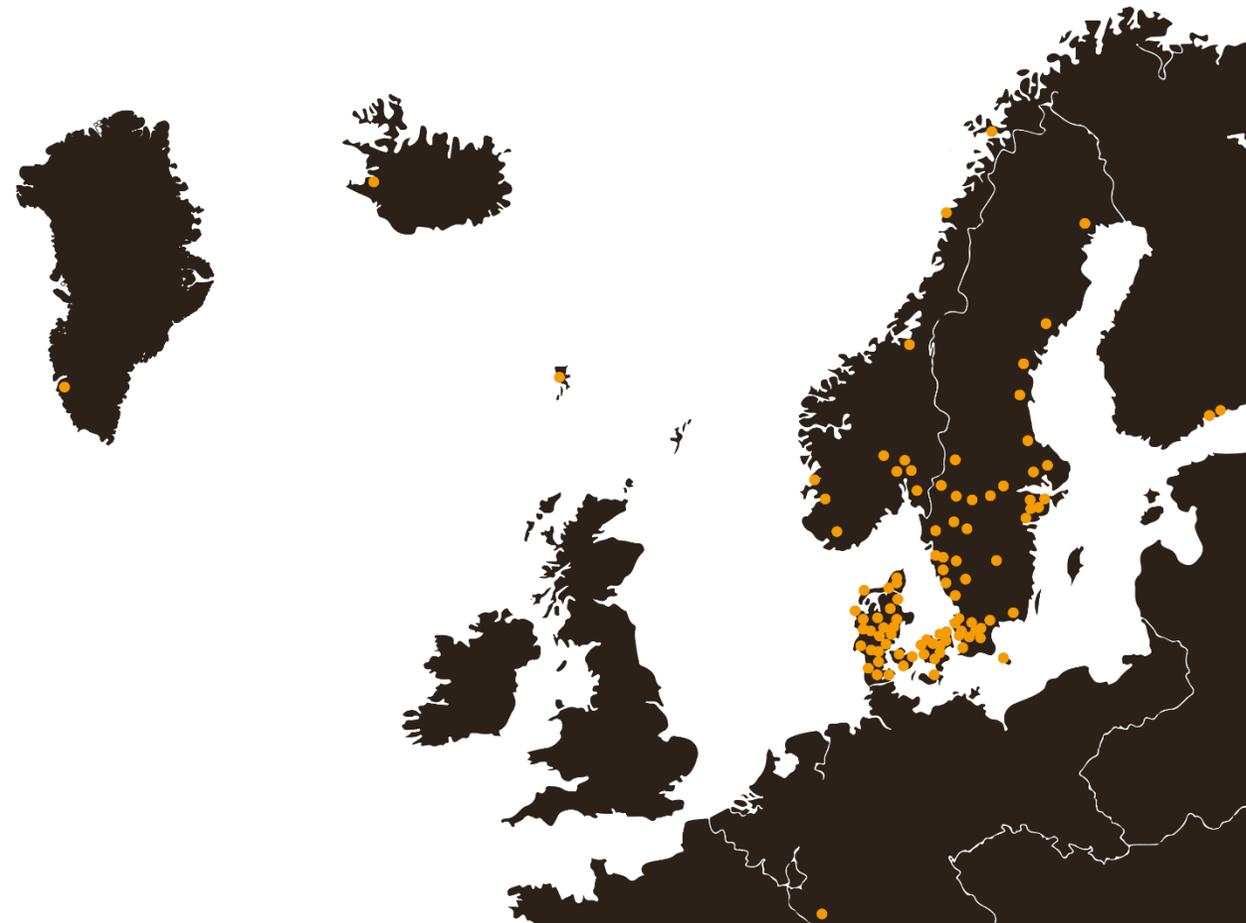
References

3000+ installations in Scandinavia

130+ hospitals in Scandinavia

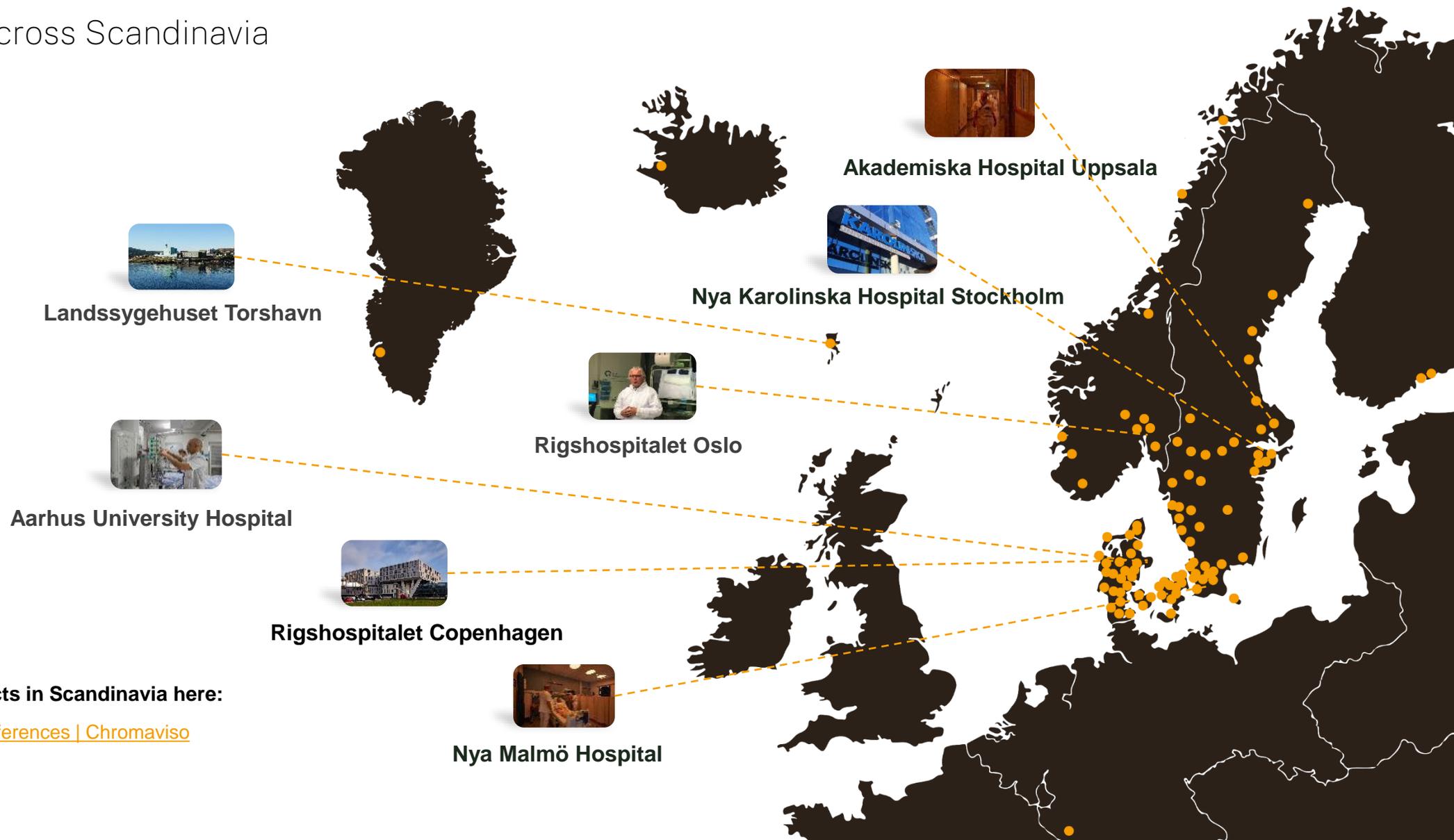
18+ years of experience

**100,000 residents, patients, and staff
benefit daily from circadian lighting**



References

From hospitals across Scandinavia



See a selection of projects in Scandinavia here:

[Our lighting projects and references | Chromaviso](#)