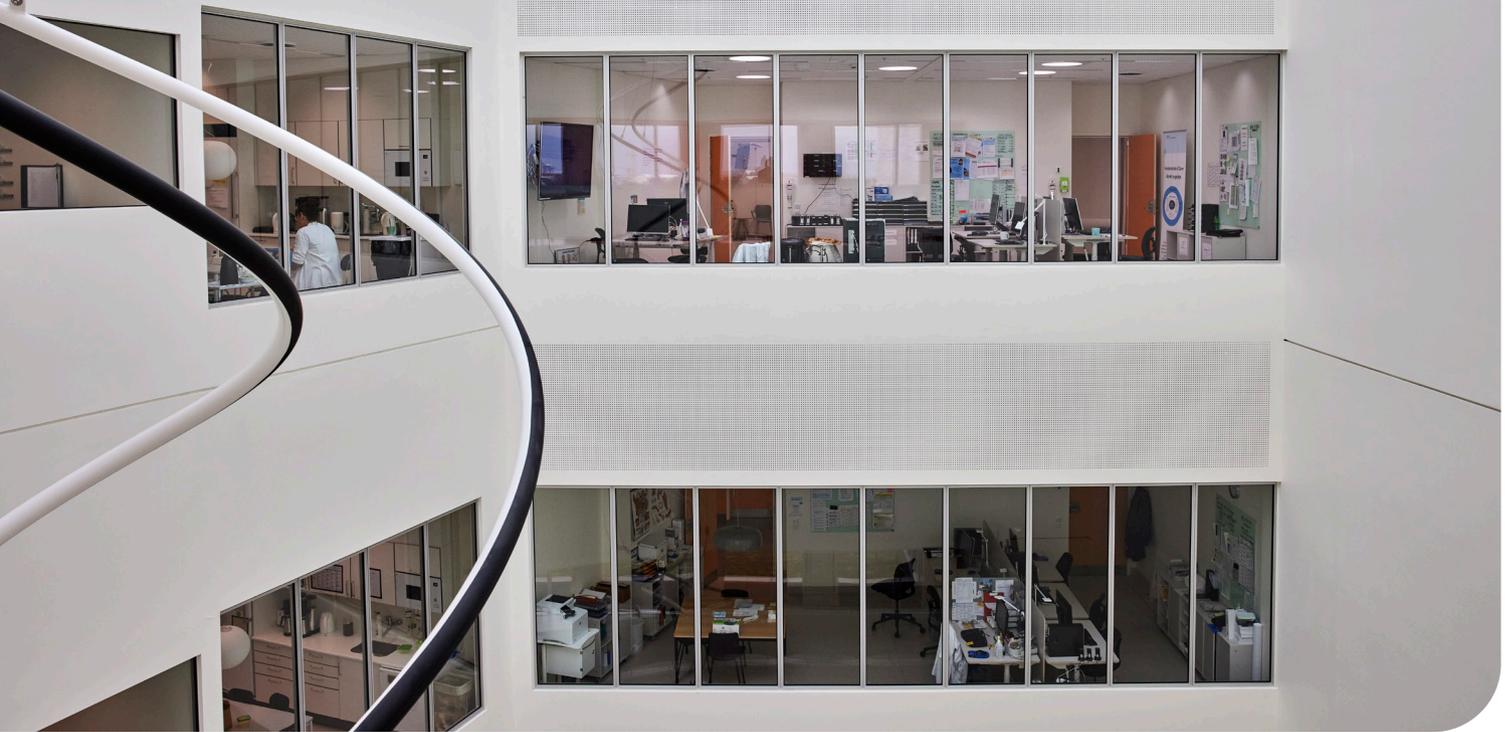




Seamless integration

The Neuro Center,
National Hospital, Denmark



Re-use your existing lighting installation and give it a health-promoting effect with clinical documentation

In Chromaviso, we are experts in complex integration projects, utilizing our own development and test environment. We offer a Turnkey solution, with lighting design, project planning, luminaries, lighting controls, and technical components of the best quality to a complete, health-promoting lighting installation, with a long warranty and uptime.

Our solutions are adapted to the project-specific environment, with commissioning and quality assurance. We are experts in implementation and cooperation with both technical and clinical staff across the healthcare sector.

In Chromaviso, we specialize in health-promoting lighting for hospitals, psychiatric wards, and nursing homes, and we lead the market with lighting that improves health and the working environment for both patients and staff. Lighting from Chromaviso is used as an active part of treatment in highly specialized and performing hospital environments, and our solutions have clinically documented effects.

Case

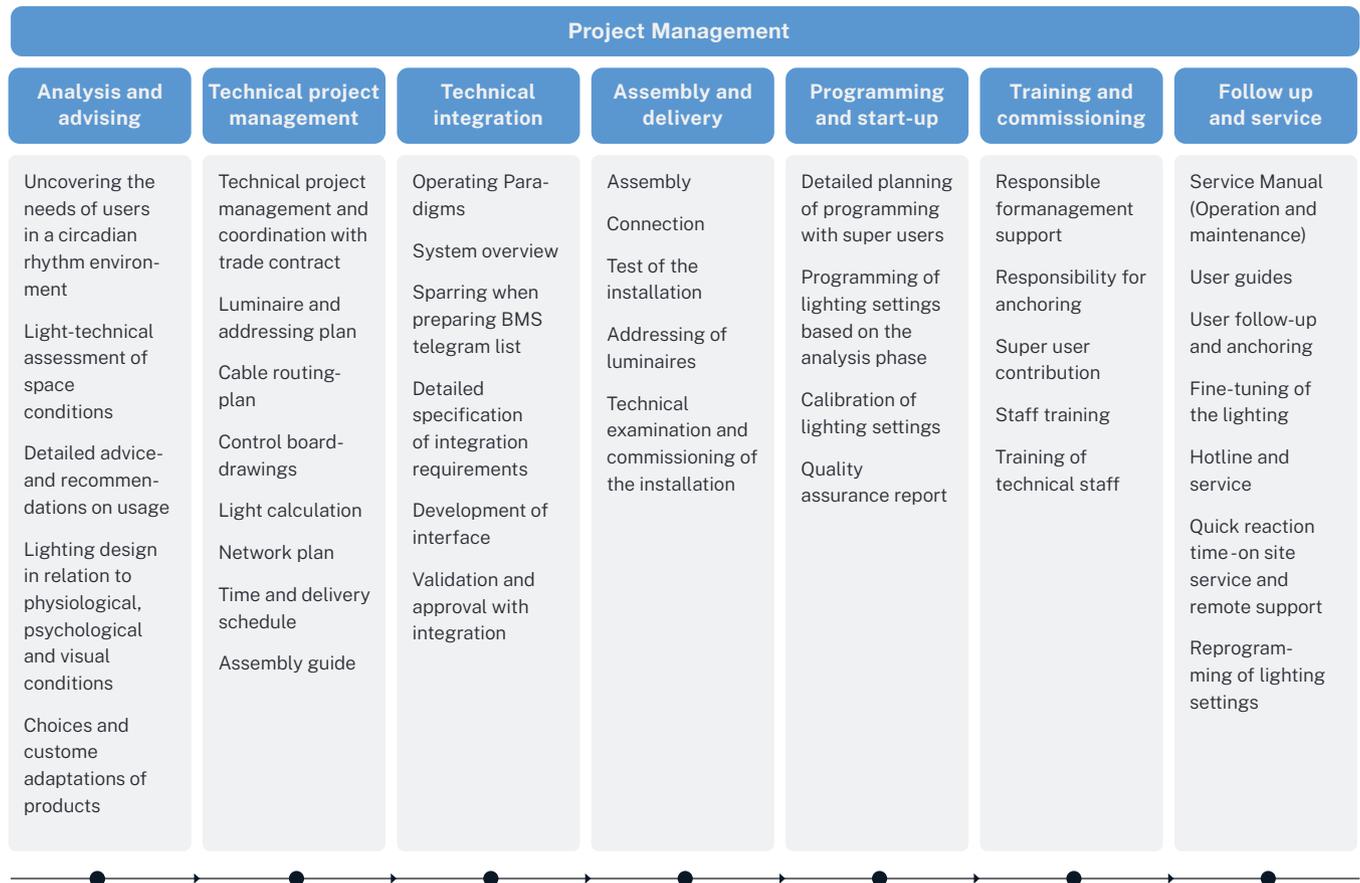
Location: The Neuro Center at the National Hospital, Denmark.

Problem: The existing lighting environment was without a health-promoting effect and was disturbing critical patients at night.

Solution: Integration of health-promoting lighting with existing KNX/DALI communication and selected luminaires.

+130 hospitals
+16 års specialization
+3000 projects

Turnkey solution based on expertise



Integration process at the Neuro Center, National Hospital of Denmark

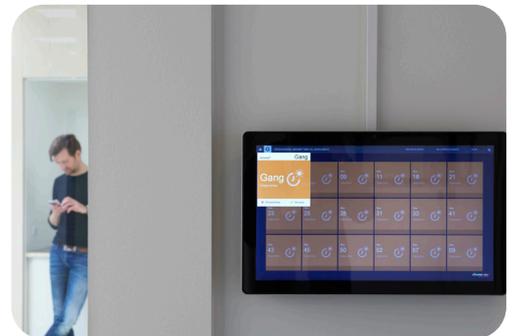
- Detailed inspection of control paradigms in the existing installation and the technical infrastructure with KNX, DALI, and IP communication
- Detailed clarification of the extent to which existing control panels and luminaries could be reprogrammed, to obtain the best possible use of the existing installation. This, in a holistic health promoting solution with an updated control paradigm and centrally placed, touch-based user interfaces
- Clarification with the client at the hospital's "Center for Properties" to determine the touch-points of the integration, and how the Chromaviso lighting control is implemented in the existing IT infrastructure
- Test and validating of all existing luminaries, controllers, push-button panels, motion sensors, and technical components in a mock-up at Chromaviso
- Validating and approval of communications integration in a mock-up at Chromaviso
- Validating, testing, and approval of communications integration at the Neuro Center
- Inter-connection between thirdparty and Chromaviso products at the Neuro Center in all relevant rooms
- Programming and calibration of light settings in all relevant rooms
- Commissioning with Chromaviso and the client
- Complete system overview with documentation
- Operational-and maintenance documentation
- Training of technical and clinical staff
- Iterative implementation process that assures optimal user satisfaction
- Technical monitoring with remote access that assures optimal stability

Design process that assures

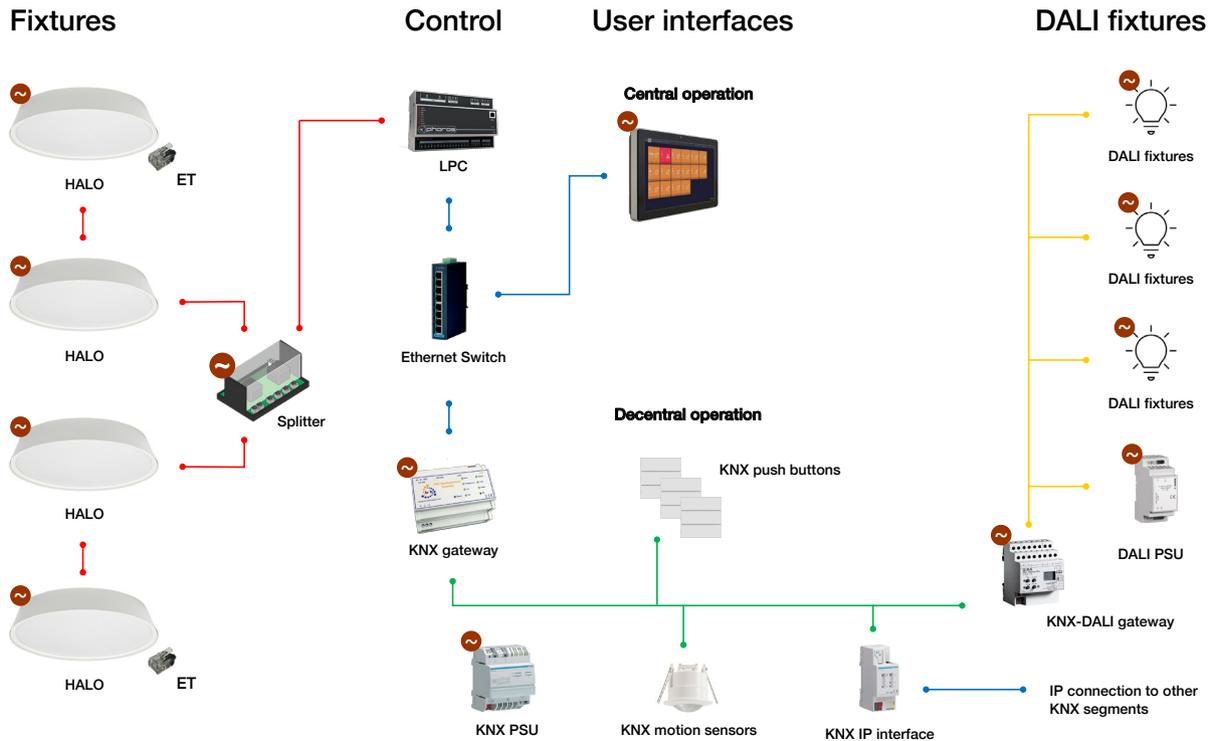
- **Protocol:** Assurance of correct technical communication
- **Software:** Validation of fast and robust integration across different technical communication protocols
- **Hardware:** Detailed identification of necessary technical components
- **Operation:** Integrated control paradigm and seamless integration between existing and new controls

Technical specifications

- High color rendering (Ra) ≥ 90 from 2,700K to 6,500K
- Blue-free night light – Broad spectrum amber in 1,800K with max. 1% energy share in wavelengths below 520nm
- Broad spectrum LEDs that assure homogeneity and consistency in the light over time
- Square-shaped dimming that gives optimal dynamics and precision in light intensity control
- Fades in 256 non-linear steps through DMX assures hour-long, seamless fading transitions, and synchronization regardless of installation size
- No flicker according to the IEEE PAR1789
- Color tolerance (SDCM) ≤ 3 Step MacAdam
- Opportunity for luminaries with protection rating min. IP44 and vandal protection
- High efficiency and long lifespan

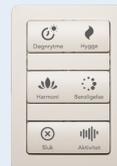
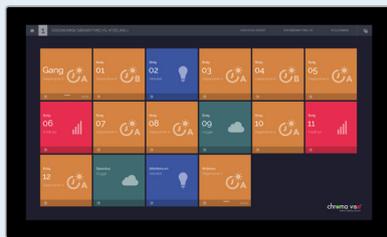


System overview



⊕ Earthed supply
 — DMX
 — Ethernet
 — KNX
 — DALI
 ET End termination
 chromavis

OPERATION Intuitive control panels with text and icons. Examples:





Results at the Neuro Center, National Hospital, Denmark

A transformed lighting environment supplied with health-promoting and clinically documented effects, for both staff and patients.

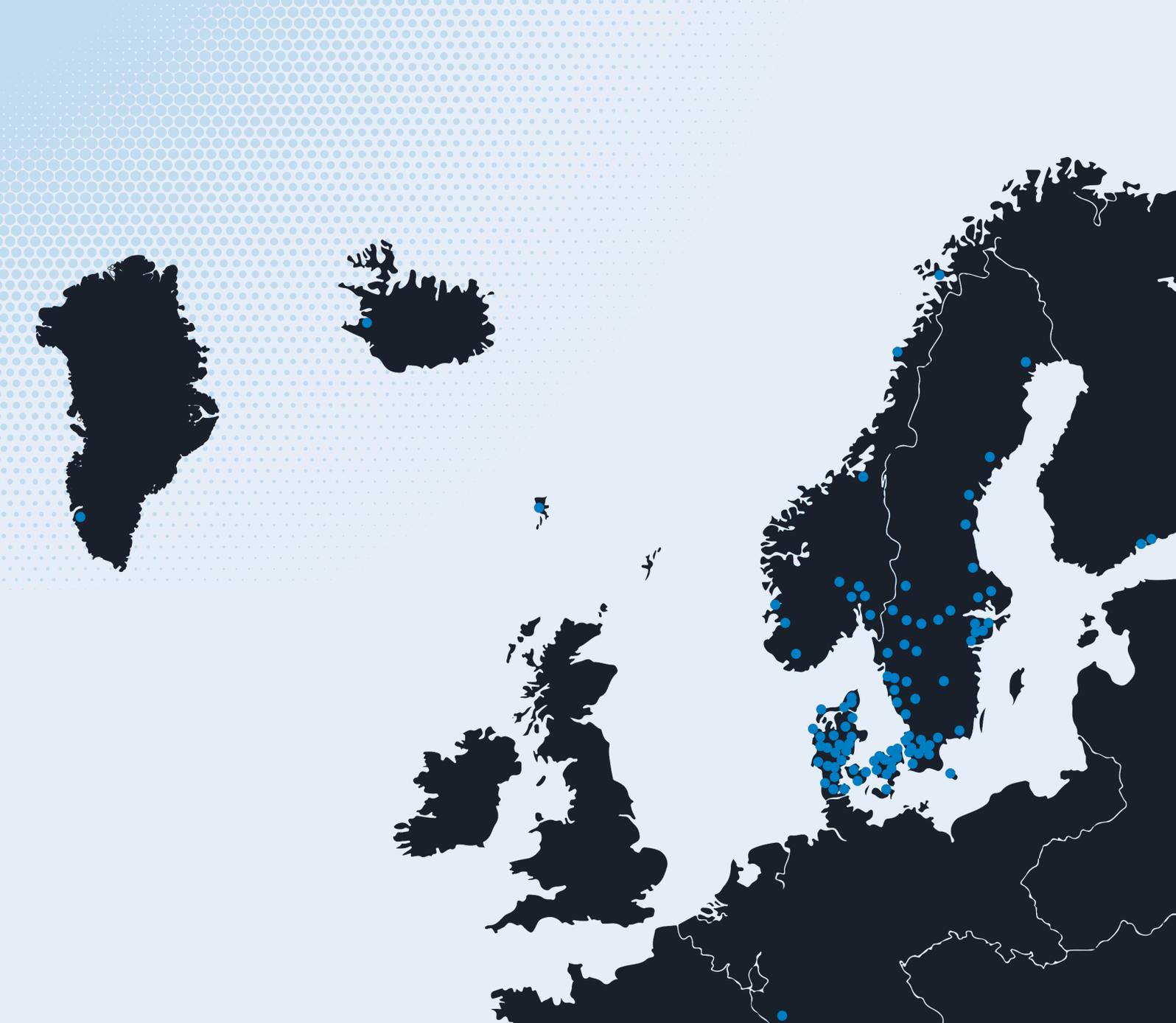
A sustainable upgrade that re-uses the existing installation most efficiently.

An optimal energy upgrade that automatically dims the light to the preferred, health-promoting levels during evening and night.

An installation of the highest quality, with a long lifespan and low energy consumption:

- The expected lifespan of the Chromaviso circadian luminaries is typically 100,000 hours.
- High efficacy up to 160 lm/W allows for health-promoting lighting with an energy consumption down to 1.5 W/m².

References at the Neuro Center can be provided on request



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