



Driving Intelligent Lighting

Belgrade, 11.05.2015

Tridonic worldwide

4 production sites / 27 sales branches / 1,970 employees





- ▶ Patent families since 2008: total 453, 75 % LED related
- ▶ 52 % of turnover with new products (<3 years)
- ▶ Tridonic Portfolio: 42 % turnover with LED
- ▶ Target 2015: Tridonic Portfolio 50 % turnover with LED
- ▶ R&D Spend 13/14: 9.6 % of turnover

60 years full of curiosity and inventiveness

- 1950 Production of control gear for florescent lamps
- 1978 Market launch of the first electronic ballasts
 - 1991 Launch of digital dimmable ballasts
- 1996 First electronic ASIC ECG in volume production
- 2001 Start of production of TALEXX LED modules with COB technology
- 2002 Launch of the DALI product range**
- 2003 Integration of lighting management into IT networks
 - 2007 TALEXXengine, the complete components for LED solutions
- 2008 Launch of xitec, the new processor technology
 - 2009 Cross-license agreement with Philips for ballasts and LEDs
- 2011 LED modules for general illumination
 - 2012 First marketable OLED modules
- 2013 Complete LED converter portfolio**
- 2014 LED modules with integrated converter**

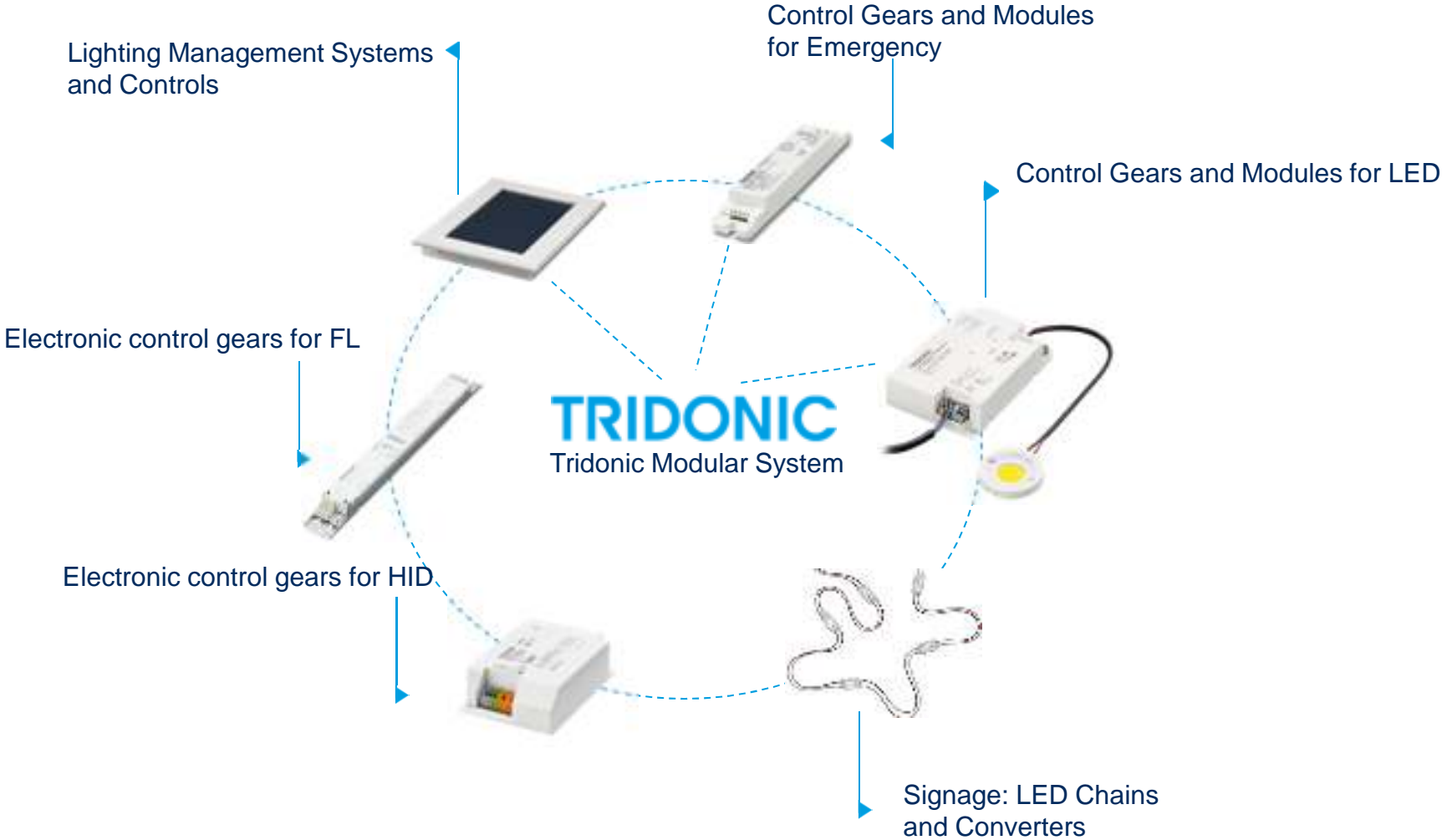


From “Old World“ to “New World“

Changes in market and technology



Component solutions



Superior LED system solutions to serve application needs I



Retail & Hospitality		 Spotlight Engine	 Circular Light Engine	 Downlight Engine	
Office & Education		 Linear Light Engine	 Square Light Engine	 Emergency	 Controls
Outdoor & Industry		 Industry Light Engine	 Flood Light Engine		
Signage		 LED module chains	 Suitable converters (IP20 / IP67)		

Backwards compatible
Light engine upgrade
(performance / cost) every 9-12 months up

Superior LED system solutions to serve application needs



Market Challenge	Tridonic LED System Performance
Payback time Energy saving	<ul style="list-style-type: none"> ▶ Leading efficacy up to 160 lm/W ▶ Dimming range 1 – 100 %; <0.2 W to 0.15 W standby power
Maintenance cost	<ul style="list-style-type: none"> ▶ High system reliability ▶ Lumen maintenance L90 50.000 hours F10
Light quality	<ul style="list-style-type: none"> ▶ Color consistency up to MacAdam 2 ▶ Photometric fit for the application
Beam shaping / optical control / Touch protection	<ul style="list-style-type: none"> ▶ Small light emitting area ▶ Fast replacement of conventional light source
Easy to use / thermal management	<ul style="list-style-type: none"> ▶ Plug and play ▶ Automated & constant lumen setting

Our customers



- ▶ Luminaire manufacturers (OEM)
- ▶ Lighting planners and designers
- ▶ Manufacturers installing lighting systems

Tridonic R&H TALEXXmodule SLE – G4 vs G5



NEW



NEW

Main benefits	Highest efficacy provide lowest Total Cost of Ownership		Highest Light quality optimised for the application	
Efficacy	up to 155 lm/W	up to 166lm/W (+6%)	up to 140 lm/W	up to 150lm/W
Luminous flux range	1200/ 2000/3000/5000lm	1200/2000/3000/4000 5000/6000lm	1200/ 2000/3000/5000lm	1200/2000/3000/4000 5000/6000lm
LES Range	10, 15, 19, 23	10, 15, 19, 23	10, 15, 19, 23	10, 15, 19, 23
CCT range	3000K, 4000K	2700K, 3000K 3500K, 4000K	3000K, 4000K, ART, FASHION, FOOD	2700K, 3000K, 3500K, 4000K, ART, FASHION, FOOD
CRI	> 80	>80	> 90	>90
Lifetime	50.000 h	50.000 h	50.000 h	50.000 h
Warranty	5 years	5 years	5 years	5 years

FOOD Spot Light Engine



Tailored spectrum composition for FOOD Lighting

- ▶ No need of filters anymore
- ▶ Only the right light is generated based on the reflectivity of goods



STARK SLE Classic

STARK SLE Gold

STARK SLE Gold+



STARK SLE Classic

STARK SLE Meat+

STARK SLE Fresh Meat



ART

Spot Light Engine

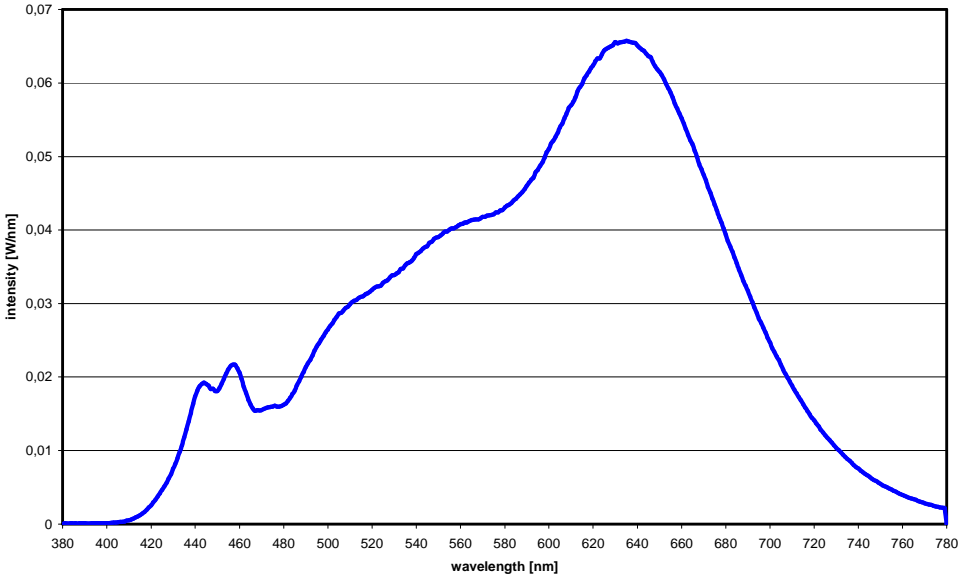
- ▶ Highest light quality in the market with full-spectrum technology
- ▶ Most natural way to present colours
- ▶ Application: Shop, Art & Culture



ART Spot Light Engine



- ▶ Superior colour spectrum with highest CRI 98 with Mac Adams 2 colour consistency
 - ▶ Comparable to incandescent lamp



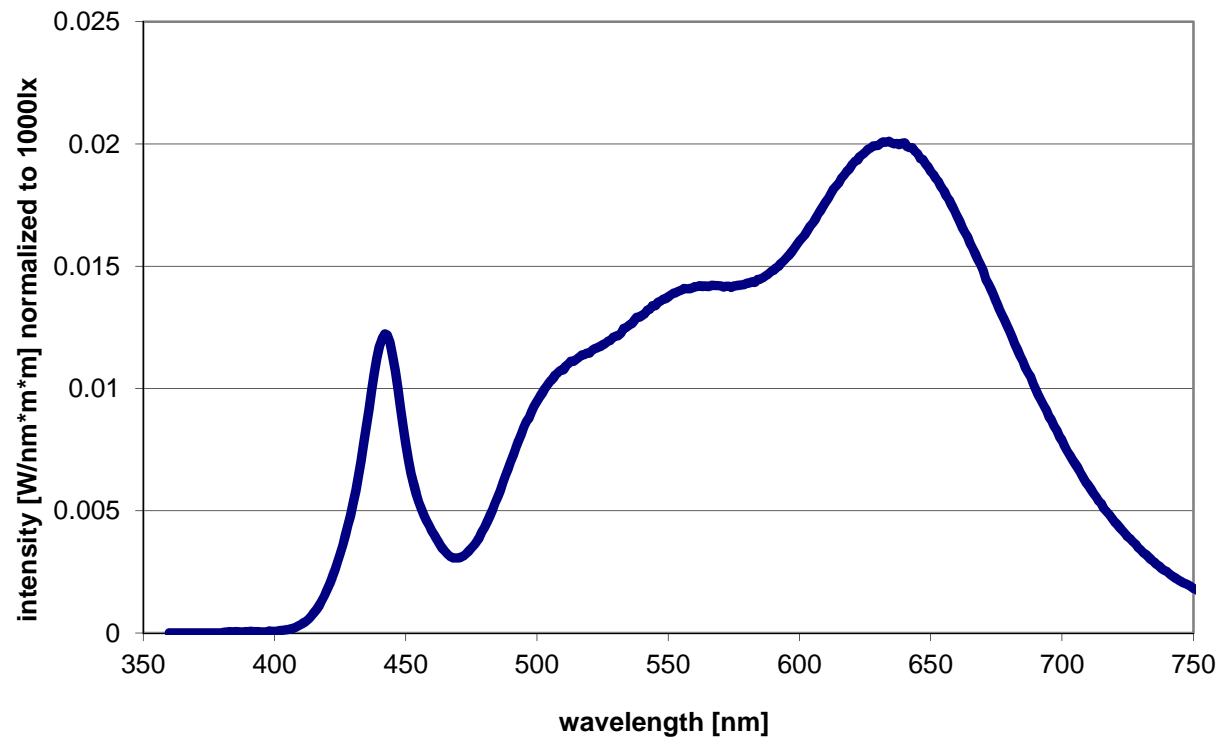
- ▶ Unique Light Quality in values

Ra8	Ra14		Ri01	Ri02	Ri03	Ri04	Ri05	Ri06	Ri07	Ri08	Ri09	Ri10	Ri11	Ri12	Ri13	Ri14	Ri15	Ri16
98	97		97	99	96	96	97	97	100	98	98	99	93	92	97	97	97	96



FASHION - New Dimension of White Light Quality Spot Light Engine

- ▶ Market situation today: “Yellow impression” of LED light compared to HID
- ▶ Normal white LEDs have no enhanced whiteness
- ▶ New Fashion White offers unique lighting experience: special LED spectra for warm and saturated colors combined with pure and cool white
- ▶ **Without UV light!**



FASHION

Light spectra Comparison

- ▶ UV spectra can potentially damage goods

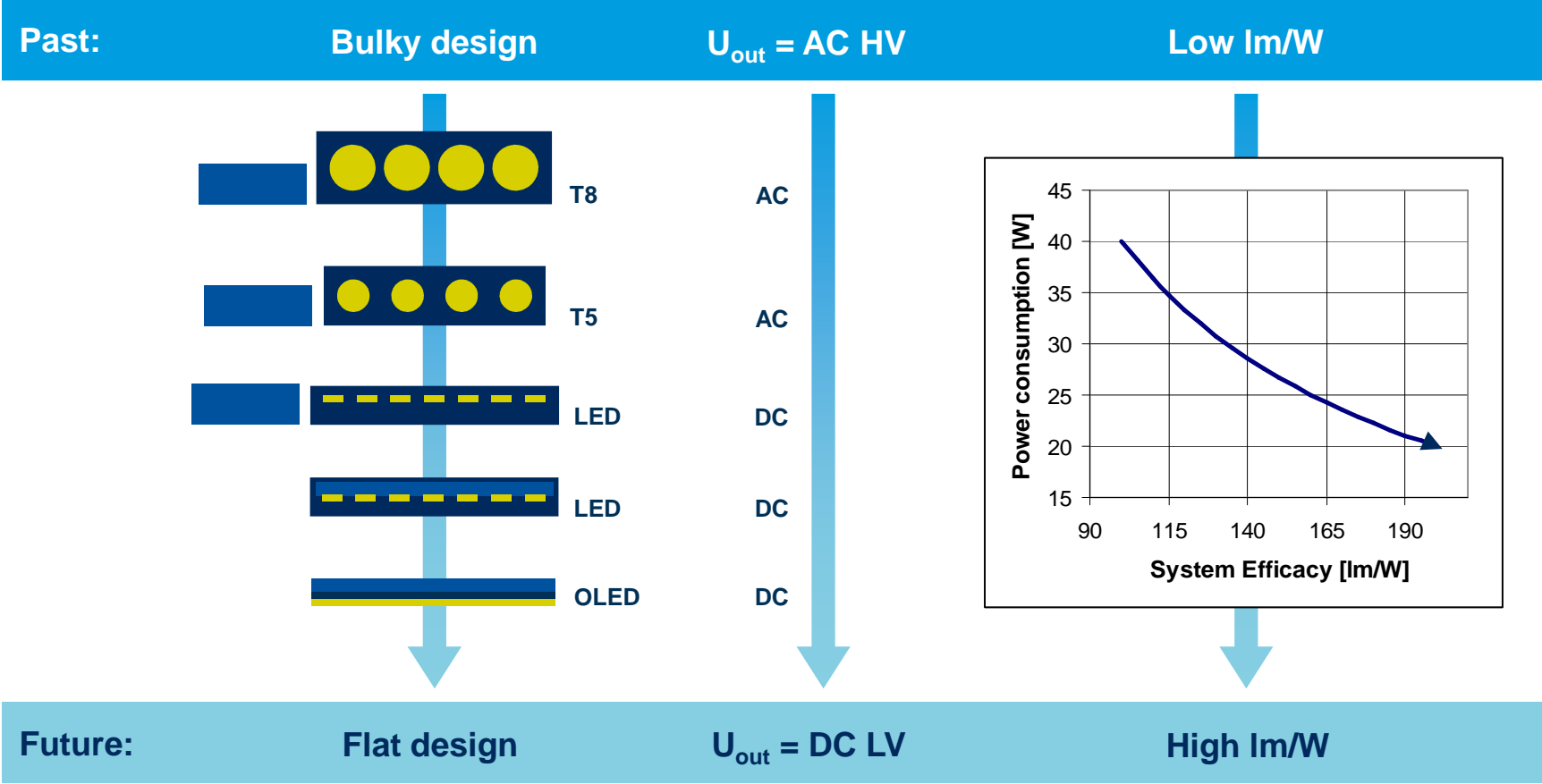


First non UV LED solution without compromises in light quality.

DC-String System overview

General trends

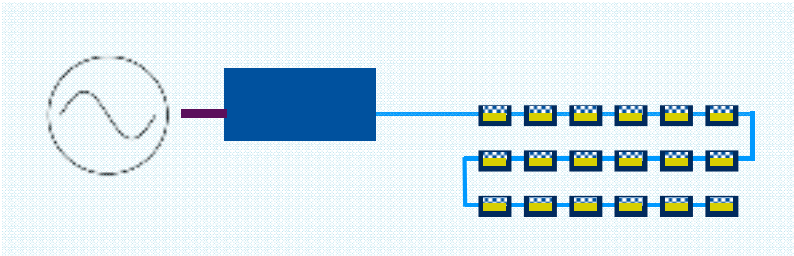
The luminaire of the future will be compact / flat, highly efficient and driven by low voltage/direct current



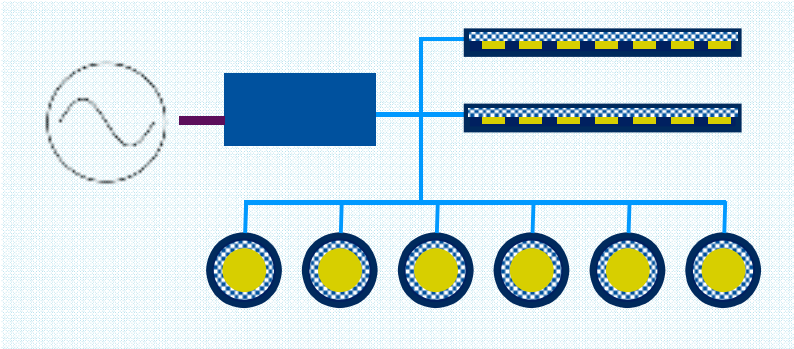
- Housing, optics
- Light source
- Driver

From signage to general illumination

LVDC signage solutions are the first step towards a LVDC system for general illumination

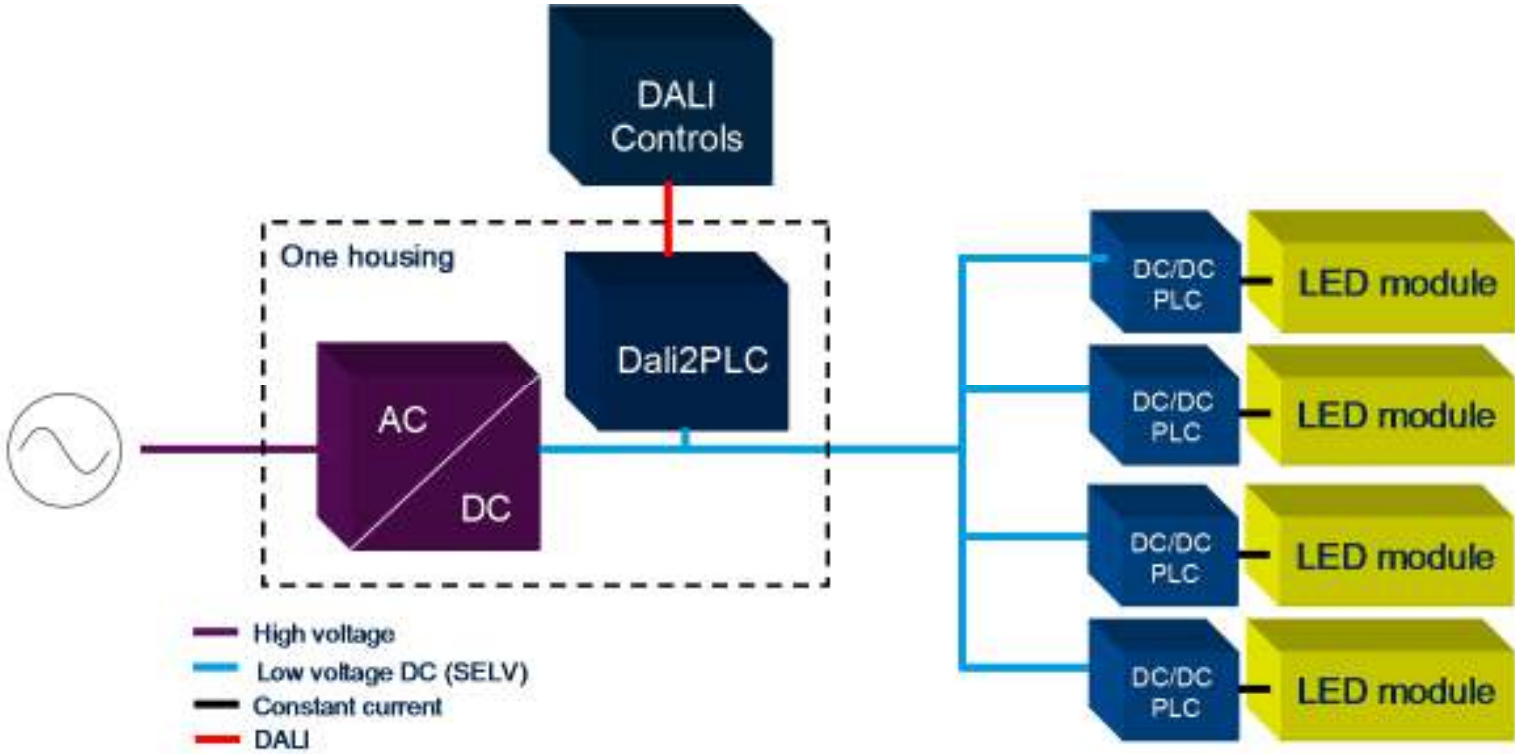


Signage application

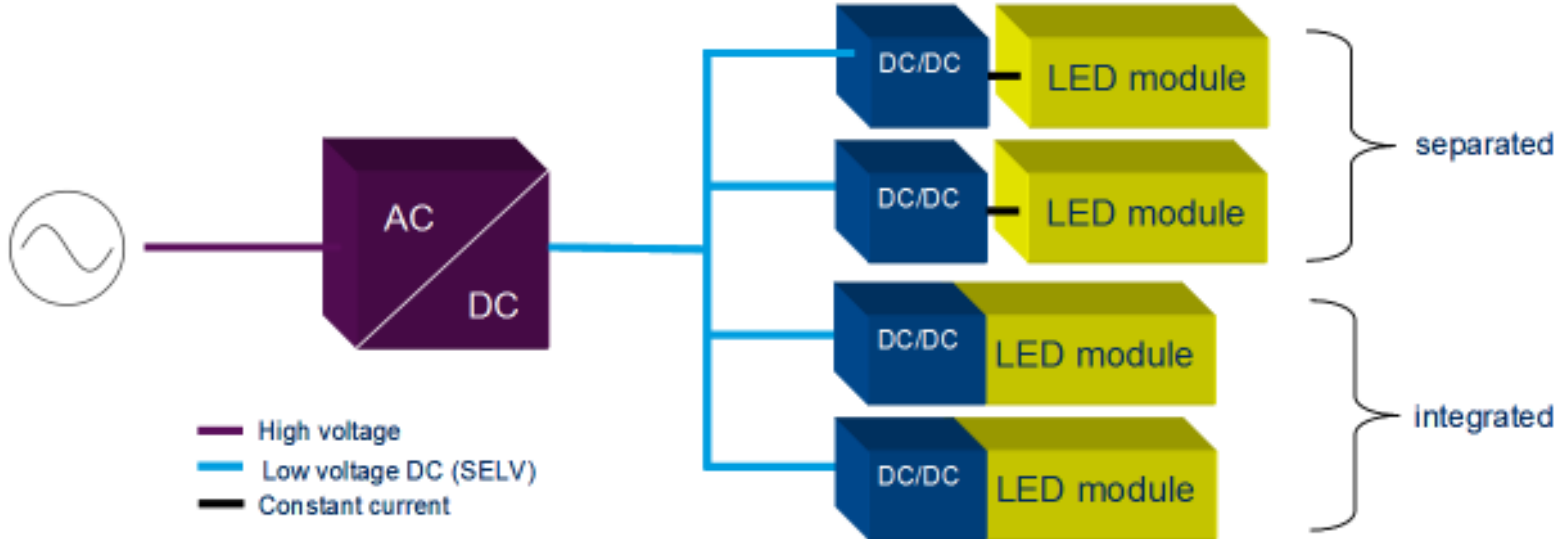


General illumination application

System overview dimming



System overview fixed output



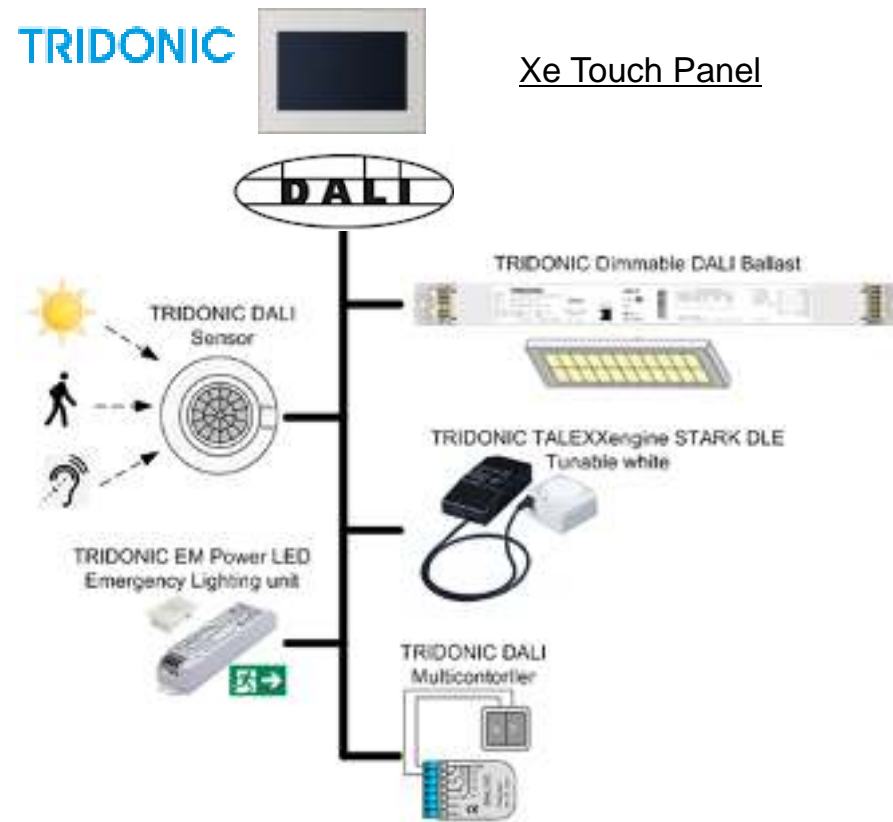


LuxControl Lighting Solutions

connecDIM

Today – comfortDIM solution

- ▶ DALI Addressing
- ▶ Control
- ▶ Scene
- ▶ Groups
- ▶ Sequence
- ▶ Schedule
- ▶ Motion detection
- ▶ Light regulation
- ▶ Remote control (IR)

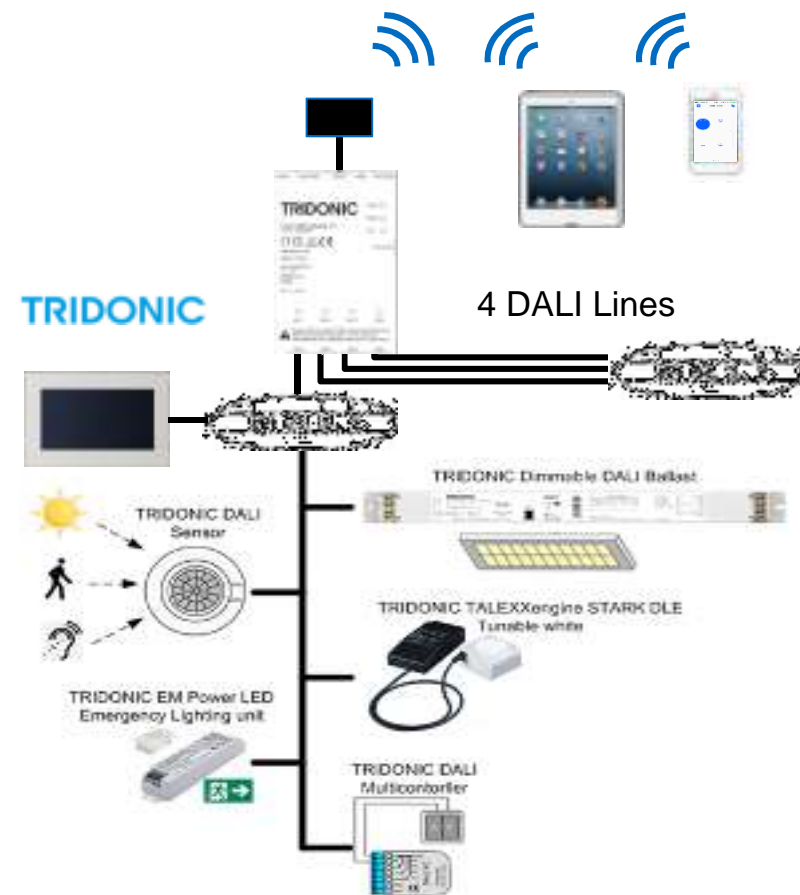


2 DALI Lines

Future – connecDIM solution

- ▶ Upgrade your existing DALI loops
 - ▶ Backwards compatible
 - ▶ Existing DALI Luminaires,
 - ▶ regardless of T8 or T5 or
 - ▶ latest LED technologies
 - ▶ Use existing DALI controls
 - ▶ Add new wireless controls via iOS Apps

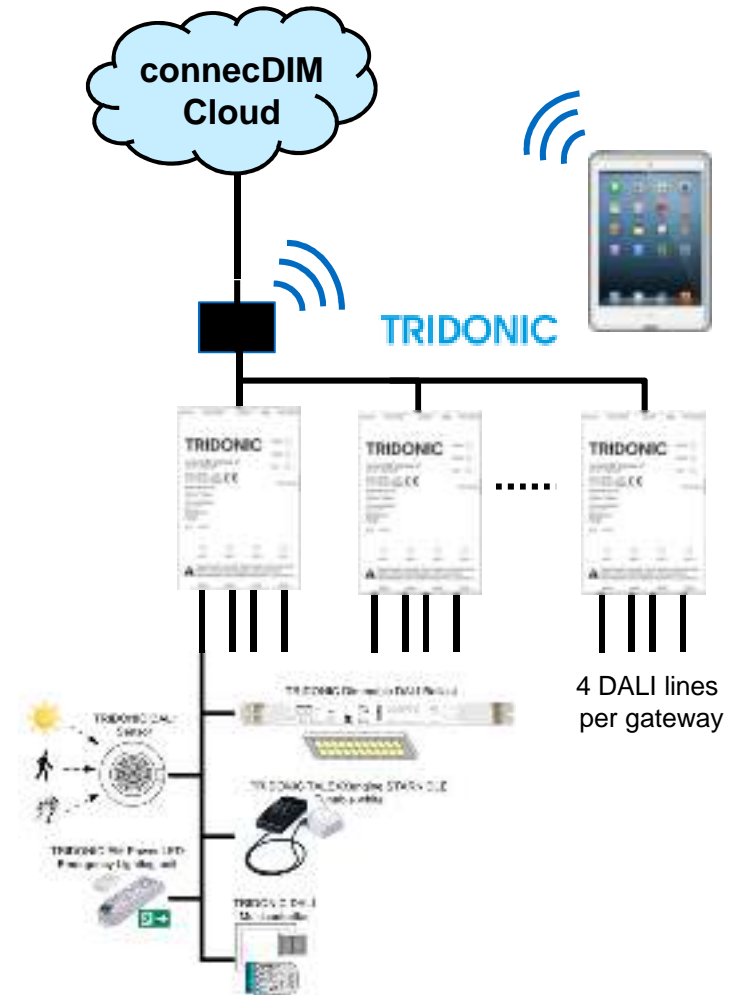
- ▶ Add to a new DALI site
 - ▶ Wireless commissioning
 - ▶ addressing, testing, group and scene setting
 - ▶ Wireless remote control
 - ▶ on/off,
 - ▶ dimming,
 - ▶ colour control,
 - ▶ EM units status check
 - ▶ Bridging Function



Future – connecDIM solution

Concept Overview

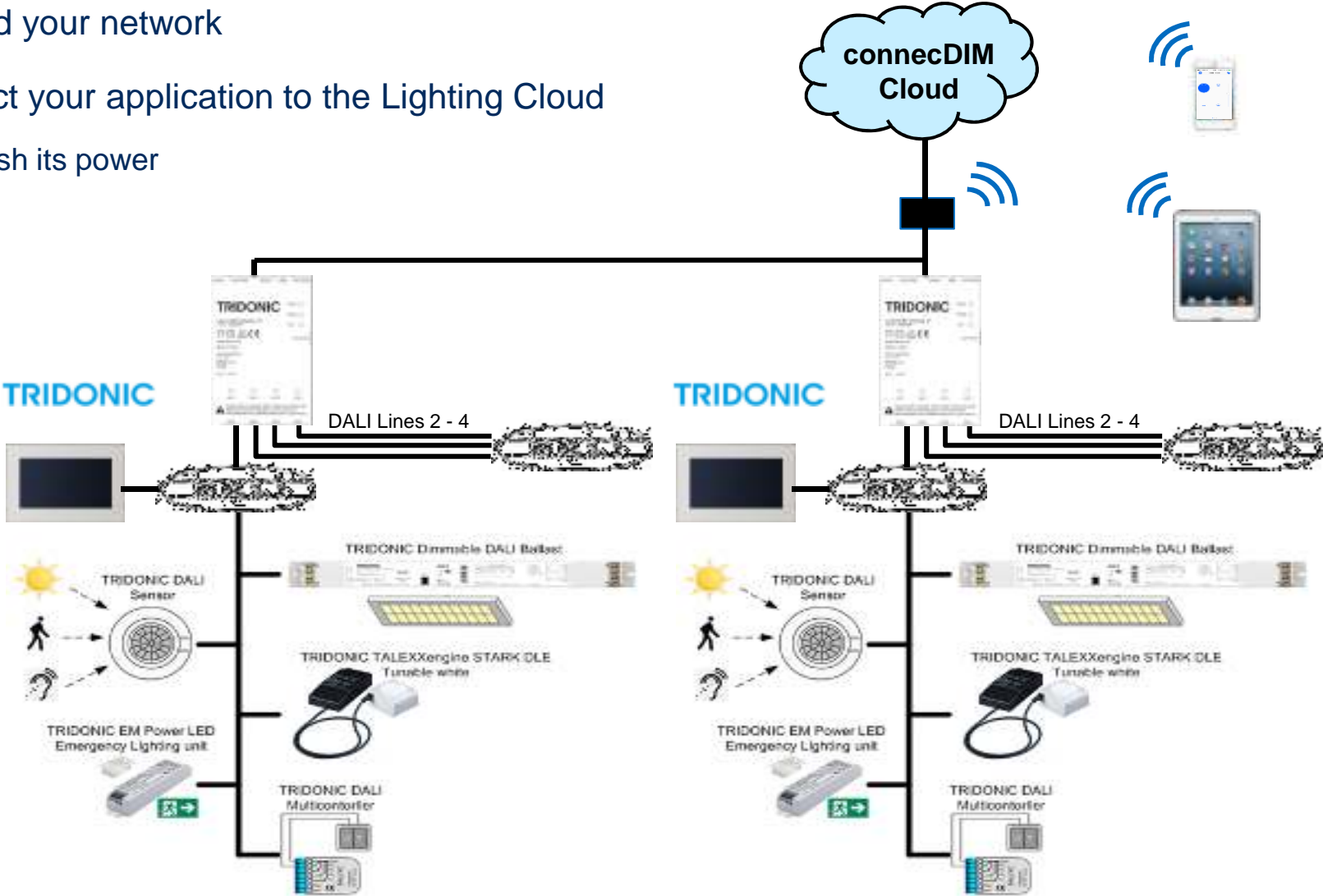
- ▶ Next phase to the comfortDim solution suite
- ▶ Lighting Solution based on DALI communications
- ▶ Suitable for multiple floor or a building application
- ▶ DALI Multi Master control concept
- ▶ Wirelessly commission and control lighting devices
- ▶ Bridging function
- ▶ Advanced management of all DALI devices
- ▶ Remote reporting through cloud based services



A typical DALI line with Tridonic control devices & gears

Future – connecDIM solution

- ▶ Expand your network
- ▶ Connect your application to the Lighting Cloud
 - ▶ Unleash its power



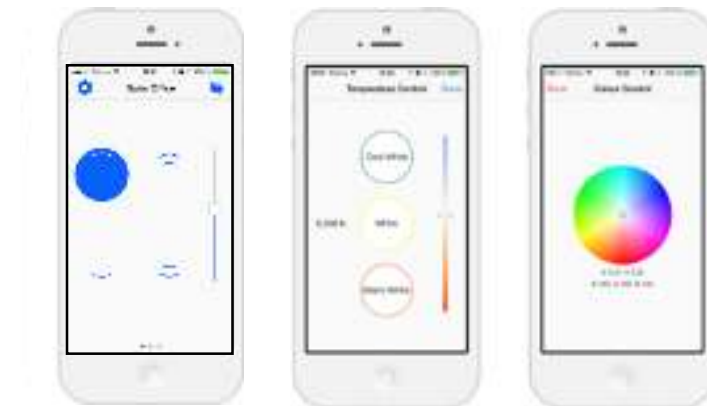
Product Features – connecDIM Cloud

- ▶ Central Monitoring Software accessible remotely
- ▶ Main features:
 - ▶ Monitoring site remotely
 - ▶ Schedule synchronisation
 - ▶ Maintenance
 - ▶ Emergency lighting tests
 - ▶ Energy Monitoring
 - ▶ Offsite Backup
 - ▶ Global Management & Reporting



Product Features – connecDIM Lite

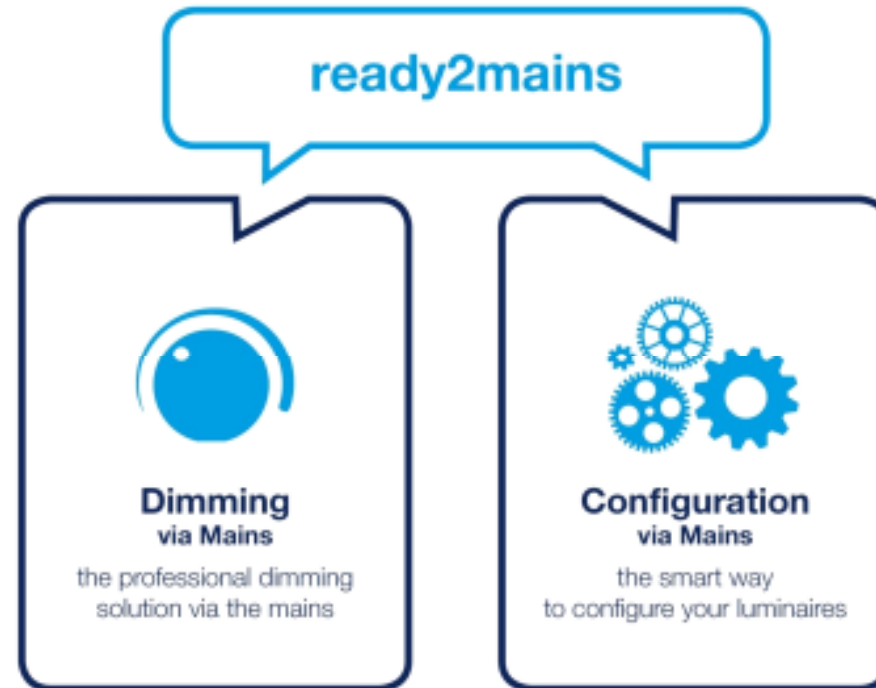
- ▶ Comfortable one hand remote App
- ▶ Main features:
 - ▶ Switch lights on and off
 - ▶ Dim lights
 - ▶ Colour control of LED Tunable white solutions
 - ▶ EM units status check
 - ▶ Create your own favourites
 - ▶ Free download via App Store





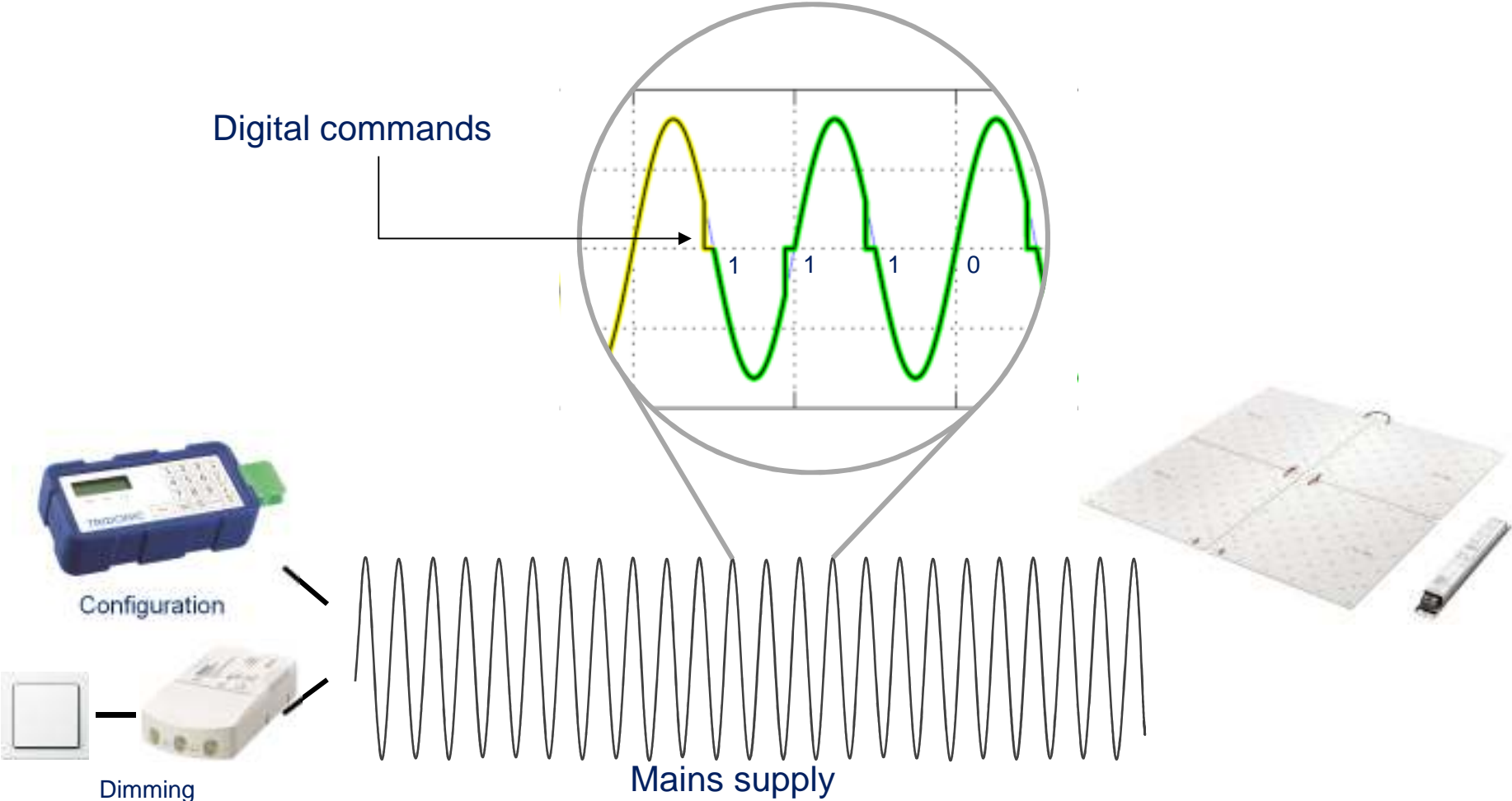
Tech Brief - ready2mains

Fundamentals



- ▶ a professional dimming solution via mains for easy upgrade from fixed-output to dimming installations ([movie](#))
- ▶ “programming for free”, even with fixed-output devices ([movie](#))

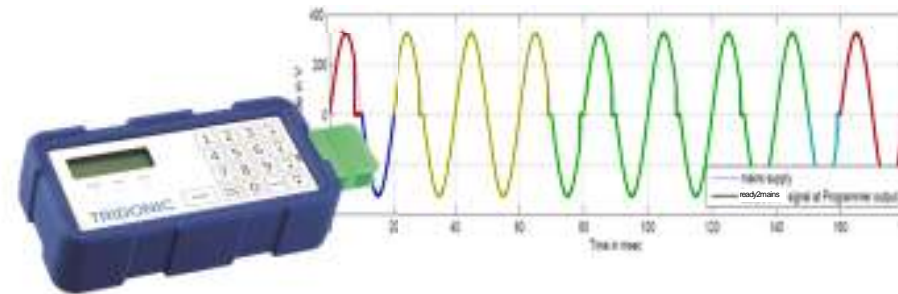
► ready2mains uses **simple phase-cuts** to send **digital commands** via the **mains wiring**



ready2mains - Configuration via Mains The Solution

Programming for free; even with fixed-output devices

- ▶ ready2mains **omits manual steps** and **enables automated configuration**
- ▶ **No need for dedicated programming interface**
- ▶ Technology **compatible with fixed-output and dimming devices** (EXC and PRE)

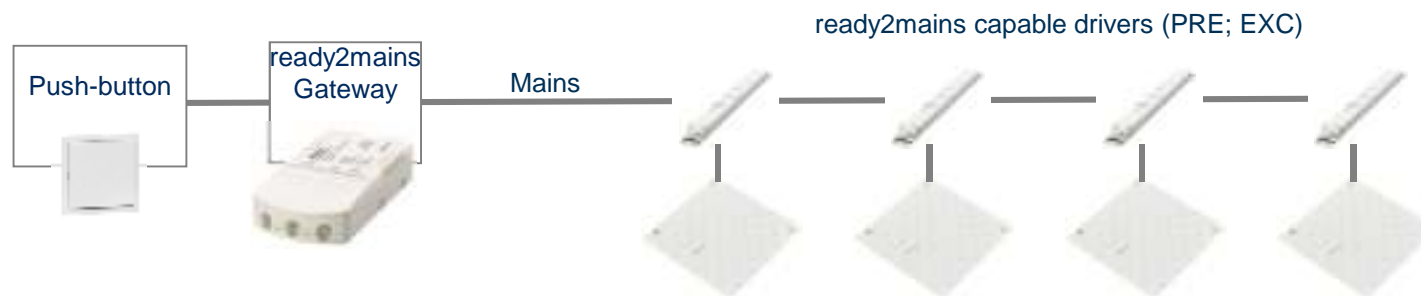


- + flexible integration in existing production lines
- + user-defined configuration scripts for delegable configuration
- + step size down to 1 mA

ready2mains - Dimming via Mains

Overview

- ▶ **“Easy refurbishment of existing installations with dimmable LED lighting”**
 - ▶ No need for any rewiring within the ceilings
 - ▶ Usage of cost-saving fixed-output drivers



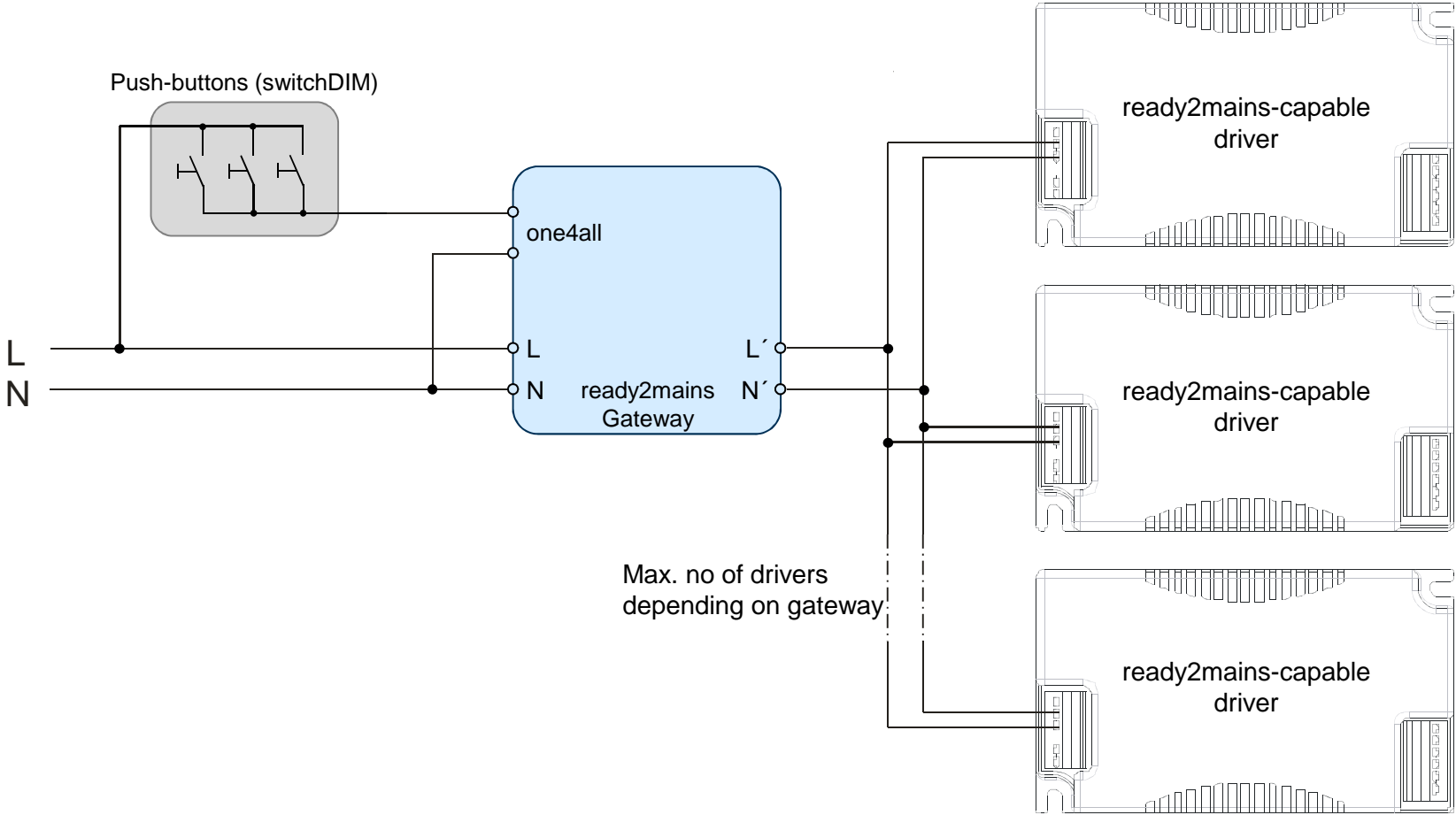
- ▶ Professional stepless broadcast dimming technology
- ▶ Typical ready2mains applications:
 - ▶ Office or class room group dimming; retail spot group dimming
 - ▶ Corridor lighting and parking areas (using corridorFUNCTION)

ready2mains - Dimming via Mains

Use Case: Non-dimmable Installation



- Scenario: refurbishment of existing non-dimmable installation

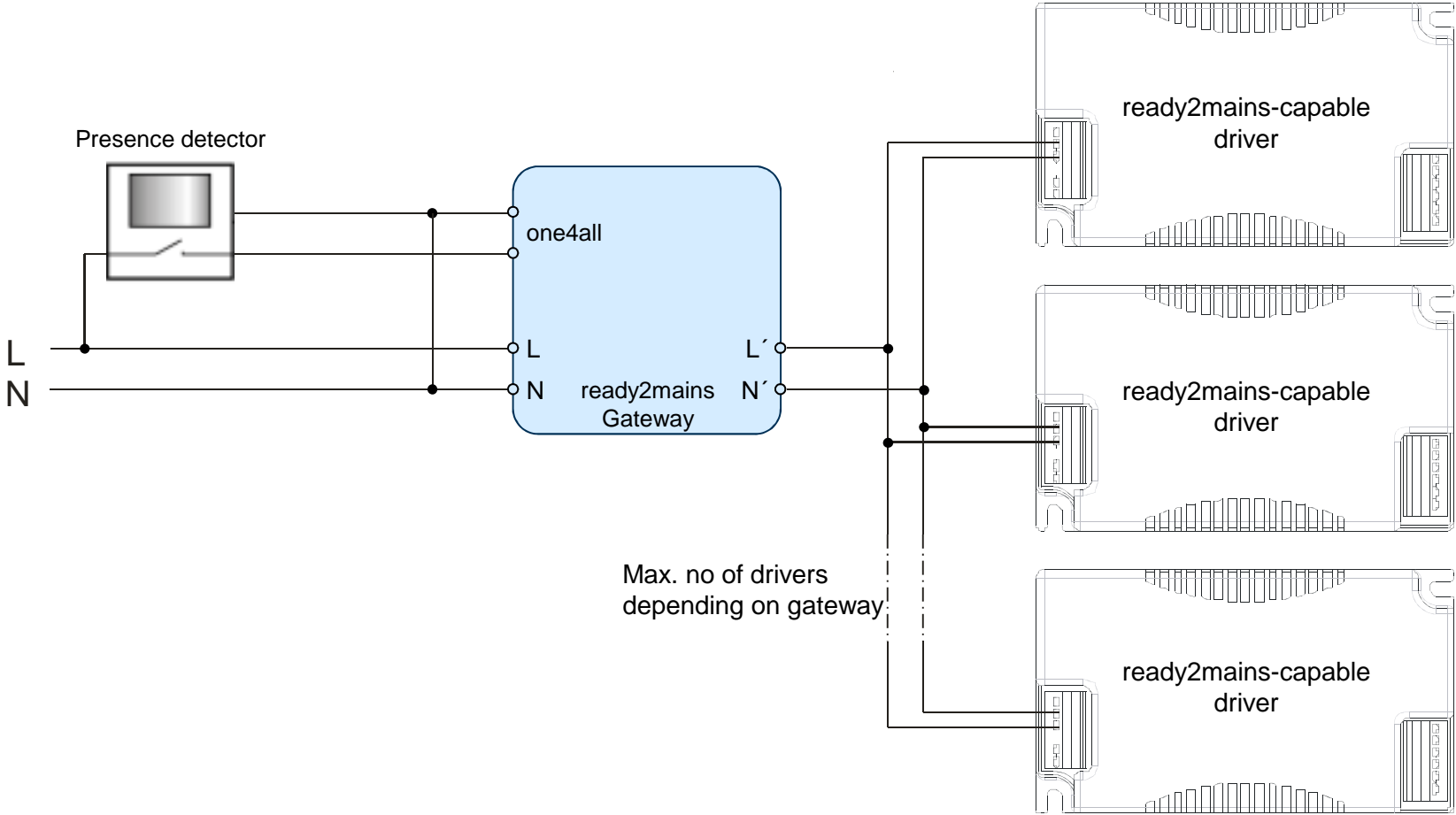


ready2mains - Dimming via Mains

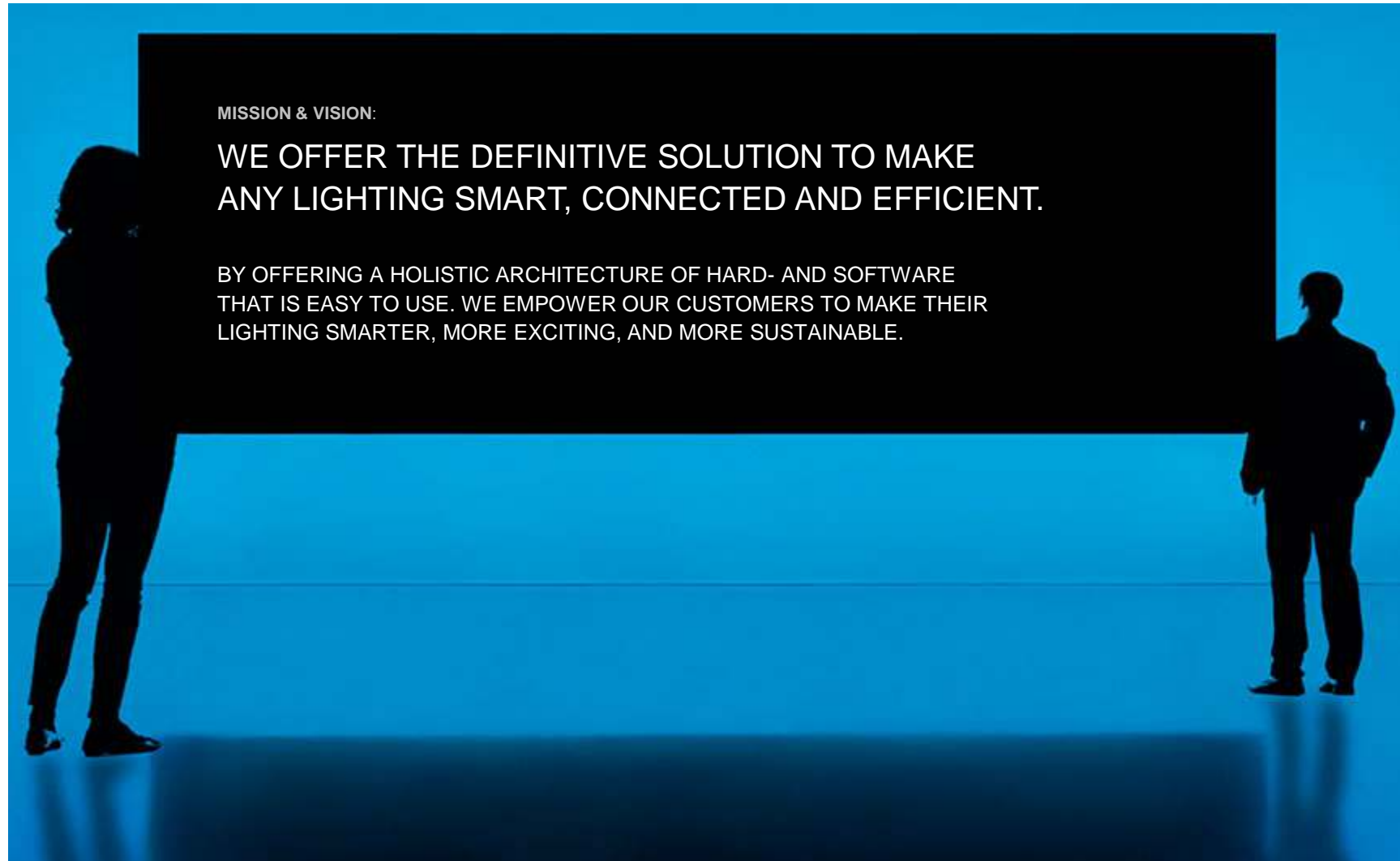
Use Case: Car Park



- Scenario: refurbishment of existing parking area installation with presence detection



Tridonic Mission & Vision



MISSION & VISION:

WE OFFER THE DEFINITIVE SOLUTION TO MAKE ANY LIGHTING SMART, CONNECTED AND EFFICIENT.

BY OFFERING A HOLISTIC ARCHITECTURE OF HARD- AND SOFTWARE THAT IS EASY TO USE. WE EMPOWER OUR CUSTOMERS TO MAKE THEIR LIGHTING SMARTER, MORE EXCITING, AND MORE SUSTAINABLE.

Zumtobel Group Mission & Vision

MISSION & VISION:

WE TAKE LIGHTING BEYOND ILLUMINATION.
WE GIVE THE WORLD NEW WAYS OF USING LIGHT,
ABOVE AND BEYOND CURRENT APPLICATIONS.
WE BELIEVE THAT LIGHT IS VITAL TO EVERYONE'S LIFE.

OUR BRANDS FORM A LIGHTING ECOSYSTEM. AROUND THE WORLD WE SHARE INSPIRATION,
NEW TECHNOLOGY AND HUMAN TALENT. AS A TEAM, WE LEVERAGE OUR MULTI-BRAND
PORTFOLIO TO CREATE UNIQUE VALUE FOR OUR CUSTOMERS. OUR SOLUTIONS ARE
COST-EFFECTIVE AND SUSTAINABLE, AND THEY PUT HUMAN NEEDS FIRST.





**Thank you for
your attention!**