SP3 x KURZ

Virtual Validation of design driven multi-layer lighting

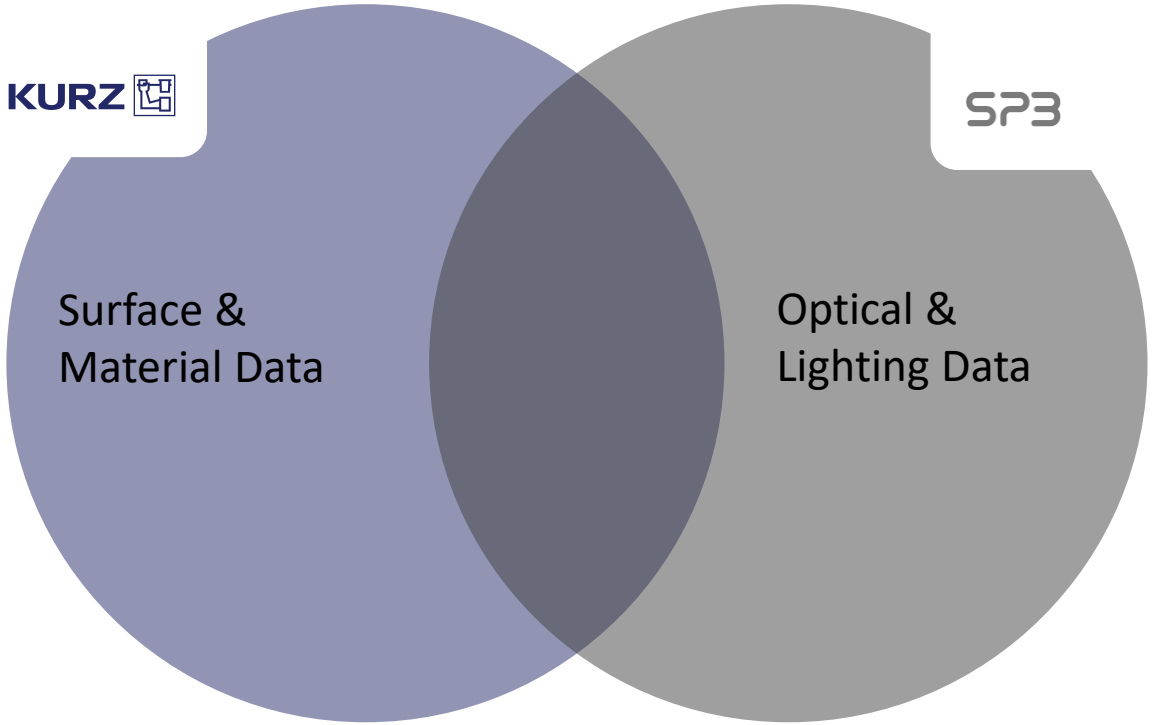
Starting Point

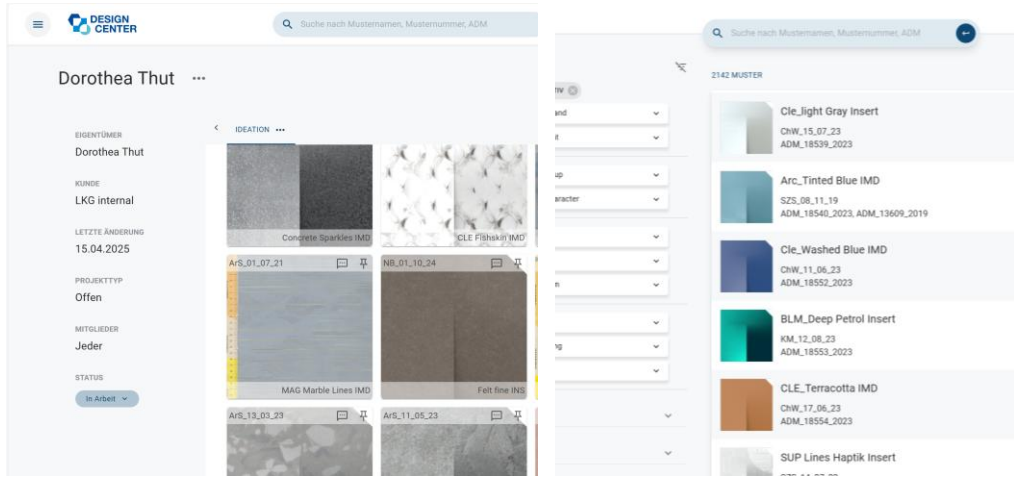
Challenge of mulit-layer lighting

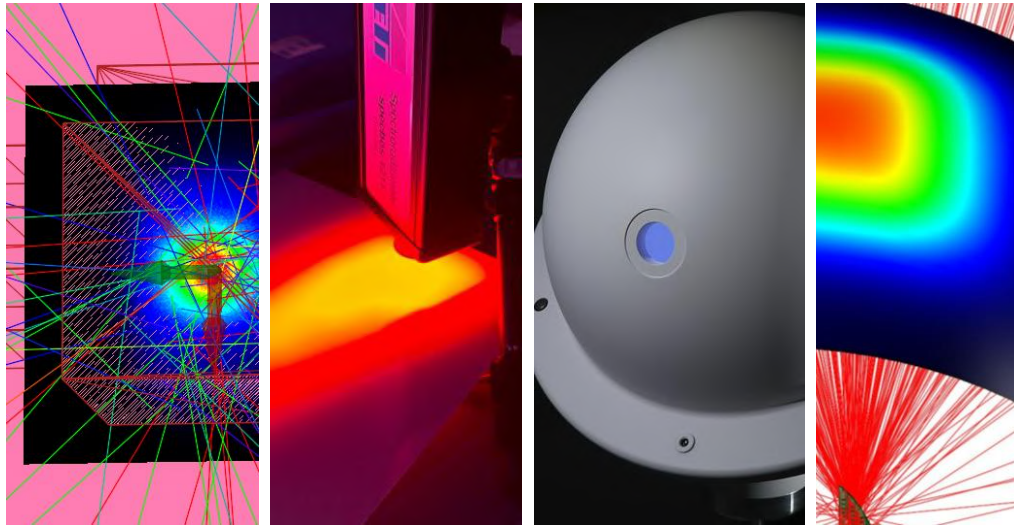
- High demands on light design and lighting functions
  (homogeneity, brightness, color)
- Strong requirements on cold appearance and day design
  (surface quality, structure)
- Day design defined on a black background
  (without considering the illuminated layer stack-up)
- Manufacturing technologies for decorative surfaces
  (each with a direct impact on light behavior)
- **Resulting challenge:**
  Aligning design intent and lighting performance from the very beginning

Opportunity

The relevant Material properties data already exists







Joint Development

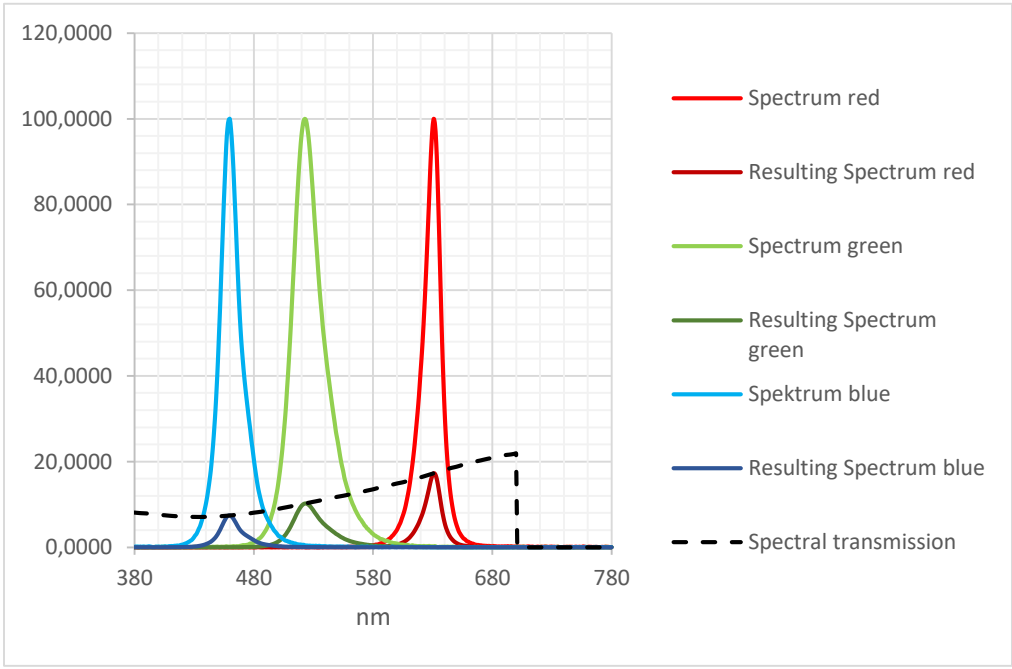
Two Complementary Strengths – Why it‘s so important

Lightbox with two chambers
Light color set to D65 white – 100% brightness

Left chamber: Foil added – D65 deviation
Right chamber: Light color set to D65 white – 100% brightness

Left chamber: Foil added – D65 deviation
Right chamber: brightness balanced

Left chamber: Foil added – D65 balanced
Right chamber: brightness balanced



Joint Development

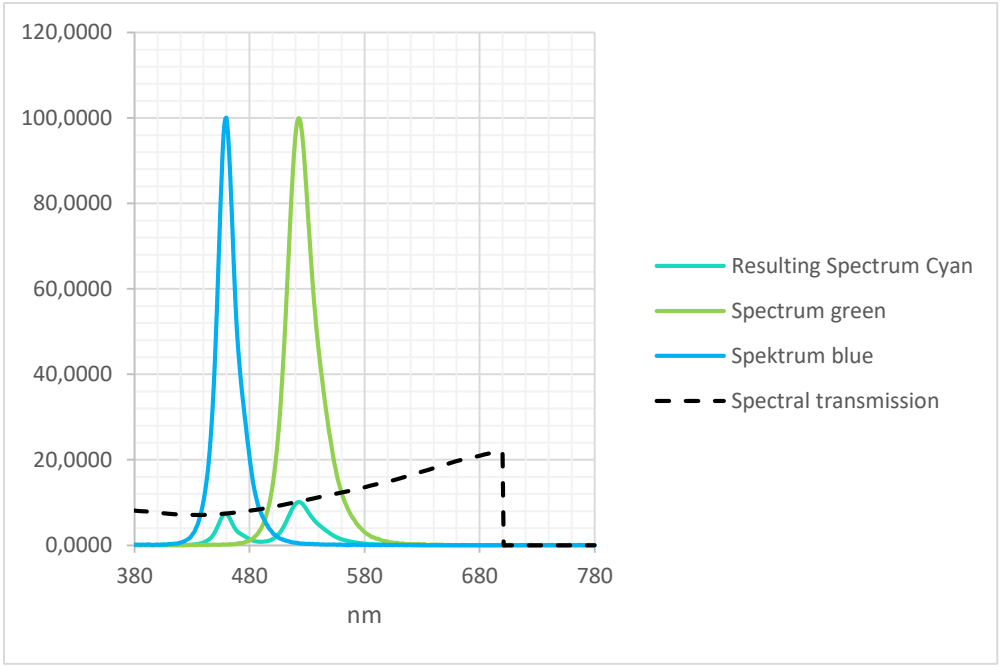
Two Complementary Strengths – Why it‘s so important

Lightbox with two chambers
Light color set to cyan – 100% brightness

Left chamber: Foil added – cyan deviation
Right chamber: Light color set to cyan – 100% brightness

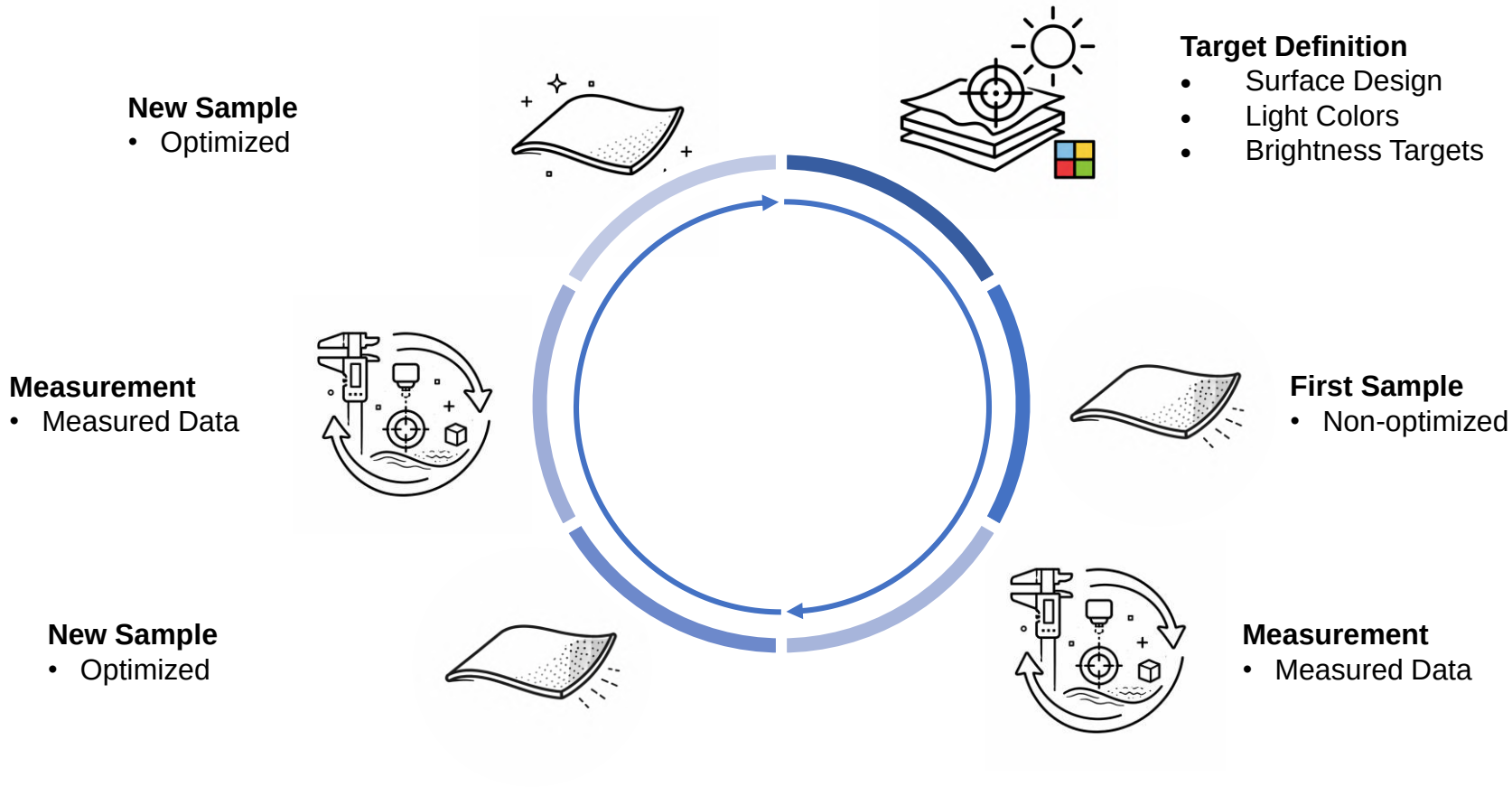
Left chamber: Foil added – cyan deviation
Right chamber: brightness balanced

Left chamber: Foil added – cyan balanced
Right chamber: brightness balanced



The Result

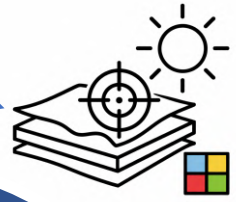
Two Complementary Strengths – One Solution



The Result

Two Complementary Strengths – One Solution

Measurement & Digital Feedback
- Measured Data
- Digital Re-validation

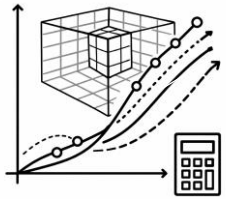


Target Definition
- Surface Design
- Light Colors
- Brightness Targets

Optimized First Sample
- Closer to Target
- Reduced Iterations

Digital Data Fusion
- Partner KURZ: Surface & Material Data
- Partner SP3: Optical & Lighting Data

Virtual Validation
- Validation vs. Target
- Implementation Proposals
- **No Physical Build Required**



Virtual Prediction
- Optical Properties
- Expected Appearance
- Performance vs. Target

Customer Value

Two Complementary Strengths – One Solution

Value 1 – Predictable Appearance and Light Behavior

Optical properties and visual appearance can be predicted before any physical sample is built

Value 2 – No Early Physical Light System Required

Valid predictions without building up a complete lighting or electronic system

Value 3 – System-Level Support

As a foil system developer together with our Partner SP3 we directly support LED and light development, e.g. by providing control values for LED compensation

Outlook

- System Available ✓
- Approach Verified ✓
- Application Ready ✓
- Further digitalization


SP3 x KURZ
Happy to connect and chat at our booth: S13 and S22