



OEM, Tier 1 and Tier 2 – First to market technology collaboration

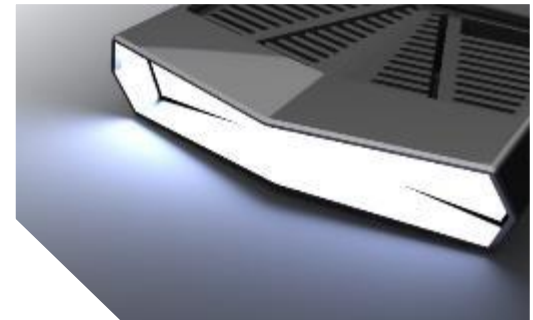
Simon Baker (BSc) / Head of Advanced Development - Wipac Technology
Paul Howse / Chief Designer – Lanzante
Dr. Yann Tissot / CEO Founder – LESS SA

OEM, Tier 1 and Tier 2 – First to market technology collaboration

Agenda

- 01 / Hypercar requirements for lighting design
 - 02 / OEM, Tier 1 and Tier 2 collaboration to minimise timing
 - 03 / Weight reduction applied to Rear Lamp design
 - 04 / Luxibright technology application
 - 05 / Conclusions
-

01 / Hypercar requirements for lighting design



01 / Hypercar requirements for Lighting Design

01 / Hypercar requirements for lighting design

Lanzante 95-59

- The Lanzante 95-59 is the latest design by renowned and respected automotive designer, Paul Howse
- As a former designer at McLaren Automotive, who penned the exterior of the McLaren P1, P1 Spider, 720s and Artura he was the natural choice to help shape the next exciting chapter for Lanzante



01 / Hypercar requirements for lighting design

Lanzante 95-59

- A genuine three-seater, with the driver positioned at the center of the action, 95-59 is the distillation of everything learnt and experienced by Lanzante over three decades since winning Le Mans in 1995 with #59 F1 GTR
- 95-59 is engineered to deliver the most immersive and engaging experience for the driver and two passengers, whilst capable of carrying luggage and extended cruising range, ensuring its useability and versatility as a road car



- All the lines and surfaces move together and culminate in a 'fighter jet' exhaust - Nothing is static or parallel
- 4.0 litre twin turbo V8, 850 bhp, 880Nm
- 1250kg, 700 bhp per ton
- Carbon fibre monocoque and bodywork
- Floating active aero rear wing

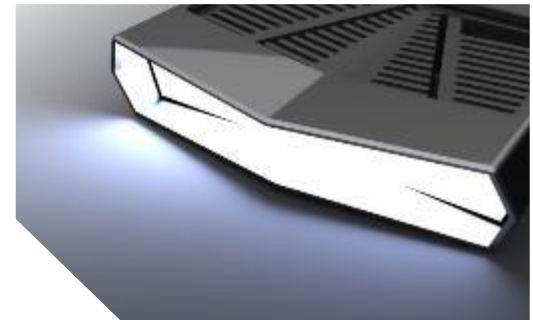
01 / Hypercar requirements for lighting design

Lanzante 95-59 – Rear Lamp

- 'Floating' Rear Lamp enables the maximum amount of hot air to be expelled from the rear of the car
- The ultra slim package of 'Luxibright' enables a super fine homogeneous Stop / Tail / DI lamp that was previously not possible in production
- It allows for aerodynamic surface integration and contributes to the strict weight targets of this vehicle

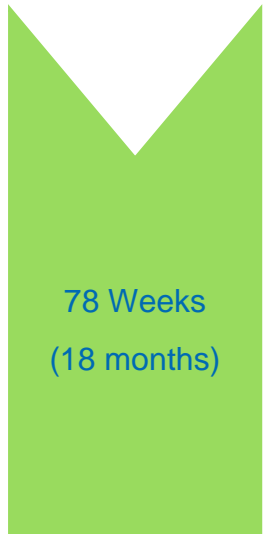


02 / Collaboration to minimise timing

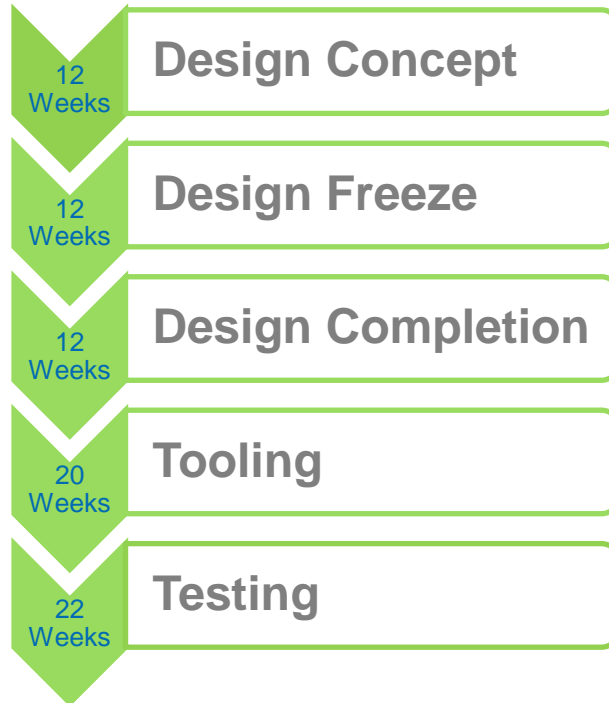


02 / Collaboration to minimise timing

Lanzante 95-59 – Rear Lamp



78 Weeks
(18 months)



12 Weeks
Design Concept

12 Weeks
Design Freeze

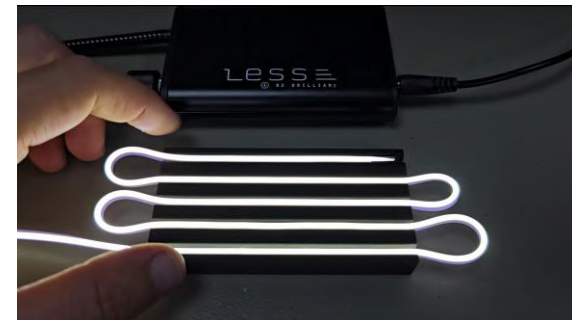
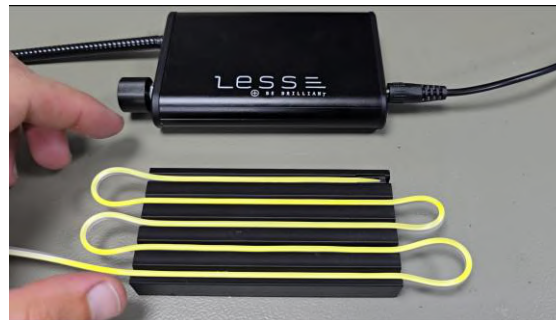
12 Weeks
Design Completion

20 Weeks
Tooling

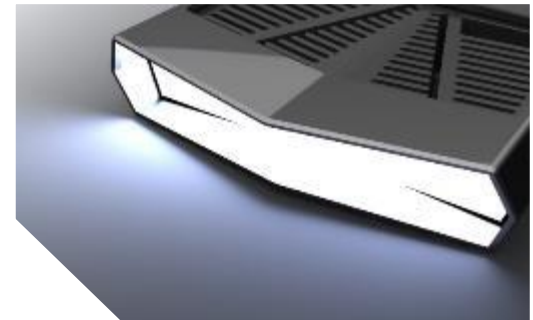
22 Weeks
Testing

- LESS SA early engagement with LANZANTE and WIPAC to support customer surface development
- WIPAC and LESS SA collaboration with prototyping to prove out design execution details for manufacturing
- LANZANTE, WIPAC and LESS SA collaboration through prototyping to prove out final design execution details
- Continued WIPAC and LESS SA collaboration with early off tool components
- Parallel LESS SA and WIPAC testing to support customer design verification plan

- 3D Printing is a key enabler for accelerated design development



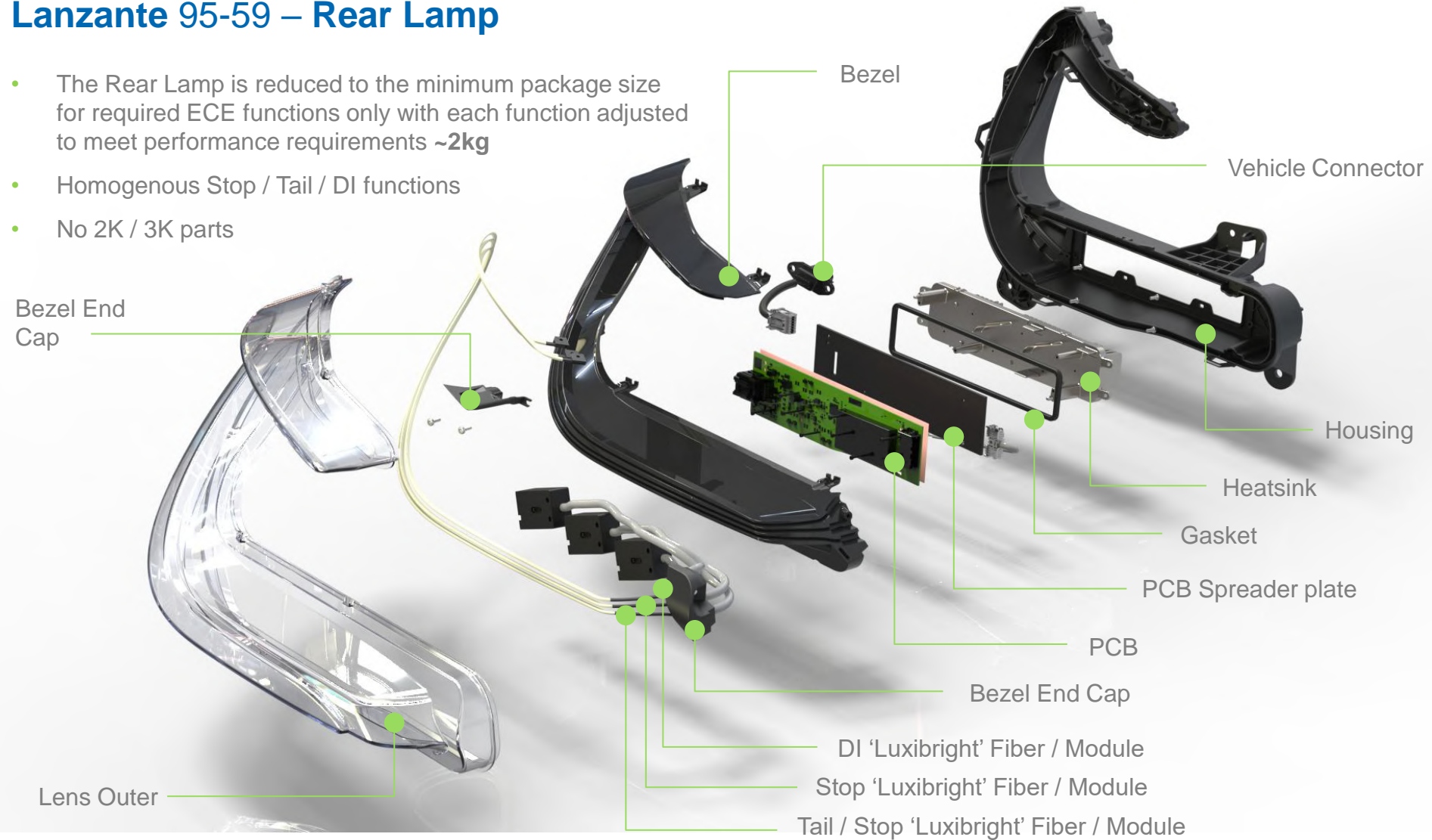
03 / Weight reduction applied to Rear Lamp design



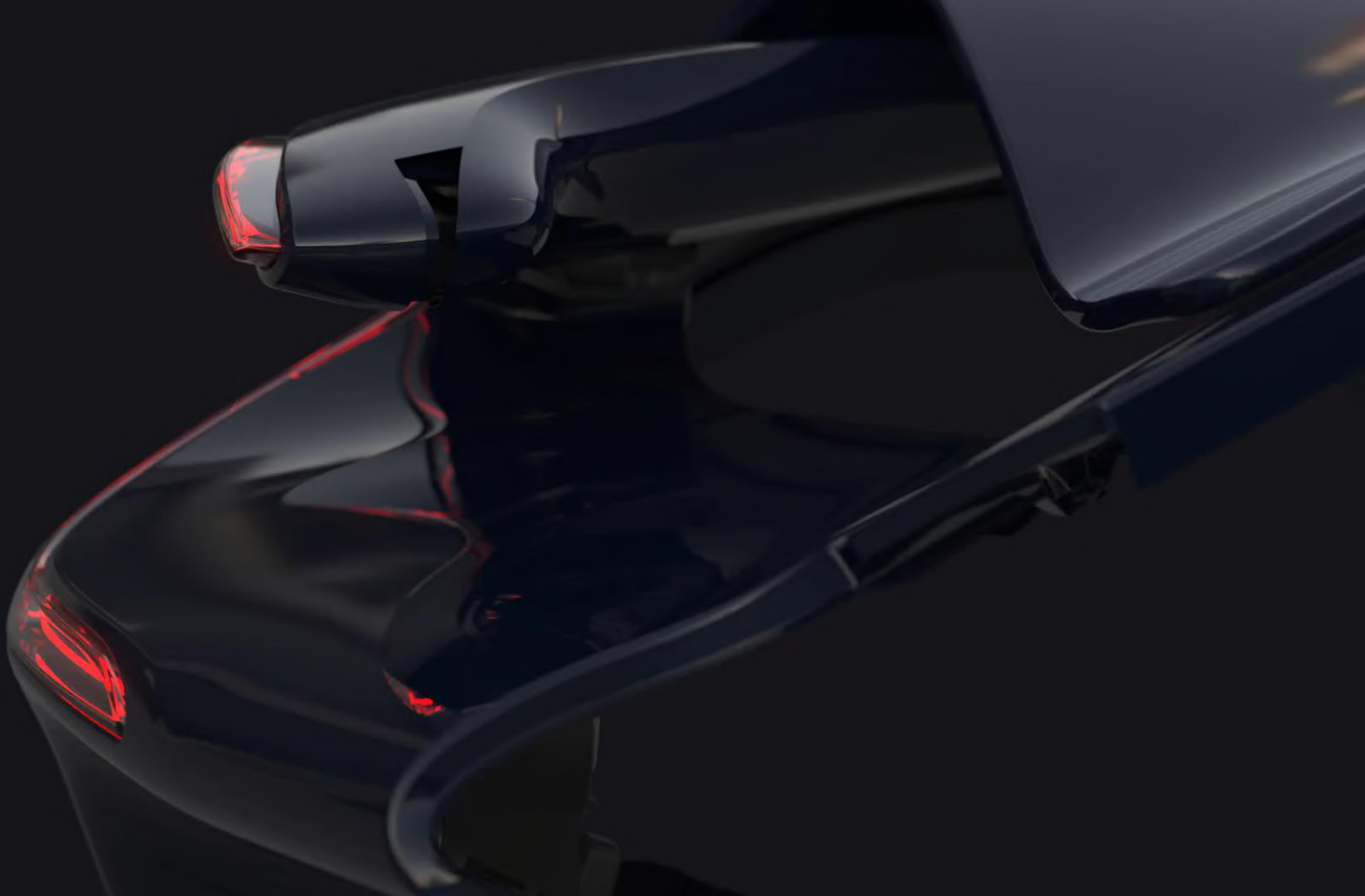
03 / Weight reduction applied to Rear Lamp design

Lanzante 95-59 – Rear Lamp

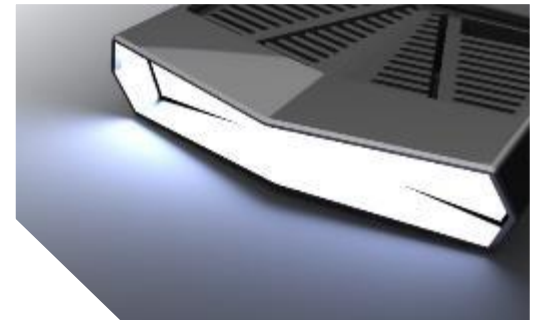
- The Rear Lamp is reduced to the minimum package size for required ECE functions only with each function adjusted to meet performance requirements **~2kg**
- Homogenous Stop / Tail / DI functions
- No 2K / 3K parts



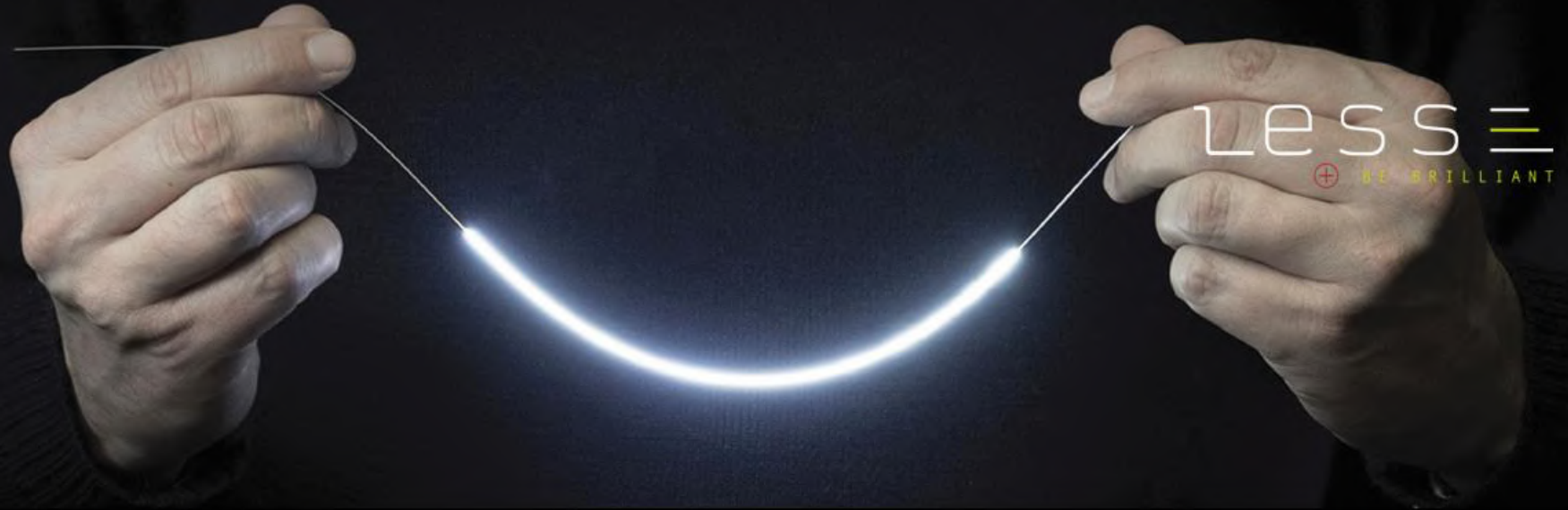
03 / Lightweighting applied to Rear Lamp design



04 / Luxibright technology application



04 / Luxibright technology application



L.E.S.S. SA
BE BRILLIANT

Dr. Yann Tissot – CEO & Founder of L.E.S.S. SA



1 NANOACTIVE
FIBER REPLACES
100 LEDS

Ultra-bright
Ultra-uniform
Ultra-compact

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Our LuxiBright™ TECHNOLOGY

LOW ETENDUE, HIGH CANDELA LIGHT SOURCE

A TECHNOLOGY PLATFORM TAILORED TO YOUR DEMANDS

Custom angle of lighting

- Typ. 15-80° FWHM

Custom location and length of lighting

- Segments from 20cm to 2.3m

Custom thickness of lighting

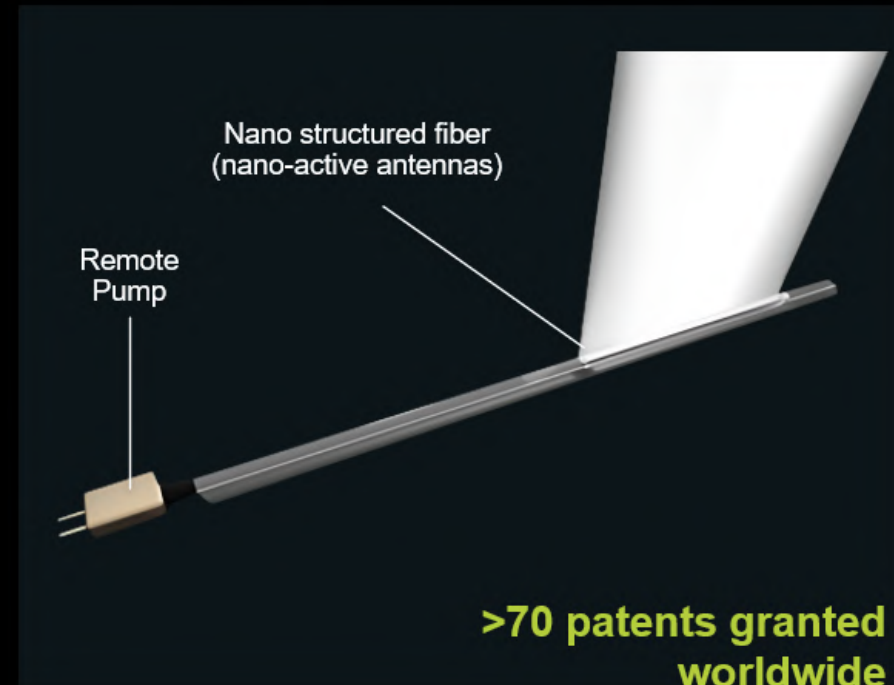
- Typ. 1.5 to 1.9mm

Custom intensity and color

- all ECE and SAE colors
- up to 1000 cd on a single source

Safe light

- Integrated safety
- System laser class 1



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04 / Luxibright technology application

LUXIBRIGHT™ : PERFORMANCE AND INNOVATION FOR AUTOMOTIVE LIGHTING



DESIGN BRIGHTER

One of our single light source is able to deliver from 10 to 1000 cd (and more).



DESIGN LIGHTER

Fully integrated lighting system designed as a plug-and-play concept without the need of additional optics or reflectors.



DISTINCTIVE DESIGN

Versatile light where you need it and how you need it while keeping high performance and fulfilling automotive regulation.

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04 / Luxibright technology application

LUXIBRIGHT **BEYOND** LIMITS: FROM CONSTRAINT TO **ICONIC DESIGN**

LESSE
⊕ BE BRILLIANT

FULLY INTEGRATED SOLUTION

No additional optics or reflector needed, integrated mechanical interface

FAST ADAPTABILITY

Our lighting technology is designed to adapt easily to your system architecture without heavy CAPEX.

FLEXIBILITY OF DESIGN

Various design can be achieved with seamless integration.

PUSHING BEYOND EXISTING LIMITS

We go beyond current technological constraints to unlock new possibilities.

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04 / Luxibright technology application

L.E.S.S. - A **TRUSTED AND FLEXIBLE** PARTNER FOR YOUR SUCCESS

LESS E
+ BE BRILLIANT

DEVELOPMENT PARTNERSHIP

From concept to integration, we support you at every step to ensure a smooth, efficient, and successful implementation.

FAST QUALIFICATIONS

Infrastructures in place for new design to be tested and qualified

CONSTANT SUPPORT

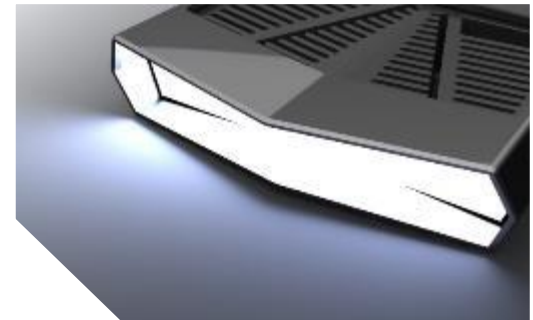
Beyond technology, we provide continuous technical support and expertise.

CUSTOMER SATISFACTION

We strive for the wow effect with every on-time delivery

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05 / Conclusions



05 / Conclusions

Design:

- Luxibright allows for a 'Floating' Rear Lamp design supporting aerodynamic surface integration
- Luxibright provides precision illumination



Lightweight:

- Minimal component count and function surface area
- Exposing the lighting technology and materials

Sustainability / Time to Market:

- Tooling & component count reduces CO2 for lighting development
- Reduced tooling & optical development supports faster product launch
- 'First to Market' Luxibright Rear Lamp with Stop / Tail / DI functions
- Development period of 18 months

Collaboration:

- Early engagement between the OEM, Tier 1 and Tier 2 is crucial to success



Thank you

References

*Images Lanzante source : [95-59 — LANZANTE](#)
Images LESS SA source : [LuxiBright® technology - LESS](#)*

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