Harmony Room

Client Hyundai Motor Group **Location** Republic of Korea

Brief

The Hyundai R&D Centre in Namyang, Gyeonggi-do Province is at the epicentre of product development and technology testing for Hyundai Motor Group in Korea. Leading the global market with unique automotive innovation, Hyundai continues to develop a variety of automatic transmission products and lead industry standards for the automotive sector.

Due to the varied size of testing samples, the colour team were heavily reliant on natural light to carry out the colour- matching process. For day to day use, outdoor natural light was highly disruptive due to unreliable weather and temperature conditions.

GDS were assigned to provide a scalable indoor colour-matching LED solution, to guarantee a high-performance and perfect quality light, any time of day.

Approach

To ensure the Hyundai colour team's requirements were met, GDS were involved at every stage of the design and consultation for the project. Utilising our in-house technical and manufacturing expertise, the GDS lighting design team worked with the client to calculate the optimum lux values for the testing environment and deliver continuous rounds of lighting design visualisations for review.

A challenge the project faced was to guarantee that the highest CRI standards for colour matching could be met, without losing any power from the light source as a result. The GDS engineering team developed brand new CoB (Chip on Board) technology that allows the DF System LED head to achieve an impressive 98 CRI whilst producing the client requested surface light levels of 75,000 Lux

To deliver seamless scalability, the DF System was designed using aircraft aluminium modular frames to contain the LED engines. Configurations of the frame were installed with minimum stress using M10 threaded bars, that could be easily fixed to the existing roof structure.

Benefitting from GDS's experience in the Entertainment Lighting sector, the DF System was designed with new driver technology that enables perfect dimming to absolute zero, allowing the user to mix colours smoothly for precision accuracy when testing. The constant current drive system was included to minimize power loses in the cabling and ensure absolute accuracy from each LED head giving consistent light.

Outcome

The DF System has set the benchmark for colour-matching in R&D testing environments worldwide. The scalable framework is the first of its kind for the industry, offering a new way of thinking and an ideal solution for controlled, large component colour-matching.

Following the DF System installation, the Harmony Room at the Hyundai R&D Centre is in constant use thanks to the unparalleled quality of perfect light it can deliver. Improving productivity and efficiency for the design and colour teams, many Hyundai venders travel to use the DF System to test their materials and get the perfect colour-matched results.

The development team at GDS created the Hyundai solution using our in-depth knowledge of full spectrum technology and digital systems within the DF System product range. By using a modular, programmable large scale solution we are proud to have met the customer's exacting standards.

Richard Cuthbert, Managing Director GDS