



Power Transmission for Outdoor Lighting Let There Be Bright Light



HVDC



Low EMI



Low Weight



Small Size,
Low Profile

The Customer's Challenge

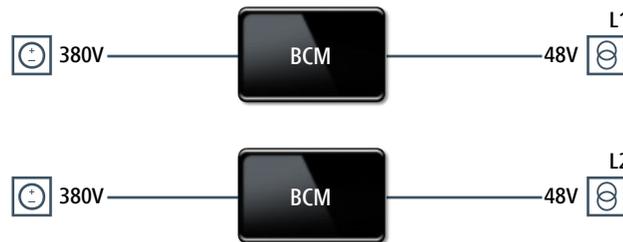
LEDs are replacing classic lighting and illumination systems not only for lower power applications but also in applications such as stadiums where bright light at high power levels is needed. A customer was designing a power transmission system that reduced the size and weight of the power cables to LED lights to significantly reduce installation costs. Meeting EMI requirements was important.



The Solution

The local FAE team advised the customer to consider a new architecture based on a high voltage DC bus voltage, using local bus converters at each load. A central, high power and high efficient front end generates the regulated 380V_{DC} Bus, which is then distributed to the individual LED spots. At the load itself a BCM Bus Converter Module steps the voltage down to the 48V needed by the LED drivers. The BCM also provides the necessary isolation for safety.

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The Results

By removing the need for multiple AC distributed power supplies, one for each load, and replacing it with one bulk front end the customer reduced the system complexity and improved efficiency. The use of HV DC power distribution enabled the use of smaller and lighter cables, as well as reducing the need for further regulation stages, so maximizing system efficiency.

The HV BCM (measuring just 63.34 x 22.80 x 7.26mm) provides the highest power density for the power delivered, occupying a fraction of the space needed for a complete AC-DC power supply, and the weight of one converter is just 41g. Using Sine Amplitude Conversion, the BCMs solve the EMI issues.

Product Family Key Specifications

BCM® High Voltage Bus Converter Module

Input Voltages	260 – 410V 330 – 365V 360 – 400V
Output Voltage	From 8.1 – 51.3V
Output Current	Full Chip: Up to 28A 6123 ChiP: Up to 125A
Efficiency	Up to 98%
Dimensions	Full ChiP: 32.50 x 22.00 x 6.73mm 6123 ChiP: 63.34 x 22.80 x 7.26mm