

# Data Considerations with IMS

## Sending Data and Power Together

Our approach to IMS control was to simplify the data and power connections to allow the individually controllable IMS Lamps to retrofit into existing socket systems. The control signal to each lamp is modulated and sent simultaneously with power along a conductor. This means that any 2-conductor connection to E26 lamp sockets will allow communication and power distribution to the IMS lamps.

To ensure safe and reliable data transfer for IMS, we have developed DMX controlled Universe Drives capable of driving up to 64 bulbs per output. We have also included several operating modes which help expand the limitations for cable length.

## Cable Length Settings

We have tested several examples of IMS runs to give an idea of the possibilities of cable length and maximum lamp counts. The limits we have published in the User Manual take into consideration the natural occurrence of voltage drop and control signal degradation. Projects using IMS are vastly different in design, so while we may not have data for the exact scenario, we provide an outline of scenarios that will inform the maximum lengths and recommended settings as a guideline for any project.

The IMS Universe Drives have 3 cable length settings to choose from which change the data refresh rate. The Short cable setting gives you best (fastest) data refresh rate, but the increased data amount reduces cable length you can use. Conversely, the Long cable setting uses lowest data rate and thus extends the possible cable length.

Short	40Hz refresh rate – shortest maximum cable length option
Medium	20Hz refresh rate – medium maximum cable length option
Long	10Hz refresh rate – longest maximum cable length option

## Transcoding

Transcoding is an additional setting we offer to increase the maximum cable run for an IMS installation. Transcoding essentially changes the dimming resolution of the bulbs from 8-bit dimming (256 steps) to 6.5-bit dimming (64 steps). This reduction of resolution allows you to extend the maximum cable run length and is ideal for quick color changes that do not necessarily require smooth crossfading operation.

For example, quick color “snap” chases for a marquee sign may not need to do smooth crossfading between colors and would benefit from the added cable length that transcoding allows. Whereas an array of lamps installed in a tight formation used for pixel or video mapping should have less overall total cable, and should operate without transcoding to smooth out the effect.

Additionally, transcoding can be enabled on top of each cable length settings to give you extra flexibility when needed for long runs.



Standard 8-bit dimming – more dimming steps



Transcoding activated – 6.5-bit dimming