

HPLS-35DD7500-2C

HPLS-35DD7500-4C



Two and Four Channel High Speed Drivers for Short Duration, Intense LED Flashes

Features

- Repeatable High Intensity Output driving LEDs with 7.5Amps of current for pulse width duration from <math><500\text{nS}</math> to 40 μs with DD7500 Driver boards.
- SmartTime Time Limiting Circuitry protects LED emitters by shutting down the output if pulse width or duty cycle is exceeded.
- 3% Duty Cycle
- Burst mode capability

Applications

- High-speed imaging
- Synchronous detection
- Machine vision
- Fluorometry
- Multiple Wavelength Illumination

Description

The HPLS-35 series drivers provide a compact high speed driver for controlling short flashes of 2 or 4 LEDs with independent input control.

For Mechanical Dimensions, see .info.pdf file
STEP Files Available
Contact Lightspeed Technologies
Specifications subject to change

Electrical Interfaces



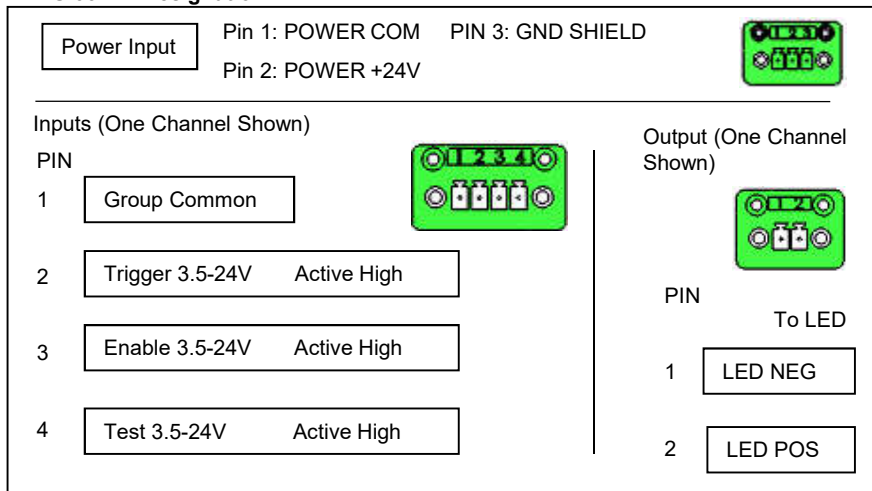
HPLS-35-DD7500-2C



HPLS-35-DD7500-4C

Mating Connectors:
 Input Phoenix 1827729
 Lightspeed PN: **LT1827729**
 Output Phoenix 1827703
 Lightspeed PN: **LT1827703**
 Power Phoenix 1827716
 Lightspeed PN: **LT1827716**

HPLS-35 Pin Designation:



Power requirements:

HPLS-35-DD7500-4C: +24V, 2A
 HPLS-35-DD7500-2C: +24V, 1A

Mounting Options:
 Din Rail Mount:
HPLS-35-DIN1
 Flat Surface Mount (2 Brackets, black):
HPLS-MB40 (40mm) or **HPLS-MB80**

Output Connector Cables:
C-TB2-0.5M Cable - 0.5 meter length. Phoenix pluggable terminal block 2 pin connector.
C-TB2-1M Cable - 1 meter length. Phoenix pluggable terminal block 2 pin connector.
C-TB2-1.5M Cable - 1.5 meter length. Phoenix pluggable terminal block 2 pin connector.
C-TB2-2M Cable - 2 meter length. Phoenix pluggable terminal block 2 pin connector.

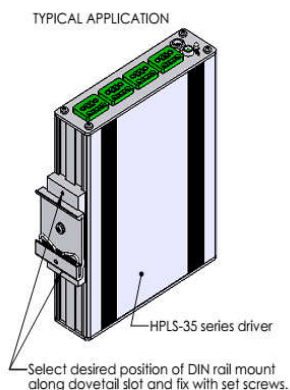
Impact of Lead Length on Pulse Width and Current to LED

Wire Length (m)	50% rise (nS)	50% fall (nS)	90% rise (nS)	90% fall (nS)	90% rise+fall (nS)	Shortest Rectangular pulse 50% flat (ns)	Shortest Rectangular pulse 75% flat (ns)	Current (A) LED
0.0254	40	25	140	40	180	360	720	6.5
0.5	70	40	260	60	320	640	1280	6
1	80	45	350	100	450	900	1800	5.7
1.5	110	50	500	130	630	1260	2520	5.2
2	130	55	650	150	800	1600	3200	5

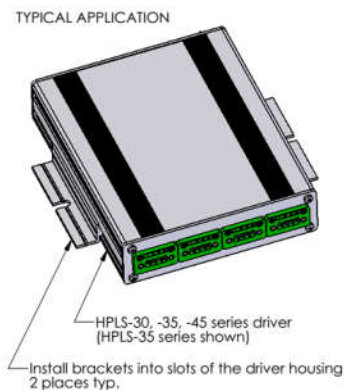
Mounting Configurations

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Specifications subject to change

Din Rail



Flat Surface Mounted



Illuminator Options – See Separate Data Sheet

- HPLS-26PX2 LED Socket with OH26 Optics Options
- RS1 LED Socket with OH36 Optics Options

HPLS-36DD7500 Driver Board

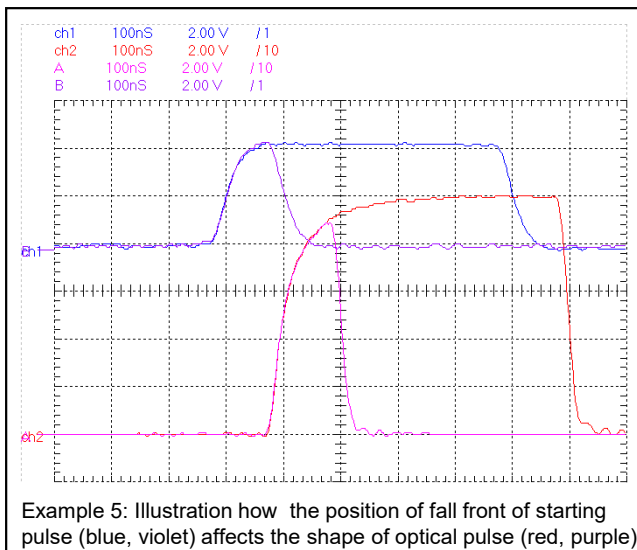
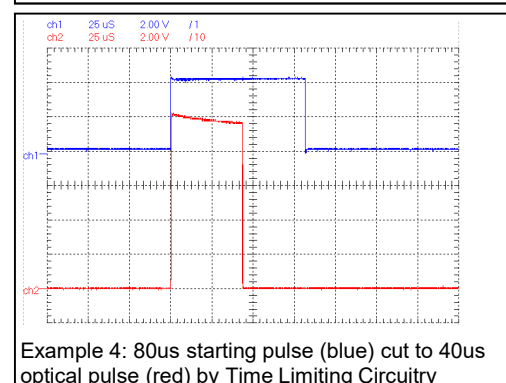
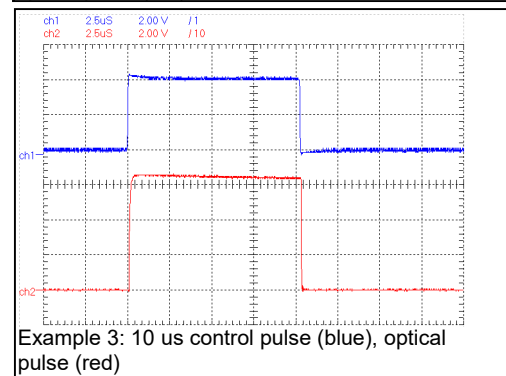
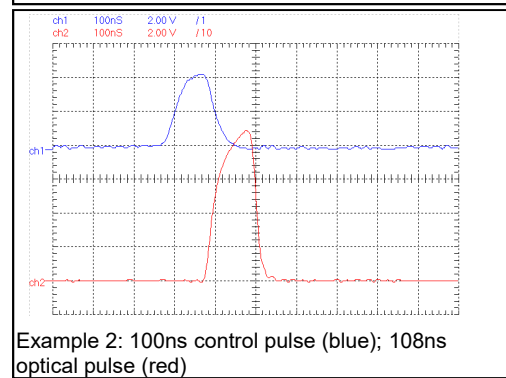
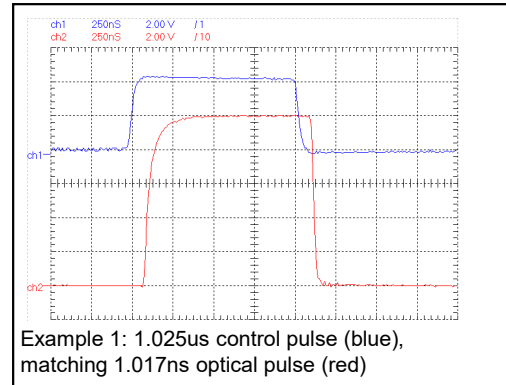
Waveforms and specifications

Digital mode specifications:

- Output current: 7.5A +/- 1A (LED head dependent)
- Rise Time: 45ns (to 1/2 level); 117ns (to 90%)
- Rise front propagation delay: 100ns +/-5
- Fall Time: 30ns (to 1/2 level); 45ns (to 90%)
- Fall front propagation delay: 100ns +/-5
- Pulse front/fall jitter: 10ns MAX, <5ns typ
- Nominal Signal Level: 3.3-5V; TTL/CMOS
- Logical "0" (light OFF): <0.8V
- Logical "1" (light ON): >2.4V
- Smart Time Limiting Circuitry for LED Protection Limits the Cumulative Energy Delivered to LED
- Single Control Pulse length range: 50ns-40us
- Matching optical pulse half-width (50ns-40us)
- Maximum Duty Cycle of Continuous Waveform: 3.3%
- Average Ratio, Active Time/Relaxation Time: 1:50
- Any Repetition Rate

Digital mode, protocol examples:

- Example 1: 1us pulse produces optical pulse with matching within +/-15ns accuracy. 1 us pulse is permitted every 30us
- Example 2: 100 ns starting pulse produces optical pulse with matching to +/-15ns accuracy
- Example 3: 10us starting pulse produces virtually "rectangular" optical pulse
- Example 4: Too long starting pulse will be cut by Time Limiting Circuitry to 40 us.
- Example 5: 100ns starting pulse will produce 100 ns optical pulse with peak which is 88% of steady level observed with 1us pulse. Further shortening the pulse will lower the peak more.



Preliminary - Specifications subject to change