

FD600CAM

Installation and Operation Manual

Flight Display Cockpit Camera



TECHNICAL SUPPORT
678-867-6717, or
www.FlightDisplay.com

Flight Display Systems
Enhancing the Flight Experience

FD600CAM

Flight Display Cockpit Camera

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Flight Display Systems

1765 Grassland Parkway

Alpharetta, GA 30004

678-867-6717 Phone

678-867-6742 Fax

sales@flightdisplay.com

www.flightdisplay.com

For the most current copy of all product manuals, please visit our website at

www.flightdisplay.com

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General Information

The FD600CAM is a Flight Display Cockpit Camera. This small color camera, when mounted in the cockpit, will provide passengers with an opportunity to observe taxi, take-off, and landing, adding a whole new dimension to the In-Flight Entertainment experience!

Front View



Specifications

Video System	NTSC or PAL
Camera Sensor	1/4" Color CCD
Picture Element	512 H x 492 V
Horizontal Resolution	330 Lines
Horizontal Sync Frequency	15.734 KHz
Vertical Frequency	60 Hz
Scanning System	525 Lines, 60 Field/sec 2:1 Interlace
Signal to Noise Ratio	>48 dB
Electronic Shutter	1/60 - 1/100,000 sec (NTSC) 1/50 - 1/100,000 sec (NTSC)
Video Output	1Vp-p, 75 Ohms
Dimensions, Camera	.925" (W) x .925" (H) x 3.12" (D)
Dimensions, Mount	1.65" (W) x 1.7" (H) x 1.7" (D)
Weight	2.3 oz
Power	12VDC @ 90 mA
Operating Temperature	-4°F to 140°F

Installation Instructions

All cabin entertainment equipment, such as the FD600CAM, should be installed on a non-essential bus and have a dedicated circuit breaker. It is a requirement that a switch be installed in the cockpit so that the pilot can de-energize the entertainment system should it become necessary.

Mounting from the cockpit headliner is suggested. Excessive sunlight will make the video image hard to see. Mounting inside the cockpit and out of direct sunlight will provide a "visor" to the camera lens.

Remember to set the camera pointing down at an approximately 60° angle, as this will optimize the picture for takeoff and landings. When looking at the image while on the ground have the horizon 2/3 of the way up the video screen in the cabin.

Power

This is a **12VDC** camera that requires very little 90 mA power to operate.

Video Wiring Suggestions

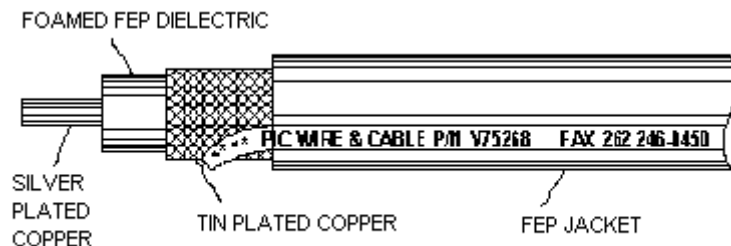
All shields should be grounded to the connector at the source, and floating at the display.

Avoid routing video wiring parallel to:

- AC wiring
- Strobe wiring
- DC motor supply cables
- Inverter cabling
- Or any other potential noise source.

S-Video/Composite and Audio Wiring

Recommended cable for s-video/composite and audio purposes is PIC 75 Ohm Coax, P/N V75268. This is a lightweight, flexible, and low signal loss cable which meets FAA flammability requirements of FAR 23.1359(d), FAR 25.853(a) and FAR 25.869(a)(4).



Similar aviation coaxial cable can be used from other vendors, as well.

Some aircraft are prone to AC noise - we recommend adding to the composite source a 75Ohm video isolation transformer such as Deerfield Laboratory, Inc. Part No. 162-1 (www.deerfieldlab.com, (650) 632-4090). In most cases this should be added to the video output of the source.

Power and Ground Wiring

22 AWG wire is recommended for Power and Ground applications.

Pinout for DB-9

Part Numbers for DB-9 connectors, manufactured by Tyco or Amp.

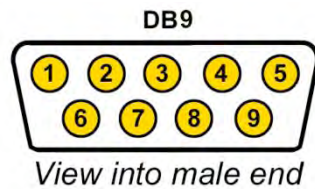
D-sub, 9 contact receptacle (female)

P/N 205203-1

DB9F pins

P/N M39029/63-368

Wiring Diagram



Pin Number	Description
1	12VDC Power
2	12VDC Ground
3	N/C
4	Composite Video - Shield
5	Composite Video - Signal
6	N/C
7	N/C
8	N/C
9	N/C

Troubleshooting

Video Noise

Check for an incorrect ground in the installation wiring. See specific examples of video noise below, or visit <http://flightdisplay.com/Grounding.pdf>

Snow or Sweeping Lines

Lines that slowly sweep up and down are a result of AC noise. This AC noise can be generated by a power cart on the aircraft. Take the power cart off of the aircraft. Be careful of inverter wiring, which can also cause noise. Stand off the wires, if necessary.

If snow or sweeping lines persist, it is possible that the ground is at an incorrect point in the aircraft. Try moving the ground to another location.

No power to Monitor, or No video Input

- Verify correct wiring. Check the base receptacle connectors for possibly damaged pins.
- Check that the video source is:
 1. Powered on,
 2. In Play mode, and
 3. Displaying video.

Color Distortion

- Adjust brightness and contrast settings using the buttons on the monitor.

Remote Control Inoperable

- Confirm that the infrared eye on the LCD screen is visible.
- Replace battery in remote control.

Technical Support

Should you have any questions concerning this product or other Flight Display Systems products, please contact our Product Support representatives at (678) 867-6717.

Flight Display Systems

1765 Grassland Parkway

Alpharetta, GA 30004

Phone: 678-867-6717

Fax: 678-867-6742

Email: sales@flightdisplay.com

For further product information, technical data and sample wiring diagrams, please click on the **Dealers** section of our web site at www.flightdisplay.com

Instructions for Continued Airworthiness

The FD600CAM is designed not to require regular general maintenance.

Warranty Information

Flight Display Systems warrants the FD600CAM against material or manufacturing defects for a two-year period (effective 1/1/2009 on all equipment shipped with 2009 pricing). Warranty begins on date of installation.

If product support is required, please call our Technical Support team at 678-867-6717 to obtain assistance. If the return of the unit to the factory is required, an RMA number will be issued at that time. Flight Display Systems will, upon receipt of the failed hardware, remanufacture or replace the unit at our discretion.

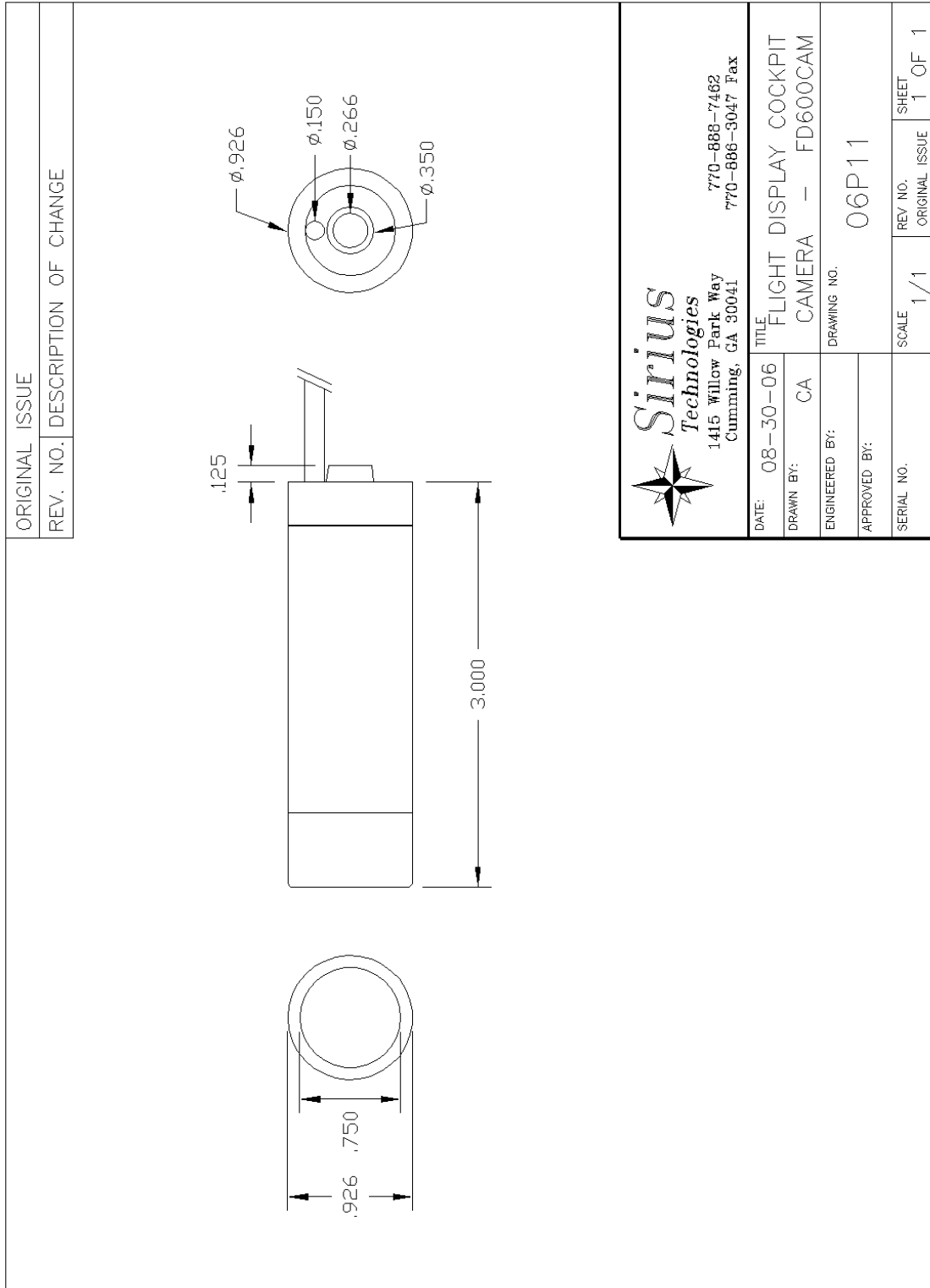
Flight Display Systems will pay Ground Shipping charges for warranted items. Charges for express shipment will be the responsibility of the sender.


This warranty is not transferable. Any implied warranties expire at the expiration date of this warranty. We shall not be liable for incidental or consequential damages.

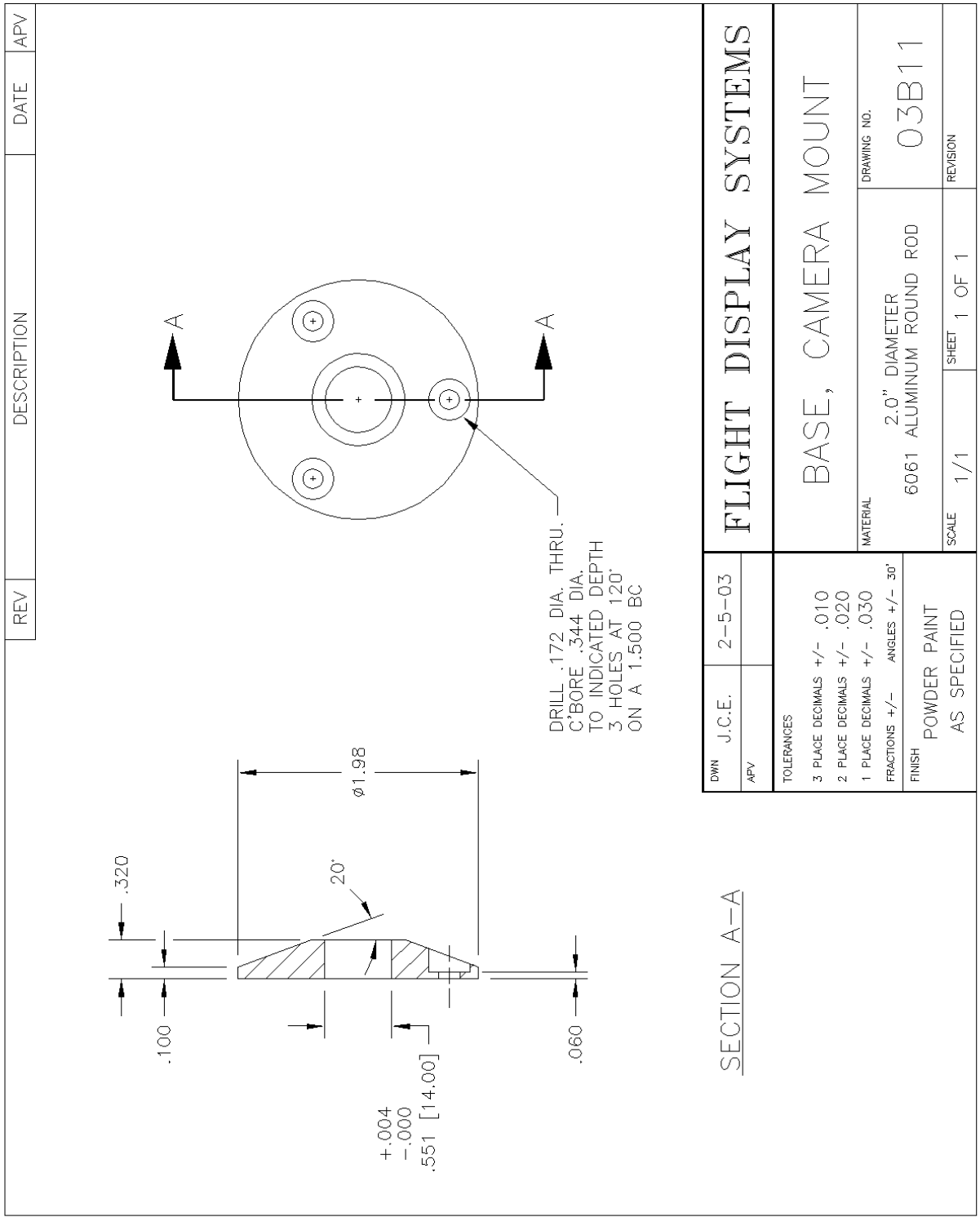
This warranty does not cover a defect or failure that has resulted from improper or unreasonable installation, use or maintenance, as determined by Flight Display Systems. This warranty is void if there is any attempt to disassemble or open this product without factory authorization.

Any labor charges associated with the removal of product or related troubleshooting by a firm other than Flight Display Systems or its designee will not be covered.

Assembly Drawings



 Sirius Technologies 1415 Willow Park Way Cumming, GA 30041 770-888-7462 770-888-3047 Fax	
DATE:	08-30-06
DRAWN BY:	CA
ENGINEERED BY:	
APPROVED BY:	
TITLE	FLIGHT DISPLAY COCKPIT
DRAWING NO.	CAMERA - FD600CAM
	06P11
SERIAL NO.	
SCALE	1/1
REV. NO.	ORIGINAL ISSUE
SHEET	1 OF 1



DWN	J.C.E.	2-5-03	FLIGHT DISPLAY SYSTEMS	
APV			BASE, CAMERA MOUNT	
TOLERANCES			MATERIAL	DRAWING NO.
3 PLACE DECIMALS +/- .010			2.0" DIAMETER	03B11
2 PLACE DECIMALS +/- .020			6061 ALUMINUM ROUND ROD	
1 PLACE DECIMALS +/- .030				
FRACTIONS +/- ANGLES +/- 30°				
FINISH			SCALE	REVISION
POWDER PAINT			1/1	1 OF 1
AS SPECIFIED				

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Log of Revisions

Rev	Date	Page	Description
A	01/25/2007	---	---
B	07/05/2007	9	Added assembly drawing of base.
C	09/8/08	1	Added operating temperature
D	04/14/2009	1,7	Updated specifications, warranty info