



Digital License Plate Cooling System

For use on Digital License Plate Printing Systems

Product Bulletin

May 2014

Replaces Digital License Plate Cooling System PB dated July 2012

Description

The 3M™ Digital License Plate (DLP) Cooling System is an optional component of the DLP product family that can be added to the 3M DLP printing system. Its purpose is to maintain the thermal transfer print heads of the DLP printer at a consistent temperature. This allows printing of high-graphic content plates for a full sheeting roll without stopping due to print head thermal shutdown. It also helps maintain print quality throughout the roll and between rolls.

The chiller system includes the following subsystems:

- A. Chiller unit
This supplies the liquid coolant at a specified temperature with adequate pressure to maintain the specified flow rate.
- B. Cooling plates
These attach to the bottom of the print heads and transfer excess heat from the print heads to the coolant.
- C. Tubing system
This distributes the coolant in a loop between the chiller unit and the cooling plates.
- D. Thermally conductive pads
Pads attach to the bottom of the print head and enhance heat transfer from the print heads to the cooling plates.

A. Chiller unit

The chiller consists of a refrigeration system, a coolant loop, a heating system, controls and plumbing.

There are two different sized chiller units available. The chiller units contain both a heater element for pre-heating the coolant to a preset temperature at startup and a condenser for reducing the coolant temperature as the print heads produce heat. The smaller unit has the capacity to maintain print head temperatures on one DLP printing system. The larger unit has the capacity to maintain temperatures on two systems.

Chiller Technical Data

	Large Unit	Small Unit
Power	230v, 30a, 1 ph, 60 hz	
Cooling Capacity	5900 watts	2400 watts
Heating Capacity	2000 watts	
Dimensions	21.4" W 27.8" D 31.9" H	14.8" W 24.5" D 26.5" H
Weight	270 lbs	166 lbs
Coolant Reservoir Cap	6 gal	2 gal
Pump Capacity	4.3 gpm	
Operating Environment	50°F to 95° F	
Refrigerant	R134a	

The cooling plates are certified by UL for use in the DLP Printing System.

Air flow is critical to optimize the performance of the chiller. The front and one side or back must be kept clear and unobstructed. The remaining two sides must have a minimum clearance of 18 inches and the top clearance must be at least 6 inches. The chiller units are not to be stored or operated outside.

B. Cooling Plates

The cooling plates attach to the bottom of each of the four print heads in the DLP printer, and include required lengths of extensional tubing. Coolant flows through the plates to remove heat and maintain constant print head temperature.

C. Tubing System

The tubing system consists of a set of braided hoses connecting the cooling plates to a manifold mounted on the Roll Handling Unit and two rubber hoses connecting the manifold to the chiller.

D. Thermal Pads

Thermal pads are made from thin, conductive film with pressure sensitive adhesive and removable liner die-cut to match the shape of the print head. The pad is applied by the user to the bottom of a new print head before installation into the printer with a cooling system.

Health and Safety Information

Read all health hazard, precautionary, and first aid statements found in the User Manual, and/or the Material Safety Data Sheet, and/or product label of chemicals prior to handling or use.

Warranty

The DLP Cooling System is designed to perform effectively for the life of the DLP Printing System with proper maintenance. A 90-day warranty is provided on parts and labor. An extended warranty is available through purchase of an optional extended service contract. Contact your 3M Traffic Safety Systems Account Manager for details.

Limitation and Liability

3M assumes no liability for any incidental or consequential damages, such as profits, business or revenues in any way related to the product regardless of the legal theory on which the claim is based. THIS WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND ANY IMPLIED WARRANTY ARISING OUT OF A COURSE OF DEALING OR OF PERFORMANCE, CUSTOM OR USAGE OF TRADE.

Literature Reference

PB 9250E/ 9250T	3M DLP Reflective License Plate Sheeting With Ensure™ Image For use on Multi-Year License Plates
PB 9097	3M Digital License Plate Clear Protective Film 9097 For use on Multi-Year License Plates
PB 1300	3M Digital License Plate Thermal Transfer Ribbons Series TTR 1300 For use on Multi-Year License Plates

FOR INFORMATION OR ASSISTANCE

CALL:

1-877-777-3571

IN CANADA CALL:

1-800-265-1840

Internet:

www.3M.com/mvss

3M assumes no responsibility for any injury, loss or damage arising out of the use of a product that is not of our manufacture. Where reference is made in literature to a commercially available product, made by another manufacturer, it shall be the user's responsibility to ascertain the precautionary measures for its use outlined by the manufacturer.

Important Notice

All statements, technical information and recommendations contained herein are based on tests we believe to be reliable, but the accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties, or conditions express or implied. Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct, special or consequential, arising out of the use of or the inability to use the product. Before using, user shall determine the suitability of the product for his/her intended use, and user assumes all risk and liability whatsoever in connection therewith. Statements or recommendations not contained herein shall have no force or effect unless in an agreement signed by officers of seller and manufacturer.

3M is a trademark of 3M. Used under license in Canada.



Traffic Safety and Security Division

3M Center, Building 225-04-N-14
P.O. Box 33225
St. Paul, MN 55144-1000
www.3M.com/mvss

3M Canada Company

P.O. Box 5757
London, Ontario N6A 4T1
1-800-3MHELPS

3M México, S.A. de C.V.

Av. Santa Fe No. 55
Col. Santa Fe, Del. Alvaro Obregón
México, D.F. 01210

Please recycle.
© 3M 2014. All rights reserved.