SpeedDome® Optima LT Programmable Dome Camera

Quick Reference Guide

RASEL Series

Figure 1: Hard Ceiling Mount
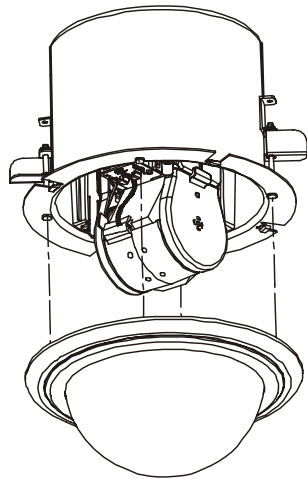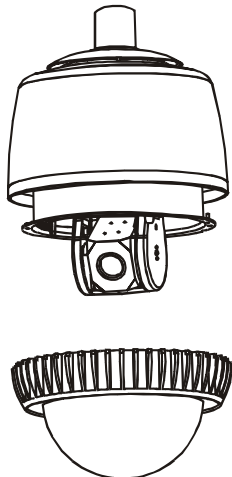

Figure 2: Pendant Mount

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About this Guide

This Quick Reference Guide explains the functions supported by the SpeedDome Optima LT programmable dome camera. It is intended to supplement information included in the operator's manual for your video controller or matrix switching system.

If you need assistance...

Contact your Sales Representative.

SpeedDome Optima LT Features

The SpeedDome Optima LT programmable dome camera provides the following features:

- 22X optical zoom / 11X digital zoom (242X maximum total zoom)

- 470 lines horizontal resolution

- Zoom Adjusted Programming (ZAP)

- Auto Focus / Auto Iris

- Auto White Balance

- Automatic Gain Control (AGC)

- Line-lock

- Up to 96 presets (system dependent)

- Three patterns

- Programmable home position

- Apple Peel

- Dome Flip (rotate 180°)

- Power-on functional tests

- LED diagnostics

- Hard ceiling or pendant mount installation

- DirectSet menu commands for specific dome functions

In addition, the dome may be used with the Manchester, RS-422 simplex or SensorNet protocols.

⚠ **CAUTION:** The pendant mount option is for indoor use only. Do not install the SpeedDome Optima LT dome outdoors.

Although SpeedDome Optima LT does not provide on-screen programming via the dome firmware, the connected controller may be used to configure many settings. These settings include:

- Programming presets and patterns

- Vertical phase adjustment (V-phase)

The following table provides additional information about the supported controller functions with the protocol used. The actual features supported may differ for your controller.

Table 1: Protocols and supported features

Feature	SensorNet	RS-422 Simplex	Manchester
Maximum Presets	96 (a)	96 (a)	64
Maximum Patterns	3	3	3
Return to Auto Focus/ Auto Iris (b)	Yes	Yes	Yes
Dome Reset	Yes	Yes	Yes
V-Phase adjustment	Yes	Yes	Yes
Auxiliary output control	No	No	No

(a) The actual number of available presets may differ based on the controller used.

(b) Pressing the Iris Open and Iris Close buttons simultaneously returns to auto focus and auto iris mode.

For specific information about the features supported, see the operator's manual for your controller.

Controlling the Zoom Setting

Zoom stop settings define how the zoom function is partitioned. Depending on the current zoom level, the camera will either stop at the first zoom stop setting or continue to the maximum zoom setting. For SpeedDome Optima LT, the first zoom stop setting is 22X (maximum optical zoom). The maximum zoom is 242X (maximum digital zoom).

To switch between optical and digital zoom levels, press the **Zoom In** (Zoom Tele) button until the first zoom stop is reached. Release the button for at least one second and press **Zoom In** again to continue into the digital zoom range. Zooming stops when the maximum zoom is reached.

Refer to your controller instructions for information about the location of the zoom control buttons.

Assigning the Dome's Home Position

The *home position* is a preset or pattern that automatically runs after 10 minutes of dome inactivity. Use this setting if you want a specific area to be under surveillance after an operator stops moving the dome.

For SpeedDome Optima LT, the home position is established by programming Pattern 3 with **Focus Near** or **Focus Far** as the first command. This indicates to the dome that pattern 3 should be used as the home position. Any commands that follow will be programmed as Pattern 3.

For more information about programming patterns, refer to your controller operator's manual.

Programming Notes

- To ensure that the home position displays the starting position you want, adjust the pan, tilt, and zoom before starting programming.

- If Pattern 3 has only a focus command and no other movement commands, Pattern 3 will be treated as a **preset**. The dome automatically points to the preset location after 10 minutes of inactivity.

- If Pattern 3 includes pan, tilt, and zoom commands following the focus command, Pattern 3 will be treated as a **pattern**. The dome automatically begins repeating the pattern after 10 minutes of inactivity.

Clearing Patterns

Clear patterns by re-programming the pattern to include two focus commands (Focus Near or Focus Far) as the only pattern commands. This removes the previously programmed pattern and restores the default Apple Peel pattern for the selected pattern.

For more information about programming patterns, refer to your controller operator's manual.

Note: If Pattern 3 is cleared, this removes the home position programming. The dome will not automatically return to the specified preset or pattern after 10 minutes of dome inactivity.

Pattern Programming Summary

Commands	Result
Start Pattern programming, followed by stop Pattern programming	Pattern behaves like a preset
Start Pattern 3 programming, followed by 1 focus command; stop Pattern programming.	Set Home Position as a preset
Start Pattern programming, followed by pan, tilt, and zoom commands; stop Pattern programming	Pattern behaves like a normal pattern
Start Pattern 3 programming, followed by 1 focus command and pan, tilt, and zoom commands; stop Pattern programming.	Set Home Position as a pattern
Start pattern programming, followed by 2 focus commands; stop Pattern programming.	Clears the pattern and restores the default Apple Peel Pattern.

DirectSet Menu Commands

The *DirectSet Menu* is a set of special commands on newer SpeedDome series domes. These commands provide quick access to commonly used dome features and functions with compatible controllers by entering the command number and pressing the DirectSet key on the controller.

SpeedDome Optima LT supports the following DirectSet commands:

Command	Action
2+DirectSet: Auto Iris/Auto Focus	Resumes Auto Focus/Auto Iris mode.
3+DirectSet: Flip	Rotates the SpeedDome 180° from its current pointing direction.
4+DirectSet: Peel Pattern	Runs the default Apple Peel Pattern.
255+DirectSet: Dome Reset *	Causes the dome to reinitialize.

* Command not supported by ADTT16E due to system limitations.

Supported Controllers and Matrix Switching Systems

SpeedDome Optima LT may be used with the following controllers and matrix switching systems. See notes below for specific limitations or restrictions.

Feature	ADTT16E Series	VM32 / AD32 Series	VM96 Series	AD2150 / AD2350 (1)	MegaPower LT	MegaPower 48 (1)	AD1650 (2)	AD168/ MegaPower 168 (1)	AD2050 (1)	MegaPower 1024 (1)
Supported Protocols	SensorNet	SensorNet	SensorNet RS-422 (2)	Manchester	SensorNet	Manchester SensorNet RS422 (8)	Manchester RS422 (9)	Manchester SensorNet RS422 (9)	Manchester RS422 (9)	Manchester RS422 (9)
Maximum Available Presets	96	96	Unlimited (3) **0** RS422 (2)	**64** Manchester **60** RS422 (9)	96	**64** Manchester **96** SensorNet **96** RS422 (8)	**64** Manchester **60** RS422 (9)	**64** Manchester **64** SensorNet **60** RS422 (9)	**64** Manchester **60** RS422 (9)	**64** Manchester **60** RS422 (9)
Maximum Available Patterns (4)	3	3	3 (2)	3	3	3	3	3	3	3
DirectSet menu (5)	Yes (6)	No	No	No	Yes (7)	Yes (7)	No	No	No	No

NOTES:

(1) For the list of compatible keyboards, see *Supported AD Keyboards* on page 5.

(2) VM96 performance is limited under 2-wire RS422 simplex. Patterns and presets are not supported in RS422 simplex mode.

(3) Preset information is stored at the host, not the dome. For SensorNet and RS422 duplex, unlimited presets are supported.

(4) Patterns are limited by time and the number of available dome commands. Total time for each pattern cannot exceed 6 minutes 50 seconds. The total number of dome commands used in the patterns cannot exceed 99.

(5) Although text overlay is not supported, the following DirectSet menu commands are supported: Return to Auto Iris/Focus, Flip, Peel and Dome Reset. See *DirectSet Menu Commands* on page 3 for more information.

(6) Requires firmware version 0701-2833-0103 (EEPROM) / 0701-2834-0201 (Flash) or newer.

(7) Requires a compatible keyboard with a DirectSet key (ADCC0200 or ADCC0300).

(8) 2-wire RS422 simplex mode to be supported with the MegaPower 48+ firmware upgrade.

(9) 2-wire RS422 simplex mode to be supported with AD2083-02C code translator firmware upgrade.

Supported AD Keyboards

For systems using AD keyboards, the following keys are used when **Set Preset** or **Call Preset** is referenced:

Keyboard Model	Call Function	Set (Define) Function [1]
AD1678C/M	**Shot**	**Set Shot** [2]
AD2078	**Call**	**Set**
AD2078A	**Call**	**Set**
AD2079	**Shot**	**Shot**
AD2088	**Shot**	**Shot**
ADTTE	**Shot**	**Shot**
ADTT	**Call**	**Set**

NOTES:

(1) Keyboard must be in programming mode to use the set functions. See the keyboard operation manual for information.

(2) Recessed pushbutton switch.

Supported Dome Commands

Some dome commands are supported through special keystroke combinations. This section summarizes those commands for specific controllers.

AD2083-02A Code Converter

See **Supported AD Keyboards** for button names used on specific keyboards.

Verified with AD168 (v. 3.01) and AD2083-02A (v. 11Y9).

Dome Function	Keyboard Command
Define Preset 1 - 16	**1 - 16 Set Shot**
Recall Preset 1 - 16	**1 - 16 Call Shot**
Define Pattern #1	**17 Set Shot**
Define Pattern #2	**18 Set Shot**
Define Pattern #3	**19 Set Shot**
End Pattern Definition	**33 Set Shot**
Accept (save) New Pattern	**34 Set Shot**
Go to Pattern #1	**17 Call Shot**

Dome Function	Keyboard Command
Go to Pattern #2	**18 Call Shot**
Go to Pattern #3	**19 Call Shot**
Run Pattern #1	**21 Call Shot**
Run Pattern #2	**22 Call Shot**
Run Pattern #3	**23 Call Shot**
Review Temporary Pattern	**24 Call Shot**
Auto Repeat Pattern #1	**25 Call Shot**
Auto Repeat Pattern #2	**26 Call Shot**
Auto Repeat Pattern #3	**27 Call Shot**
Flip (rotate dome 180°)	**40 Call Shot**
Clear Pattern #1	**41 Set Shot**
Clear Pattern #2	**42 Set Shot**
Clear Pattern #3	**43 Set Shot**
Reset Dome	**66 Set Shot**
Enter V-Phase Adjust Mode	**67 Set Shot** followed by multiple **Iris Open** or **Iris Close**
Exit V-Phase Adjust Mode	**68 Set Shot**
Return to Auto-Iris/Auto Focus	**69 Call Shot**
Reset Iris	**69 Set Shot**

In addition, the following commands *are not* supported.

- Set Switch 1 Normal Closed (51 Set Shot)
- Set Switch 1 Normal Open (52 Set Shot)
- Set Switch 2 Normal Closed (53 Set Shot)
- Set Switch 2 Normal Open (54 Set Shot)
- Set Switch 3 Normal Closed (61 Set Shot)
- Set Switch 3 Normal Open (62 Set Shot)
- Set Switch 4 Normal Closed (63 Set Shot)
- Set Switch 4 Normal Open (64 Set Shot)

AD2083-02B Code Converter

See **Supported AD Keyboards** on page 5 for button names used on specific keyboards.

Operate Commands

The controller must be in Operate mode to use these commands.

Dome Function	Keyboard Command
Call Preset 1-16	**1-16 Shot**
Reset Iris	**66 Shot**
Flip	**67 Shot**
Run Pattern # 1	**70 Shot**
Run Pattern # 2	**71 Shot**
Run Pattern # 3	**72 Shot**
Auto Repeat Pattern #1	**69 Shot,** then **70 Shot**
Auto Repeat Pattern #1	**69 Shot,** then **71 Shot**
Auto Repeat Pattern #1	**69 Shot,** then **72 Shot**

In addition, the following commands *are not* supported:

- *Set Auxiliary 4 OFF (63 Shot)*
- *Set Auxiliary 4 ON (64 Shot)*

Program Commands

The controller must be in Program mode to use these commands.

Dome Function	Keyboard Command
Reset Dome	**65 Shot**
Program Preset	**1-16 Shot**
Define Pattern #1	**70 Shot**
Define Pattern #2	**71 Shot**
Define Pattern #3	**72 Shot**
End Pattern Definition	**68 Shot**
Save New Pattern	**69 Shot**
Clear Pattern #1	**62 Shot**
Clear Pattern #2	**63 Shot**
Clear Pattern #3	**64 Shot**
Enter V-phase Adjustment	**67 Shot**, followed by iris open/close
Exit V-phase Adjustment	**67 Shot**

MegaPower 48 Matrix Switcher/ Controller System

See **Supported AD Keyboards** on page 5 for button names used on specific keyboards.

Dome Function	Keyboard Command
Define Pattern # 1	**121 - F2**
Define Pattern # 2	**122 - F2**
Define Pattern # 3	**123 - F2**
End Pattern Definition	**120 - F2**
Save New Pattern	**130 - F2**
Go to Pattern # 1	**31 - F1**
Go to Pattern # 2	**32 - F1**
Go to Pattern # 3	**33 - F1**
Run Pattern # 1	**21 - F1**
Run Pattern # 2	**22 - F1**
Run Pattern # 3	**23 - F1**
Auto Repeat Pattern # 1	**41 - F1**
Auto Repeat Pattern # 2	**42 - F1**
Auto Repeat Pattern # 3	**43 - F1**
Clear Pattern # 1 (SpeedDome RS-422)	**131 - F2**
Clear Pattern # 2 (SpeedDome RS-422)	**132 - F2**
Clear Pattern # 3 (SpeedDome RS-422)	**133 - F2**
Flip (Rotate dome 180º)	**19 - F1**
Reset Iris	**20 - F1**
Return to Auto Iris / Auto Focus	**69 - F1**
Reset Dome	**30 - F1**
Enter Vertical Phase Adjust Mode	**38 - F2**
Exit Vertical Phase Adjust Mode	**39 - F2**

In addition, the following commands *are not* supported:

- *Set Auxiliary 4 OFF (70-F1)*
- *Set Auxiliary 4 ON (71-F1)*

AD168/MegaPower 168 Matrix Switcher/ Controller System

See **Supported AD Keyboards** on page 5 for button names used on specific keyboards.

Dome Function	Keyboard Command
Define Pattern # 1	121 - F2
Define Pattern # 2	122 - F2
Define Pattern # 3	123 - F2
End Pattern Definition	120 - F2
Save New Pattern	130 - F2
Go to Pattern # 1	31 - F1
Go to Pattern # 2	32 - F1
Go to Pattern # 3	33 - F1
Run Pattern # 1	21 - F1
Run Pattern # 2	22 - F1
Run Pattern # 3	23 - F1
Auto Repeat Pattern # 1	41 - F1
Auto Repeat Pattern # 2	42 - F1
Auto Repeat Pattern # 3	43 - F1
Clear Pattern # 1 (SpeedDome RS-422)	131 - F2
Clear Pattern # 2 (SpeedDome RS-422)	132 - F2
Clear Pattern # 3 (SpeedDome RS-422)	133 - F2
Flip (Rotate dome 180º)	19 - F1
Reset Iris	20 - F1
Return to Auto Iris / Auto Focus	69 - F1
Reset Dome	30 - F1
Enter Vertical Phase Adjust Mode	38 - F2
Exit Vertical Phase Adjust Mode	39 - F2

In addition, the following commands *are not* supported:

- *Set Auxiliary 4 OFF (70-F1)*
- *Set Auxiliary 4 ON (71-F1)*

Manchester Commands

These commands are supported by systems using the Manchester protocol.

See **Supported AD Keyboards** on page 5 for button names used on specific keyboards.

Verified with AD2050, AD2091, and AD168 with CCM (v. 3.01)

Dome Function	Keyboard Command
Program Presets 1 - 64	1- 64 Set Preset
Call Presets 1 - 64	1- 64 Call Preset
Program Pattern 1	70 Set Preset
Program Pattern 2	71 Set Preset
Program Pattern 3	72 Set Preset
Save Pattern Programming	69 Set Preset
Cancel Pattern Programming	68 Set Preset
Repeats following pattern	69 Call Preset
Run Pattern 1	70 Call Preset
Run Pattern 2	71 Call Preset
Run Pattern 3	72 Call Preset
Reset Dome	65 Set Preset
Resume Auto Focus / Auto Iris	66 Call Preset
Flip (Rotate dome 180º)	67 Call Preset
Activate / Deactivate V-phase delay setting adjustment	67 Set Preset

Declarations

Regulatory Compliance

Emissions .... 47 CFR, Part 15
ICES-003
EN55022 Class A (CE)

Immunity ....EN50130-4 (CE)

Safety..UL1950
CSA C22.2 No 950
EN 60 950

FCC COMPLIANCE: This equipment complies with Part 15 of the FCC rules for intentional radiators and Class A digital devices when installed and used in accordance with the instruction manual. Following these rules provides reasonable protection against harmful interference from equipment operated in a commercial area. This equipment should not be installed in a residential area as it can radiate radio frequency energy that could interfere with radio communications, a situation the user would have to fix at their own expense.

EQUIPMENT MODIFICATION CAUTION: Equipment changes or modifications not expressly approved by Sensormatic Electronics Corporation, the party responsible for FCC compliance, could void the user's authority to operate the equipment and could create a hazardous condition.

See "SpeedDome Optima LT Features" on page 2.

Other Declarations

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