

# Golden Gate™ Heated Diamond ATR Top-Plate

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## *User Manual*





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2I-10540 Issue 14

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## CONTENTS

1. INTRODUCTION .....3

2. UNPACKING AND CHECKLIST .....4

3. DISPLAYABLE PARAMETERS AND SPECIFICATIONS .....5

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# 1. Introduction

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The Golden Gate™ Heated Diamond ATR Top Plate (P/N's GS10540 and GS10542) is one of a series of top plates that are used on the optical unit of the Golden Gate™ ATR system.

The Heated Diamond ATR Top Plate is operable from ambient to 200°C temperature by a dedicated 4000 Series™ Temperature Controller.

This particular manual is to be used in conjunction with the standard Golden Gate™ manual (GS10500 Series) supplied with every Golden Gate™ system and a separate 4000 Series™ Temperature Controller manual.

**Warning:** *The diamond mounting in the Gold Gate™ ATR Top Plate has a very small air gap around its periphery. This is to minimize heat loss to the surrounding top-plate and to ensure quick warm up. It is possible, when cleaning the diamond with excessive amounts of solvent, for some of this to leak past the diamond plate and give solvent absorption bands. For this reason, the diamond should only be cleaned with tissue moistened with solvent.*

*Before powering up the controller make sure that the power/ thermocouple lead of the Heated Golden Gate™ ATR Top-plate is connected to the back of the 4000 Series™ Temperature Controller. The plug is a push fit and the knurled ring is rotated to click the plug into position.*

## 2. Unpacking and Checklist

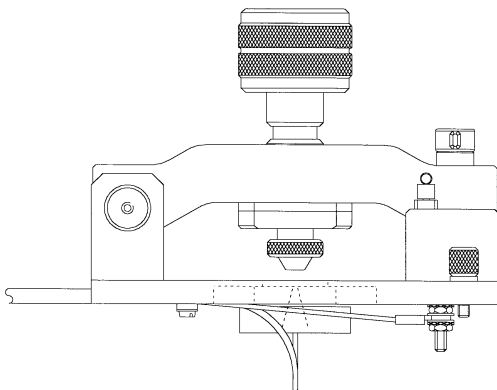
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On receipt of the equipment please check that the following have been supplied:

- Golden Gate™ Heated Diamond ATR Top-plate (GS10540)
- Golden Gate™ Optical unit with choice of ZnSe or KRS-5 lenses and appropriate Benchmark baseplate (if ordered as GS10542).
- 4000 Series™ Temperature Controller, Power Cable and Manual

Remove the top plate and/or Golden Gate™ optics unit from their packing and install the Golden Gate™ ATR unit and the top plate into the spectrometer (see Golden Gate™ Manual GS10500).

For heating of the Golden Gate™ Heated Diamond ATR Top-Plate please follow instructions from the 4000 Series™ Temperature Controller Manual.



### *3. Displayable Parameters and Specifications*

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The Golden Gate™ Heated Diamond ATR Top Plate is provided with its own dedicated 4000 Series™ Temperature Controller. A separate manual is supplied for specific operation of the 4000 Series™ Temperature Controller.

For operation of the Heated Diamond ATR Top Plate the parameters of the 4000 Series™ Temperature Controller have been factory set as shown on the following page. Not all the displayable parameters can be changed but have been listed for reference purposes. If you ever need to change a parameter or autotune the controller for a specific temperature range, certain parameter settings will be altered. You can get back to original factory settings by reprogramming the controller with these original values.

#### **Specifications**

Accessory Type GS10540 or GS10452

Voltage	230V	110V	100V
Frequency	50HZ	60HZ	50/60HZ
Max Power	150W	150W	150W
Fuse Rating	1.5A	3A	3A
Fuse Type	T	T	T

Insulation rating of external circuits (appropriate for single fault condition) = basic insulation and protective (earth) bonding.

Humidity operation range – 20% to 90% relative humidity non-condensing.

## Displayable Parameters For Heated Golden Gate™ GS10540 with WEST 6100+ (4000 Series™) Controllers

Parameter Display (In Green)	Parameter Name	Parameter Factory Set Value
FiLt	Input Filter Time Constant	3.0
OFFS	Process Variable Offset	0
PP <sub>LL</sub>	Primary (Heat) Output Power	0
Pb_P	Primary Output Proportional Band	3.8
ArSt	Automatic Reset (Integral Time Constant)	0.31
rAtE	Rate (Derivative Time Constant)	0.07
biAS	Manual Reset (Bias)	25
SPuL	Setpoint Upper Limit	200
SPLl	Setpoint Lower Limit	0
OPuL	Primary (Heat) Output Upper Power Limit	100
Ct l	Output 1 Cycle Time	4
PhAl	Process High Alarm	200
AHyl	Alarm 1 Hysteresis	1
PLA2	Process Low Alarm	0
AHy2	Alarm 2 Hysteresis	2
APt	Auto Pre-Tune enable/disable	diSA
PoEn	Manual Control select enable/disable	diSA
SPr	Setpoint Ramping enable/disable	EnAb
rP	Setpoint Ramp Rate Value	1800
SP	SP Value	1
SLoc	Set-up Lock Code	10



## EC Declaration of Conformity

This is to certify that the:

**HEATED GOLDEN GATE & 4000 Series TEMPERATURE CONTROLLER  
10540/10542**

Manufactured by:  
**SPECAC LIMITED**

Conforms with the protection requirements of Council directives 2004/108/EC , relating to the EMC DIRECTIVE,

by the application of:

- 1) Testing to the following standard:  
EN-61326:2006/8 EMC (Emissions/Immunity) requirements for Electrical Equipment for measurement, control and laboratory use.
- 2) Supported by SPECAC Technical File No. **TF10540**

and also conforms to the general safety requirements of Council Directives 2006/95/EC , relating to the LOW VOLTAGE DIRECTIVE,

by the application of:

- 1) EN61010-1:2010, Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory use.
- 2) Supported by SPECAC Technical File No. **TF10540**

Responsible Person:

**Name:** Mr.G.Poulter  
**Position:** Technical Director  
**Serial No:**  
**Name:**  
**Position:**

**Signature:**

**Of:** Specac Ltd.  
**conforms to the above**

**Date:** 14th Feb 2013

**Signature:**

**Of:** Specac Ltd.

**Date:**

Original to file/1 Copy to Customer:

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