

SpotBot® 2 96-Well and 384-Well Microplate Microarray Printing using SpotBot® 2 Desktop Personal Microarrayers

Print microarrays into the standard SBS microplate format using this software with our SpotBot. Well Plate Printing SpoCLe (SpotBot Control Language) software is designed to use with 96-well and 384-well flat bottom microplates and microplate sized glass.

👯 Well Plate Printing Spocle Generator V2.0.2	
Start Pins Plates Microarrays Pre Prints/ Motion Control Wash/dry Options Finish	
Profile for the initial settings	
 Factory Default Profile Start with the factory default settings 	
User Profile Start with the settings from a previously saved profile	
Profile path:	
Help About Change To Basic Mode Exit Back	Next

Screen Shot 1: Start with the factory default to start a new program, or select an existing SpoCLe file to edit. Click Next.



👯 Well Plate Pri	inting Spocle	Generator V	2.0.2					_ 🗆 🗙
Start Pins	Plates	Microarrays	Pre Prints/ Motio	on Control 📔 W	ash/dry	Options	Finish	
Stealth pin s	etup							
Pin Type:		SMP3	•					
Pin Config	guration:		1x1 💌	Pin Configur 1x1	ation Lege 1x2	nd 2x1	2x2	
					Front of S	ipotBot	••	
Help	About	Change To	Basic Mode	Exit	-	Back		Next

Screen Shot 2: Select your pin type form the drop down menu. This will provide a suggested center-to-center spot spacing later in the software. Note: the number in the catalog ID designates the size of the tip of the pin and suggested center to center spacing. See pin documentation for more details. This software interface uses 1 Pin, since the locations on the slides will be at 9mm spacing and the Pin spacing on the SpotBot Printhead is at 4.5 mm spacing.

arrayit

Well Plate Printing Spocle	Generator ¥2.0.2			
Start Pins Plates	Microarrays Pre Prints/ Motic	on Control Wash/dry O	ptions Finisł	n
Settings for source plates				
C Full Microplates -	Partial Last Microplate	 C Import From Sample Pic 	k File	
Total Microplate Count:	1 A1	1		A24
Last Sampled Well: Total number of samples	B24			Cursor: F6
Spots Per Sample:	P 2 Reload pins after 100 Wash/Dry pins between re	Total number of spots: printed spots eloading	96	P24
Help About	Change To Basic Mode	Exit	Back	Next

Screen Shot 3: The software can accommodate 384 well plates (MMP384 recommended). By selecting "Partial Microplate" specific wells that contain samples can be selected, as shown by the green and red shading. The last sample and last printed sample is red. Enter the number of spot replicates for each well desired into the dialog box "Spots Per Sample". Selecting 2 Spots Per Sample, for example, would print each sample in duplicate at the spot spacing defined by the user (see next dialog box). The Micro Spotting Pin can be reloaded after a user-defined amount of spots with one load. Washing and drying micro spotting pins is optional by clicking the box Wash/Dry Pin between reloading.



Well Plate Printing Spocle (Generator ¥2.0.2			_ 🗆 🗙
Start Pins Plates	Microarrays Pre Prints/ Mo	tion Control Wash/dry	Options Finish	1
Settings for microarray prin	nting	Target Microplate		
Spot Spacing:	140 um	A12		H12
Subgrid Dimensions:	Columns Rows 30 💌 x 30 💌			
Print Offset:	Lateral Vertical			
Target Microplate	96 💌 Well			
		A1		Н1
Help About	Change To Basic Mode	Exit	Back	Next

Screen Shot 4A.



Well Plate Printing Spor	le Generator ¥2.0.2		
Start Pins Plates	Microarrays Pre Prints/ Mo	tion Control Wash/dry Options Finish	
Settings for microarray	printing	Target Microplate	
Spot Spacing:	140 um	A24	P24
Subgrid Dimensions:	Columns Rows 7 💌 x 7 💌		
Print Offset:	Lateral Vertical		
Target Microplate	384 💌 Well		
		A1	P1
Help About	Change To Basic Mode	Exit Back	Next

Screen Shot 4B

Screen Shot 4A & B, Description: Select well pattern, spot spacing, lateral and vertical start and stop position of the microarrays in each "well", and define the numbers of columns and row for the microarray. Each microarray in each well will be identical. Plate is loaded onto the SpotBot as shown, with well A1 being closest to the front door of the SpotBot, Pre-print slides are loaded in front of the microplate, a special bracket is sold to hold both the target microplate and pre-print slides in place.

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Well Plate Printing Spocle Generator ¥2.0.2		_ 🗆 🗵
Start Pins Plates Microarrays Pre Prints/ Motion	Control Wash/dry Options Finish	
Settings for pre-prints	Settings for motion control	
Maximum printable pre-print spots: 53248	Dwell Times	
Pre-print Spots Per Sample: 5	Sample Loading: 3.0	s
Pre-print Substrate Replacement:	Pre-printing: 0.0	s
Total number of pre-print spots 480	Printing: 0.0	- s
The pre-print substrate will not have to be replaced during the print run		
Help About Change To Basic Mode	Exit Back	Next

Screen Shot 6: Use these dialog boxes to adjust the number of desired pre-print spots prior to pins moving to print into the target well plate. Also in this dialog box is Pin resting or "dwell" time during sample loading, pre-printing and printing. The dwell time is corresponds to the length of time the pins rest on a particular surface measured in seconds. Specify each value in the "Dwell Times" dialog boxes for "Sample Loading", "Pre-printing" and "Printing". The "Sample Loading" dwell time refers to the length of time the pins rest on the bottom of the 384-well microplate. The "Pre-printing" and "Printing" dwell times denote the length of time the pins "pause" on the printing substrates between the down and upstroke. The factory defaults are 3.0 sec, 0 sec and 0 sec, respectively for the three settings. The default dwell times produce efficient sample loading and printing in most cases. Viscous samples may require a longer dwell time for efficient loading. A 50 msec (0.05 sec) dwell time for "Printing" can be used to produce larger spots or to increase printing efficiency on highly hydrophobic substrates.

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Start Pins Plates Microarray Settings for printing pin cleaning r	vs Pre Pr outines	nnts/ Mol	ion Control Wash/dry Uptions	Finish	
During Printing			End Of Print Run		
Number Of Wash/Dry Cycles:	4	1	Number Of Wash/Dry Cycles:	10	
Wash Duration:	0.5	s	Wash Duration:	0.5	s
Dry Duration:	0.5	s	Dry Duration:	0.5	s
Different Duration For Last Cyc	cle		Different Duration For Last Cyc	cle	
Last Cycle Wash Duration:	2.0	s	Last Cycle Wash Duration:	2.0	s
Last Cycle dry Duration:	10.0	s	Last Cycle dry Duration:	10.0	s

Screen Shot 7: The recommended settings are shown in the "Settings for printing pin cleansing routines" dialog boxes above. A minimum of 4 Wash/dry cycles is recommended to remove samples from the previous printing cycle. Using fewer than 4 Wash/Dry cycles may result in sample "carry over" into the subsequent printing cycle. For most applications, an extended Wash/Dry cycle (2.0 sec and 10.0 sec) is recommended for the final Wash/Dry step to ensure that residual sample has been removed and that the pins are dry for the subsequent sample-loading step. The parameters governing the final Wash/Dry cycle are specified by checking the "Different Durations for Last Cycle" dialog box. The first 3 Wash/Dry cycles are kept brief (0.5 sec) to prevent sample drying on the pins.



Well Plate Printing Spocle Generator ¥2.0.2	
Start Pins Plates Microarrays Pre Prints/ Motion Control Wash/dry Options Finish	
Options for the SPOCLE microarray printing file	
SPOCLE Title:	
(Enter a title to be displayed in Spotapp)	
1	
Help About Change To Regin Mode Evit Pool	Nevt
	INEXL

Screen Shot 8: Use this dialog box to save short notes or title about the file and experiment this program is being used for. This information will be displayed when the program is running. This is not the file name for the program.



👯 Well Plate Printing Spocle Generator ¥2.0.2
Start Pins Plates Microarrays Pre Prints/ Motion Control Wash/dry Options Finish
Settings for the generation of the SPOCLE microarray printing file
SPOCLE Microarray Printing File Path:
C:\Documents and Settings\Administrator\Desktop\SPOCLE
The following files are saved in the same folder as the SPOCLE file, using a modified name ending with the indicated suffix.
✓ User Profile (*.sgp)
Content Map (*-map.txt)
C Automatically Execute
Help About, Change To Basic Mode Exit Back Finish

Screen Shot 9: Use this dialog box to save the SPOCLE file onto the computer hard drive. The default name of SPOCLE files created by the SPOCLE Generator includes a date and time stamp. To change the file name and/or path of the file, click on the "save as" to the "SPOCLE Microarray Printing File Path" drop-down menu, and enter the user-specified information.

SpotApp - Microplates (384-we	ell)	<u> </u>
Existing microplate calibrations:		
Arrayit	Select	Re-calibrate
	New	Delete
	Cancel	Help

Screen Shot 10: Use this dialog box to create and calibrate a new 384-well microplate.