Calibration

English

Lotem 800 Quantum Family

399Z1R330A

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4992864	5296935	5473733	5636330	5861904	6016752	6164637
5049901	5313278	5481379	5649220	5861992	6031932	6180325
5079721	5323248	5488906	5650076	5864651	6043865	6181362
5103407	5325217	5497252	5652804	5875288	6060208	6181439
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5113249	5333064	5509561	5691828	5900981	6063546	6189452
5122871	5339176	5517359	5696393	5934196	6072518	6191882
5124547	5343059	5519852	5699174	5942137	6090529	6204874
5132723	5355446	5526143	5699740	5946426	6096461	6208369
5150225	5359451	5532728	5708736	5947028	6098544	6252522
5153769	5359458	5561691	5713287	5958647	6107011	6260482
5155782	5367360	5568595	5739819	5966504	6112663	
5157516	5367388	5576754	5742743	5969872	6115056	
5208818	5384648	5579115	5764381	5973801	6121996	
5208888	5384899	5592309	5771794	5986819	6130702	
5247174	5412491	5594556	5785309	5995475	6134393	

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This document refers to the following versions:



This guide applies to the Lotem 800 Quantum and Lotem 850 Quantum. Throughout this document, the Lotem 800 Quantum is mentioned and applies to all platesetters in the Lotem 800 Quantum Family, unless otherwise specified.

1) Lotem PC Controller version 3.51.02

2) MCE Firmware version 1.20.02

3) Xilinx Firmware version 1.25

4) Head Firmware version Th2h101c.bin

For Lotem 800 Quantum with Spectrum:

1) Lotem PC Controller version 3.50.07

2) MCE Firmware version 1.18

3) Xilinx Firmware version 1.05

4) Head Firmware version 1.00c

Working with the Splot

1. Open the Splot by double -clicking the Splot icon.
2. From the Menu bar, go to **Term** -> **Input Mode** and select it.
3. From the Menu bar, go to **Term** -> **Port** and select **8**.
4. From the Menu bar, go to **Term** -> **Port Setting**:

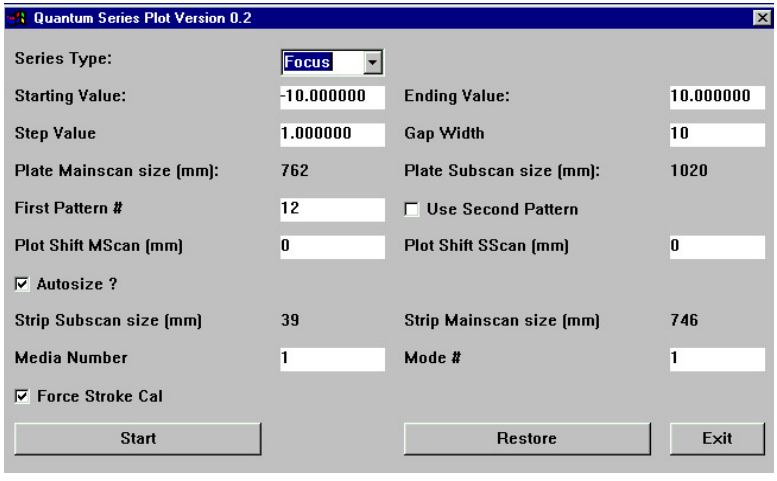
Baud rate:	57600
Parity:	none
Data bits:	8
Stop bits:	1

Quantum>> is displayed. Click **Enter**.

To display the TH2 >> prompt, type **redirect enable.**
To return to the Quantum>> prompt, type **redirect disable**.

To execute a certain script, do the following:

- File -> **C:/Tii/splot/scripts/tests/Quantum Sereis.spt**
- Go to **Exec -> Execute**. The Quantum Series Plot window is displayed.



- To submit the series, click **Start**.

To inform the TMCE that there is a plate on the drum, type the following:

Quantum>>**load “height (mm)” “width (mm)” “thickness (microns)”**



In order to expose a series test, you must load a plate.

Media Setting

Type the following commands:

1. Quantum>> **prm hazardous media enable** (Password).
2. Setting Media Parameters:
    1. Quantum>>**media**.
    A list of all media types is displayed.
    2. To change Current media type:
    Quantum >>**media #**
    3. Quantum>>**set media <media number> name <"media name">**.
    For example, **set media 3 name "Agfa P970"**.
    4. Quantum>>**set media <media number> invert <value>**,
    Enter value number of 0 or 1 according to the plate type:
    1 = positive plate.
    0 = negative plate.
    For example, **set media 3 invert 1**.
3. Setting Hdm Parameters:
    1. To get out of the head, type:
    TH2>>**redirect disable**.
    2. Quantum>>**set hdm <media number>**.
    A list of relevant parameters displayed.
    3. Make sure the Media name is correct, if no type:
    Quantum>>**set hdm** <**media number> name <"media name">**.
    For example, **set hdm 3 name "Agfa P970"**.
    4. Quantum>>**set hdm <media number> ds <value>**,
    for example, **set hdm 3 ds 250**.

    Drum speed should be calculated from **Media** spreadsheet.

    5. Quantum>> **set hdm <media number> wpower <value>**.

    Wpower should be taken from **Media** spreadsheet.

4. Setting Med Parameters:



A difference exists between the media number TH2 and the Quantum. If the media number in the Quantum is (N), then the media number in the TH2 is (N-1).

1. To get in the head, type:
   Quantum>>**redirect enable.**
2. TH2>>**set med <media number> name <"media name">**.
   For example, **set med 2 name "Agfa P970".**



The media number is one less than the media number chosen in step 1.2

5. Define the plate in the GUI.
   1. Restart the Lotem application.
   2. In the GUI**--> setting --> media definition**.
   3. Chose **New**.
   4. Enter a name and size of the plate.
   5. Go to **TH name** and choose the **Media name**; define the new name in the Lotem.
   6. Save plate.

Head Setting and Calibration

Make sure all connections are completed before performing calibration.

Before performing Head Setting and Calibration, you must defeat the focus laser and the motor defeater interlocks.

To determine the Head resolution , type Quantum >> **set sis.**

1. Load plate from the Loading system dialog box.
2. Set the correct media by typing:
   Quantum >> **media<media number>**.
3. Quantum >> **set media <media number>**.
4. Slightly loosen the four Allen screws that hold the Z-stage.
   See *Figure 1. on page 8*.
5. Quantum >> **zstage forward.**
6. From the PC application, move the carriage to the middle of the plate (500 mm).
   Or, from Splot, type
   Quantum >> **carriage moveto 500**.
7. From the PC application, move the drum to position **-795**.
   Or, from Splot type
   Quantum >> **drum move 50**.
8. Quantum >>**head install on.**

   Parameter results will be displayed: **State, Sum, Error**.

9. Use the 1/4 open wrench to:
   - Set error to zero (0) for 0.2 mm plate
   - Set error to (-130) for 0.3 mm plate
   - For Spectrum machine: set error to (-50) for 0.3 mm plate only. (because the Spectrum machine uses a z-stage spacer of 280 microns)

   To set the error, tighten / loosen the golden adjusting screw on the z-stage unit.

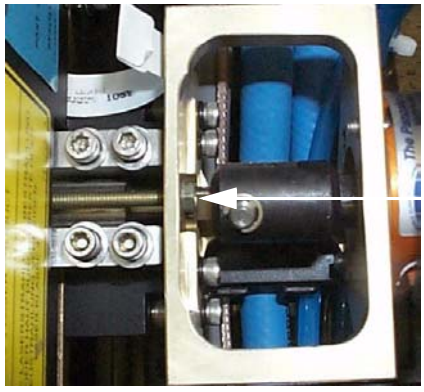


Figure 1. Z-stage, adjusting screw

If the error = 50 in both positions of the z-stage (forward and backwards), then the Head is not positioned in front of the plate.

The **SUM** parameter should be around **1200+/- 300**.
The sum is affected by the **Reflectivity** and the **rcvgain** parameters (Do not change).
If the SUM is more than 1200, increase the Reflectivity; if it is less than 1200, decrease the Reflectivity.

10. Tighten the four screws that were loosened in step 5.
11. Quantum>>**zstage back**. Check the error adjustment, the error should be around 0 for 0.3mm plate thickness.
12. Quantum>> **head install off.**

13. To find the **Reflectivity** parameter:
    - Quantum >> **Redirect enable**.
    - TH2 >> **eng.**
    - TH2 >> **foc cal reflect**.
      A reflectivity test is performed. A result parameter is displayed.
    - Enter the value of the reflectivity found for SUM approx.1300 in the following directories:
      Quantum >> **set hdm <media number>sr <value>**

    The media number is one less than the media number chosen in step 2.2

14. Quantum >> **media < media number>.**
    This command activates the change in reflectivity.
15. Quantum>> **head install on.** Verify the sum is approx. **1200.**
16. TH2 >> **field**. This ends the permission to perform foc cal test.

    If, after having performed the **>> foc cal reflect**, the returned value of reflectivity is 0.01 (saturated), then force SR to a slightly higher value, for example 0.012 (**>> set med(#) SR 0.012**) and then proceed to step 17.

17. To find the **rcvrgain** parameter:
    - TH2 >> **foc cal rcvrgain**.
      The rcvrgain value is displayed
    - TH2 >> **set med(#) rcvrgain**.
      Change the value in steps of 0.1
    - Quantum >> **head install on**.
      Verify that the sum is close to 1200.

Edge Detection Procedure

1. In the Lotem Application move the carriage to 40.

   Make sure the laser beam is not on a vacuum groove.

2. Quantum>>**Head Install On.**
3. In Lotem application, select:
   Utilities>Hardware>Drum System>Drum Motor Dialog.
4. From the Drum Motor dialog box, select **Position** and type (**-795**).
5. Find the beginning and the end of the groove in the drum position:
   - In the Drum Motor dialog box, select **Distance**, type (**1**), and click **Enter**.
   - Continue to enter **±1** while checking the sum value in the Splot window.
   - When the laser beam is set to the middle of the groove and the sum is equal or very close to zero, continue to step 6.

   The range of the groove is 5 mm.

6. Quantum>> **Head Install Off**.
7. Quantum>> **Drum**.
   Look at the Drum position. For example, Drum Position = 84.422.
8. Quantum>>**Set Edge Drumpos <>**.
9. Check the edge detection status:
   Quantum>> **Access Enable**.
   Make sure the status is **Enable**.
   Quantum>> Option Edgedetect Enable.
   If the status is not **Enable,** then
   Quantum **>> Option Edgedetect Enable**
   Make sure the laser beam is not on a vacuum groove. The range of the groove is 5 mm.

   <> represents the value that was found in step 8.

10. Test the edge position:

- Load plate form the Lotem GUI.
- Quantum>> **Load X Y Z** (each variable separated by space) where:
  - X = Plate size along the drum (MM)
  - Y = Plate size along the screw (MM)
  - Z = Plate thickness in microns

For example: load 791 1029 300.

11. Qauntum>> **Edge Test.**
    A test is performed, write down the value of the “edge position estimate”.

12. Run the test five (5) times. Each time check for ±10 micron error tolerance.

This Section describes the calibration procedure of the imaging head of the Lotem 800 Quantum. This procedure is performed by the service engineer at the customer's site, after the platesetter installation.

The following tests are involved in the calibration process:

- Focus Series
- Power Series
- Slop Series
- Curve Series
- TLT Series
- Plot 1 Test

The results for some of the calibration tests depend on the plate type; these tests should be repeated for different plate types.

When working with positive plates, change the invert to 0 in order to see the result. For example, set media 3 invert 1. After the series tests are performed, change it back via the Lotem application, an error message will appear, ignore it and re-define the plate.

Focus Series

Before starting the calibration, write down the **foffset** by typing: Quantum >>**set head foffset**.

To run Focus series, do the following:

1. Load a plate from the GUI.
2. Quantum>>**load**.
3. To ensure the plate is defined in the head, type:
   Quantum >> **set mds.**
4. For pos. plate, type:
   Quantum >> **set media # invert 0**.

   Reduce the wpower for the focus test by 20% for Kodak of the wpower needed to expose.
5. Quantum **>>set hdm # wpower**.
6. Quantum >> **set hdm # wpower <new power value>**,
   For example, **set hdm 2 wpower 15**.

   
   Wpower should be calculated from **Media** spreadsheet.
7. Open the Quantum series plot dialog in Splot by opening:
   Files/Open/Script/Test/Quantum series.Spt.
   Then:
   Exec/Execute
8. Define the following parameters:
   The focus range is between **(-60)** to **(+60)**
   - Define starting value: **(-X)**
   - Define ending value: **(+X)**
   - Define step value: **(10)**
   - Gap width: **(10)**
   - First pattern: **(15)**
   - Plot shift Mscan: **(10)**
   - Plot Shift SScan: **(10)**

- Autosize: **(X)**
- Stripe subscan: **(50)**
- Stripe mainscan: **(500)**
- Media number: **(#)**
- Mode: **(1)**
- Force stroke cal: **No**

Make sure the Force Stroke Cal is not selected.

The media number should be the media number you are currently using.

Due to the low power used for the Focus test some of the target will disappear after developing.

9. From the processed plate, choose the area with the best focus. Start focusing on a small area. With each step you should narrow in on an area until you reach the best focus.

Mark the plate before developing, The strips are not labeled. The first strip (start value) represents the lowest value of the test. The last strip (end value) represents the highest value of the test.

10. Enter the focus value under Quantum >> **set head foffset <_>**.

Power Series

To run Power series, do the following:

1. Load a plate from the GUI.
2. Quantum>>**load**.
3. For pos. plate, type:
   Quantum >> **set media X invert 0**.
4. Open the Quantum series plot dialog in Splot by opening:
   Files/Open/Script/Test/Quantum series.Spt.
   Then:
   Exec/Execute
5. Define the following parameters:
   - Define starting value: **(-X)**
   - Define ending value: **(+X)**
   - Define step value: **(0.5)**
   - Gap width: **(10)**
   - First pattern: **(12)**
   - Plot shift Mscan: **(10)**
   - Plot Shift SScan: **(10)**
   - Autosize: **(X)**
   - Stripe subscan: **(50)**
   - Stripe mainscan: **(500)**
   - Media number: **(#)**
   - Mode: **(1)**
   - Force stroke cal- **Yes**.

The media number should be the media number you are currently using.

Refer to **Media** spreadsheet for the wpower parameter.

6. From the processed plate choose the best power value.
7. Enter the value under Quantum >> **set hdm # wpower <_>**.



represents the media number

Slope Series

To run Slope series, do the following:

1. Load a plate from the GUI.
2. Quantum>>**load**.
3. For pos. plate, type:
   Quantum >> **set media X invert 0**.
4. Open the Quantum series plot dialog in Splot by opening:
   Files/Open/Script/Test/Quantum series.Spt.
   Then:
   Exec/Execute
5. Define the following parameters:
   The slope series range is between **(-16)** to **(+16)**
   - Define starting value: **(-X)**
   - Define ending value: **(+X)**
   - Define step value: **(2)**
   - Gap width: **(10)**
   - First pattern: **(80)**
   - Plot shift Mscan: **(10)**
   - Plot Shift SScan: **(10)**
   - Autosize: **(X)**
   - Stripe subscan: **(50)**
   - Stripe mainscan: **(500)**
   - Media number: **(#)**
   - Mode: **(1)**
   - Force stoke cal: **Yes)**

   
   The media number should be the media number you are currently using.
6. From the processed plate, choose the value at which the expose is clean from effects.

7. Enter the value under Quantum >> **set hdm # bmslope <_>**.



represents the media number.

8. Quantum >> **strockcal**.
   This will activate the change.

Curve Series

To run Curve series, do the following:

1. Load a plate from the GUI.
2. Quantum>>**load**.
3. For pos. plate, type:
   Quantum >> **set media X invert 0**.
4. Open the Quantum series plot dialog in Splot by opening:
   Files/Open/Script/Test/Quantum series.Spt.
   Then:
   Exec/Execute
5. Define the following parameters:
   The curve range is between **(-16)** to **(+16)**
   - Define starting value: **(-X)**
   - Define ending value: **(+X)**
   - Define step value: **(2)**
   - Gap width: **(10)**
   - First pattern: **(80)**
   - Plot shift Mscan: **(10)**
   - Plot Shift SScan: **(10)**
   - Autosize: **(X)**
   - Stripe subscan: **(50)**
   - Stripe mainscan: **(500)**
   - Media number: **(#)**
   - Mode: **(1)**
   - Force stoke cal: **Yes**



The media number should be the media number you are currently using.

6. From the processed plate, choose the value at which the expose is clean from effects.
7. Enter this value under Quantum >> **set hdm # bmcurve <_>**.
8. Perform **Stroke Cal** from the terminal.

Plot 1 Test

Each Head received from the manufacturing line includes a plate with a plot 1 image for reference.

Plot 1 represents:

- Vertical lines
- Horizontal lines.
- Slash lines
- VS (variable Dot area).

To check the Head Calibration, expose plot1 test.

1. Load a plate from the GUI.
2. Quantum>>**load**.
3. Quantum >> **plot 1 (file size along the screw) (file size along the drum).**

To shift the image, type: Quantum>>plot shift X Y.
X refers to subscan. Y refers to mainscan.

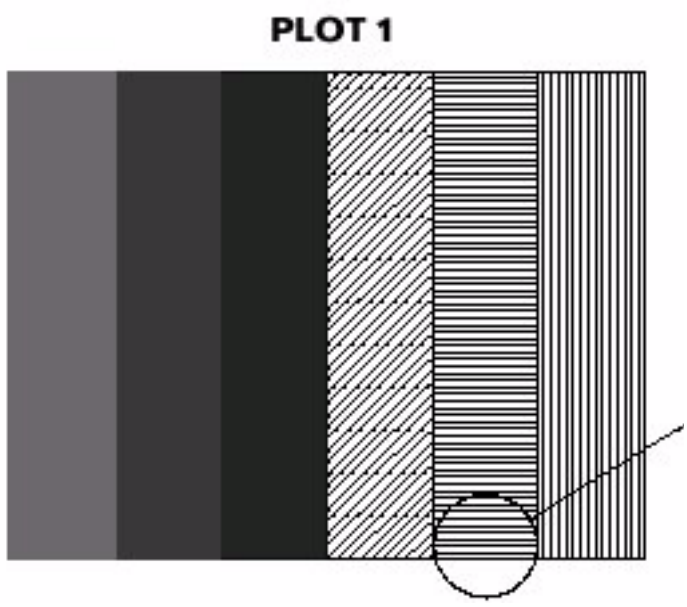
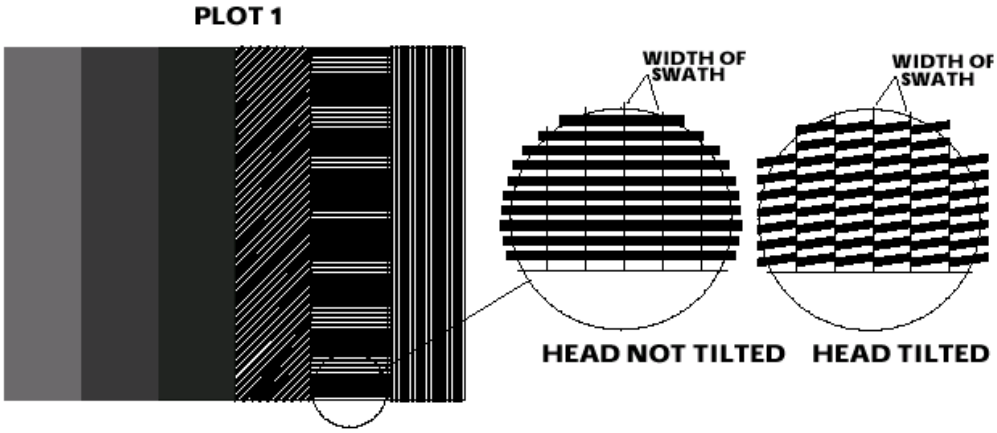


Figure 2. Plot 1 image

TLT Setup Procedure

1. Check the tilt with a powerful microscope.
2. Inspect the 3 x -3 horizontal lines of the plate imaged by the plot 1 command.
3. Make sure that the pixels line up.



Use the following diagram to determine the Head tilt.

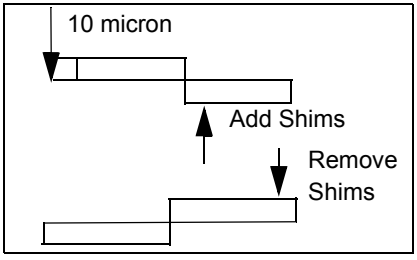


Image as appears under microscope.

Actual image is inverted

Tools and parts needed for the adjustment.:

- Microscope (100x * 200x)
- Crescent wrench
- Shims

1. Estimate the height difference in microns at the swath boundary. That number is the tilt error.
2. Determine how many shims are needed according the following table.

Tilt Error (measured in micron)	**Shims Thickness** (in microns)	**# of shims req'd -240 channel Head**
1	50.8	1
2	50.8	3
3	50.8	4
4	50.8	5
5	50.8	7
6	50.8	8
7	50.8	9
8	50.8	11
9	50.8	12
10	50.8	14

3. Remove the head.
4. Use the crescent wrench to unscrew the tilt button.
5. Add the appropriate amount of shims and screw in the tilt button.
6. Tighten the 0 Nm torque wrench.
7. Install the head.

Excurve /Tone reproduction Test

Additional calibration tests are described in the chapters 2 and 4 of Output Devices for Brisque User Guide version 4.0.

Appendix - Lotem 800 Quantum with Spectrum

Overview

This section explains how to set up the Lotem Quantum Spectrum thermal exposure head, after installation, for Imation media.

This head setup procedure is intended for qualified production and field service personnel who are familiar with the following procedures:

Lotem Quantum and thermal 2 exposure head safety practices. Unless stated otherwise, procedures refer to either machine home side or away side for orientation. The home side refers to the carriage motor end of the machine when facing the front of the platesetter.

- Laser safety
- Installing and setting up a thermal 2 head in a standard (non-Spectrum) Lotem.

Laser Safety Practices

To use this document the FSE (Field Service Engineer) must have attended and passed a thermal introductory course and is therefore familiar with the safety precautions when working with a thermal Lotem.



DANGER! Never operate a Lotem Quantum with Spectrum with its enclosure open and the write laser on. The write laser **MUST** be disabled **BEFORE** the enclosure is opened.

Differences from standard thermal head setup:

Setting up a thermal exposure head for making Spectrum proofs is very similar to setting up a thermal head to expose plates on a Lotem Quantum, but there are a few key differences.

The main differences are:

- Focus/surface depth setup must be done once for each donor color.
- Exposure setup must be done once for each donor color.

Required tools:

- X-Rite 938 spectrodensitometer

Or

- X-Rite 528 spectrodensitometer

Positioning the head and checking focus offset on plate:

It is common integration/service practice when installing a head to check the existing foffset parameter by running a focus series. The most unambiguous way to do this, which is recommended for setting up the Spectrum, is to run a foffset series using an aluminum thermal plate (media with sd = 0).



This section assumes that the customer is using Kodak IR plates. If the customer uses a different type of plate, refer to its Media Technical Note for any additional focus information specific to that plate

1. Load the plate.
2. Position the head, using head install on to an error of -50 on a 0.3mm plate (zstage should be in forward position).
3. Run a focus series, as described in steps a to e below.
    1. Set hdm wpower approximately 2 watts under the wpower setting the head was shipped with.
    2. Run the Splot foffset script, so that the current foffset is near the middle of the series. If foffset is close to 0 run a series from -50 to +50 in increments of 5um.
    3. Make sure you mark the test plots with the focus setting (e.g., -50, -45, etc.) **before** you process the plate. With the wpower set below its normal setting the plots not close to the ideal focus may be washed off the plate and disappear!
    4. Pick the most solid plot **independent** of banding. This is the best head foffset value.
    5. Change wpower back to the previous setting.
4. If the best foffset is found to differ by more than 5um from the existing value, enter the new value: set head foffset <new value>
5. Unload the plate.

Proofing Media Setup Verification

Steps 1 & 2 are for field service head installation/replacements only

1. At this stage, you should check to see if you can produce a good proof. Image a test file, and examine image quality. Check Dmax and dot gain on each color.

   Your proof will probably look good at this point, particularly if you're using a head that has been integrated for Spectrum.

   If the proof looks good, go on to the Section - complete the head installation.

   If the proof shows banding at this point, go on to check extrascanlines, set surface reflectivity, adjust the focus, set exposure, and do bmslope and bmcurve series.

2. If image banding was prominent in step 1, check extrascanlines. The value should be 0 for all Imation proofing media.

   Also check media <n> patternid, as patternid should be 3.

Complete the Head Installation

If you are installing/replacing a Spectrum head in the field:

If the image quality was good after verification in 3.3 then the head installation is complete.

If you are integrating a Spectrum head in Production:

Only Gold media material, on North American/High Density/Euro color set, should be used for setting up an Imation head. That is, head integation, or Spectrum integration that require tweaking the imaging settings.



Important! Make sure you are using Imation Gold media for the rest of the process. For the latest batch/run numbers for each donor color, see section 3.3.4 of the Imation/Creo System Certification Specifications document:

http://intranet.creo.com/Products/spectrum/documents/production/Imation_Gold_Media_Run_Nos.doc

Prepare the thermal 2 head for spectrum setup, completing following steps:

To enable access to all parameters enter the 3 passwords below passwords.

- access dev
- prm hazardous media enable
- th2 "eng"

For KPG Matchprint Standard Proofing Media (GT):

Y	Hdm 9	Hdm 10	Hdm 11	Hdm 12
Name	KPGM STD Cyan	KPGM STD Magenta	KPGM STD Yellow	KPGM STD Black
Color	Cyan	Magenta	Yellow	Black
Wpower	11	11	11	11
DS	150	120	170	170
Bmslope	0	0	0	0
Bmcurve	0	0	0	0
FMode	0	0	0	0
Sd	0	0	0	0

Y	Media 9	Media 10	Media 11	Media 12
Name	KPGM STD Cyan	KPGM STD Magenta	KPGM STD Yellow	KPGM STD Black
Extrascanlines	0	0	0	0
Type	11	11	11	11
Color	Cyan	Magenta	Yellow	Black
Debrisoptions	0	0	0	0
PatternID	3	3	3	3

To change the parameters, type: set media <n> <y> <value in table>

	Med 8	Med 9	Med 10	Med 11
rcvgain	1	1	1	1

To change the parameters, type: th2 " set media <n> rcvrgain 1 "

For KPG Matchprint Euro Proofing Media (GT)

Y	Hdm 5	Hdm 6	Hdm 7	Hdm 8
Name	KPGM EU Cyan	KPGM EU Magenta	KPGM EU Yellow	KPGM EU Black
Color	Cyan	Magenta	Yellow	Black
Wpower	11	10	11	11
DS	160	170	145	180
Bmslope	0	0	0	0
Bmcurve	0	0	0	0
FMode	0	0	0	0
Sd	0	0	0	0

The above drum speeds are for KPG Matchprint Euro GT Proofing Media.
To change the parameters, type: set media <n> <y> <value in table>

Y	Media 5	Media 6	Media 7	Media 8
Name	KPGM EU Cyan	KPGM EU Magenta	KPGM EU Yellow	KPGM EU Black
Extrascanlines	0	0	0	0
Type	7	7	7	7
Color	Cyan	Magenta	Yellow	Black
Debrisoptions	0	0	0	0
PatternID	3	3	3	3

To change the parameters, type: set media <n> <y> <value in table>

	Med 4	Med 5	Med 6	Med 7
rcvgain	1	1	1	1

To change the parameters, type: th2 “set media <n> rcvrgain 1”

Y	Hdm 5	Hdm 6	Hdm 7	Hdm 8
Name	KPGM HD Cyan	KPGM HD Magenta	KPGM HD Yellow	KPGM HD Black
Color	Cyan	Magenta	Yellow	Black
Wpower	11	10	11	11
DS	150	125	145	135
Bmslope	0	0	0	0
Bmcurve	0	0	0	0
FMode	0	0	0	0
Sd	0	0	0	0

The above drum speeds are for KPG Matchprint Euro GT Proofing Media.
To change the parameters, type: set media <n> <y> <value in table>

Y	Media 5	Media 6	Media 7	Media 8
Name	KPGM HD Cyan	KPGM HD Magenta	KPGM HD Yellow	KPGM HD Black
Extrascanlines	0	0	0	0
Type	7	7	7	7
Color	Cyan	Magenta	Yellow	Black
Debrisoptions	0	0	0	0
PatternID	3	3	3	3

To change the parameters, type: set media <n> <y> <value in table>

	Med 4	Med 5	Med 6	Med 7
rcvgain	1	1	1	1

To change the parameters, type: th2 “set media <n> rcvrgain 1”

For KPG Matchprint Custom Color Proofing Media (GT)

Y	Hdm 13	Hdm 14	Hdm 15	Hdm 16	Hdm 3	Hdm 4
Name	KPGM Red	KPGM Green	KPGM Blue	KPGM Lt grey	KPGMPurple	KPGM Orange
Color	Red	Green	Blue	Lt Grey	Purple	Orange
Wpower	9	4.5	5.5	9	7.5	8
DS	120	85	75	100	105	105
Bmslope	0	0	0	0	0	0
Bmcurve	0	0	0	0	0	0
FMode	0	0	0	0	0	0
Sd	0	0	0	0	0	0

The above drum speeds are for KPG Matchprint Custom Color GT Proofing Media.
To change the parameters, type: set media <n> <y> <value in table>

Y	Media 13	Media 14	Media 15	Media 16	Media 3	Media 4
Name	KPGM Red	KPGM Green	KPGM Blue	KPGM Lt Grey	KPGM Purple	KPGM Orange
Extrascanlines	0	0	0	0	0	0
Type	7	7	7	7	7	7
Color	Red	Green	Blue	Lt Grey	Purple	Orange
Debrisoptions	0	0	0	0		
PatternID	3	3	3	3	3	3

To change the parameters, type: set media <n> <y> <value in table>

	Med 12	Med 13	Med 14	Med 15
rcvgain	1	1	1	1

To change the parameters type: th2 "set med <n> rcvrgain 1"



When setting up a Thermal 2 head on a Lotem Quantum Spectrum, ensure that the zstage is in the back position during calibration plots!
To do so type:
set mds lastthickness 350
Mode x (x=mode number)

Setting Surface Reflectivity

1. Load the receiver and donors into the loading cassette and insert into the proofing device.
2. Load the receiver using the Lotem Quantum Spectrum Control Software.
3. Load the donor using the Lotem Quantum Spectrum Control Software.

   You must set sr for each donor color.
4. Position carriage so that the focus laser reflects off the donor (usually 500 works for a carriage position, and 200 for the drum position).
5. Enter command th2 "foc cal reflect" and note sr value returned.
6. Enter and save the sr value obtained in the previous step.

   set hdm <n> sr <value returned>
7. Repeat steps 1 to 6 until sr have been found and set for each donor color. However, you can continue to next section, setting focus, with the color donor that is presently on the drum (this saves on media usage) and come back to Section 3.5 for the next color.

Setting Focus (Surface Depth)

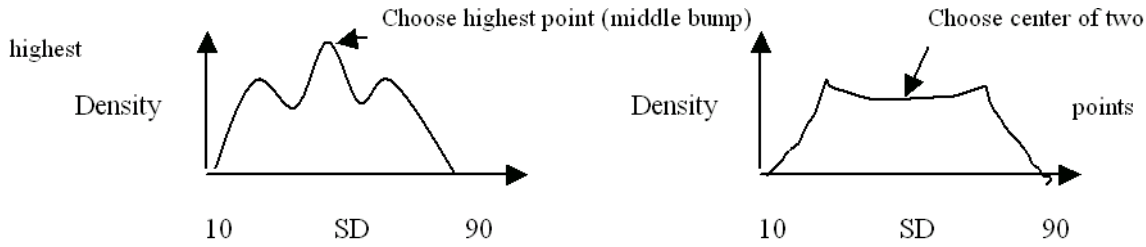
Correct focus for the thermal head for each donor media must be adjusted by adjusting the surface depth media parameter. Surface depth (sd) is set per media, while foffset is set per head. You should not change the foffset value for the head.

1. Check that media thickness is set correctly.

   set mds lastthickness 350

2. Run the Splot surface depth script, using plot 12, starting at sd 10 to 90 in increments of 5um.
3. Carefully mark or otherwise indicate the first strip in the series. Often the first few strips in the series are very faint and it can become confusing to determine which strip corresponds to which foffset value.
4. Determine sd by choosing the value corresponding to the darkest strip in the sd series.

The Density vs. SD curve on Custom Color Red might look different than the ones of the other colours. It can look like illustrated in the following graphs:



If the SD is not obvious, repeat SD-Series with reduced wpower.

Tip: Use the X-Rite 938 or 528 to measure the density of the series strips, and then graph density vs. sd (you can graph it on computer, on paper by hand, or mentally). Use the average of three density measurements per strip (see "appendix B: seeting the X-rite 938 or 528 for averaging" for instructions on setting the X-Rite spectrophotometer to measure the average of several readings). The best sd corresponds to the peak in the graph. For custom colors use following filters for the density measurements:

Custom Color	Red	Green	Blue	Lt Grey	Purple	Orange
X-Rite Filterused for Custom Color measurements	Magenta	Cyan	Visual (Black)	Visual (Black)	Visual (Black)	Yellow

For example, if the Custom Colour Red is measured and the X-Rite shows following densities: Black=0.64,cyan=0.27, Magenta=1.579, Yellow=1.426, use the Magenta density (filter) as the density reading.

Important: Ignore banding as a criterion for best focus.

5. Enter the best sd value for this donor:

   set hdm <n> sd <value determined in step 4>

6. Repeat steps 2 to 5 for each remaining donor color.

Setting Exposure

The most important factor to take into account when setting exposure for proofing media is stability. The density vs. exposure curve is not linear. At some points, a small change in wpower can lead to a large change in density of the proofing media. Setting wpower to a value in this range will lead to a very unstable machine configuration.

The procedure described here has been found to provide a consistent, repeatable way to set exposure that gives the necessary machine-to-machine consistency on any given batch of media. It also gives a high degree of immunity to changes or drift in head power or focus, and also provides good latitude for banding.

You will have to perform the following steps once per donor color.

Also note that drum speeds for Imation proofing media are fixed in order to meet imaging time specifications.

1. Run the Splot wpower script-using plot 12 (100% tint) starting at 9W to 18.5W in increments of 0.5W. for custom colors blue and green start at 4W to 19W in increament of 1W.
2. Measure the density of each strip in the wpower series using an X-Rite 938 or 528 spectrodensitometer, choosing the Status T filter set.

   Take at least three density measurements of each strip and use the average value of the three. See appendix B: "seeting the X-rite 938 or 528 for averaging".
3. Examine the measured density vs. wpower. You should see the density increasing with wpower until it "plateaus". It may begin to decrease slightly again if the media has become overexposed. To determine the correct exposure for Custom Colour Blue and green use the exposure setup spreadsheet which can be found on the Techplanet at: http://techplanet.creo.com/proofing/trendsetter_spectrum/nav/media_matchprint.htm#imation_head_setup.

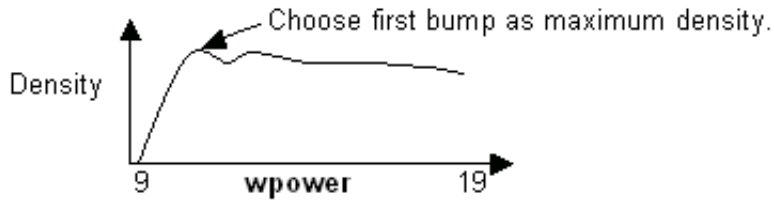
   Make sure to use the correct Exposure Setup Spreadsheets, which are meant for the KPG Matchprint GT media (Gen.3)

   It is helpful to plot the values in Excel or other plotting package. It is also very helpful to mentally, or with a pencil, draw a curve through the data, which will help to distinguish between the true trend in the exposure series and simple "noise" fluctuations in the density measurements. (See Figure 1 on page 8).

4. Determine the maximum density.

(Dmax is about 1.30 in the example below.)

On Magnenta HD and Custom Colours the Density vs. Exposure curve might have two higher density points as shown in the graph bellow. If the density drop between the two highest densities is less than 0.05 choose the first bump as maximum density. If the density drop is more than 0.05, use the second bump as maximum density.



5. Determine the wpower that gives a density 0.02 lower than the maximum density. In some cases there will be two wpowers, which give densities 0.02 lower than maximum. Choose the wpower that is lower than the wpower at maximum density.

   (In the example that follows, wpower is 14.7 W, not 19.5W)

6. Calculate the correct wpower by multiplying the wpower found in step 5 by a factor of 1.2 (In the example that follows, 14.7 W x 1.2 = 17.64W.)

Example

Example density data for Cyan is given in Table 1, and graphed in Figure 3.

Table 1. Measured Cyan density vs wpower

wpower	Density
11	1.083
11.5	1.129
12	1.171
12.5	1.189
13	1.221

Table 1. Measured Cyan density vs wpower

wpower	Density
13.5	1.238
14	1.264
14.5	1.275
15	1.292
15.5	1.293
16	1.301
16.5	1.299
17	1.295
17.5	1.305
18	1.293
18.5	1.284
19	1.289
19.5	1.282
20	1.281
20.5	1.280

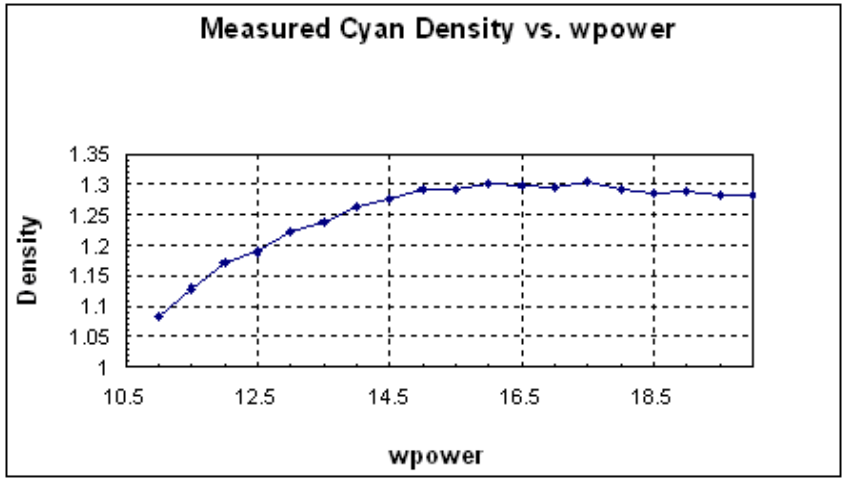


Figure 3. Measured density vs. wpoere for cyan , sung KPG Matchprint proofing media

From the graph, and the table, the peak density is about 1.30. Here is where a smoothed curve is helpful to help determine whether the peak value is just a measurement spike. In this case, it is not.

We need the wpower corresponding to a density 0.02 less than the peak, namely 1.28. This is between 14.5 and 15W, and a little closer to 14.5. Select 14.7 W.

There is a second wpower corresponding to 1.28, but it occurs at higher wpower, near 19.5W. Ignore this one.

Calculate the correct wpower setting:

14.7 W x 1.2 = 17.64W

7. If the density measurements did not reveal an obvious shoulder and plateau in the density vs. wpower data, repeat the exposure series and extend it to higher or lower powers as necessary.
8. Enter the calculated wpower value using the following commands:

   set hdm <n> wpower <value calculated>
9. Repeat steps 1 to 8 for each remaining donor color.

Beam Balancing (If Necessary to Reduce Banding)

It should not usually be necessary to perform beam balancing in order to get acceptable image quality.

If necessary run the Splot Bmslope script, using plot 12 and 50, starting at -10 to 10 in increments of 2. Laminate series and select the Bmslope value with the least banding.

Enter best value using command: set hdm <n> bmslope <value selected>

Repeat this for Bmcurve.

Note: Bmslope and Bmcurve are different for each donor!

Check Image Quality

Check image quality after the bmslope and bmcurve series.

1. Enter the command media <n> (to select the media last improved)
2. Enter the command stroke cal
3. Perform plot 1 expose.
4. Check image quality.

Setting the X-rite 938 or 528 for averaging

1. Simultaneously press FUNCTION and ILLUM.
2. Calibrate? Select NO (by pressing FUNCTION).
3. Set Averaging?Select YES (by pressing DIF).
4. Select the number of averages desired. To increment the number, hold DIF and press ILLUM. To decrement the number, hold DIF and press FUNCTION. Recommended number of averages is 3.
5. Exit by simultaneously pressing FUNCTION and ILLUM.