Easy Match® QC Lesson 12

Averaging Readings

Suppose you are measuring a sample, such as corduroy, which is very directional. You've decided that the best way to measure it, taking its directionality into account, is to make four readings of the sample, rotating the fabric 90° between readings so that the instrument looks at it from all directions. The four readings will be averaged into the final result, which you will report. Configure the averaging and read the sample as described below.

- 1. **Open a new job** and configure its Color Data Table to display CIELAB for D65/10°. You may configure the other parameters however you like.
- 2. Open the **Measurements** menu and select **Average** so that it is checked.
- 3. Open the **Options** menu and select **Average Method**. The Average Method screen appears.

Average Method	X
Display Method	
C Scale	
C Index	
C Spectral	
Average Method	
Continuous	
CnofN 2	
Use Sample presentation prompts (Timing of timed r	eading ignored)
Sample presentation prompt (before reading 1)	1
<u> « >>1</u>	
<	
	OK

a. In the Display Method area, click the radio button next to Scale and choose CIELAB as the Scale Type and D65/10 as the Illuminant/Observer. This ensures that the data shown on the Average Reading screen uses the same parameters you are displaying in your Color Data Table.

Average	Method			×
Display Mett C None Scale C Index C Spectral Average Met C Continuo C n of N Use Sam	Scale Type	▼ ats (Timing of ti	Illuminant/Observer	
<u>>)</u>	resentation prompt (bel		OK	
			Cance	:

b. In the Average Method area, click the radio button next to n of N and select 4 as the number of readings to average.

-Display Me	Method			-
C None C Scale C Index C Spectral Average Mi C Continue C n of N	Scale Type CIELAB ethod ous	•	Illuminant/0	•
Sample ;	mple presentation prompt presentation prompt (bef	ore reading 1		gnoredj

c. At the bottom of the screen, check the boxes next to both "Use Sample presentation prompts" and "Show prompts when measuring standards." The white box for Sample presentation prompt (Before reading 1) will be activated. Type "Place sample at port" into this box.

Average Method	X
Display Method C None Scale Type C Scale C Index C Spectral Average Method	Illuminant/Observer D65/10 💌
Continuous ∩ n of N 4 ✓ Use Sample presentation prompts (Timing of	timed reading ignored)
Sample presentation prompt (before reading 1)
	OK Cancel

d. Click the right arrow (>>) button. The text above the box will change to "Sample presentation prompt (Before reading 2)." Type "Rotate sample 90 degrees" into this box.

Display Method C None Scale Type	Illuminant/Observer
© Scale CIELAB © Index © Spectral	▼ D65/10 ▼
Average Method C Continuous n of N 4 V Use Sample presentation promp	ots (Timing of timed reading ignored)
Sample presentation prompt (bel	fore reading 2)
Show prompts when measuring	g standards
	OK
	Cancel

- e. Click the right arrow button to move to the prompt boxes for readings 3 and 4. Enter "Rotate sample 90 degrees" for these prompts, as well.
- f. Click **OK** to close the Average Method screen.
- 4. **Initiate the reading of a standard**. The Average Reading screen appears as follows. Note the prompt to place the sample at the port shown at the bottom of the screen.

Average Standard Deviation	0.000		0.000	Read
	0.000	0.000	0.000	
Range	0.000	0.000	0.000	Print

5. **Read the Sample.** Place the sample at the measurement port and click **Read**. The standard is read and the values for the reading are placed in the Average Reading spreadsheet. Note the prompt to rotate the sample 90 degrees shown at the bottom of the screen.

		L×	a*	b*	- r	
	verage	44.313	42.091	22.522		Read
and the second sec	rd Deviation	0.000	0.000	0.000		Print
	lange	0.000	0.000 42.091	0.000		
						3
						3

a. Rotate the sample 90 degrees and replace it at the port. Click **Read**. The standard is read again and its values placed in the Average Reading spreadsheet.

× 44.319 0.000 0.013 44.313 44.326	a* 42.099 0.000 0.017 42.091 42.107	b* 22.555 0.000 0.066 22.522	Read Print
0.000 0.013 44.313	0.017 42.091	0.066	Print
44.313	42.091		
		22.522	
44.326	42 107		
	42.107	22.588	- Digit Precisio

b. Per the prompt, rotate the sample 90 degrees again and replace it at the port. Click **Read**. The standard is read for the third time and its values placed in the Average Reading spreadsheet.

	L×	a×	b*	 	Delete
Average	44.316	42.096	22.544		Read
Standard Deviation	0.009	0.010	0.038	-	Print
Range	0.017	0.017	0.066	-	CHER
1 of 4	44.313	42.091	22.522		
2 of 4	44.326	42.107	22.588		Digit Precisio
3 of 4	44.309	42.090	22.523		and the second second
				-	3

c. Per the prompt, rotate the sample 90 degrees again and replace it at the port. Click **Read**. The standard is read for the fourth time and its values placed in the Average Reading spreadsheet.

	L×	a*	b* 🔺	Delete
Average	44.315	42.088	22.534	Read
Standard Deviation	0.008	0.018	0.038	Print
Range	0.017	0.044	0.087	
1 of 4	44.313	42.091	22.522	
2 of 4	44.326	42.107	22.588	D: 10 - 11
3 of 4	44.309	42.090	22.523	Digit Precision
4 of 4	44.312	42.063	22.502	3 -

d. Click the **Average** button. The Average Reading screen closes and the averaged reading is placed into the job as a single standard measurement.

	ID	L*	a×	b*		
Star	ndard 1	44.31	42.09	22.53		
						1000

e. Right-click the averaged standard in the Job Tree and select **Properties**. The Standard Properties screen appears.

	Standard 1			
Product ID:				
Extra ID:				
				Tolerances
				Hitch
6	1	L×	a×	b* ▲
Standard	Deviation	0.008	0.018	0.0:
Ra	nge	0.017	0.044	0.0
∡ Memo				

f. Note that the standard deviation and range for the 4 readings made and averaged are still available. When you initialize a sample reading, the same sequence of events is observed.