Dispenser Calibration Instructions

for the Shercolor Web Application with

Fluid Management Tinters

(Using a manual scale)

This document is written to provide information necessary to perform Tinter calibration for Shercolor Web systems configured with Oracle Operating System.

Revisions

Date	Revision Number	Reason for Revision	Modified By
20190415	Initial	Initial	Crz687
20200824	1	Update WPG values on page 25	Crz687
20211011	2	Update WPG on page 25	Crz687
20220310	3	Update WPG on page 25	Crz687

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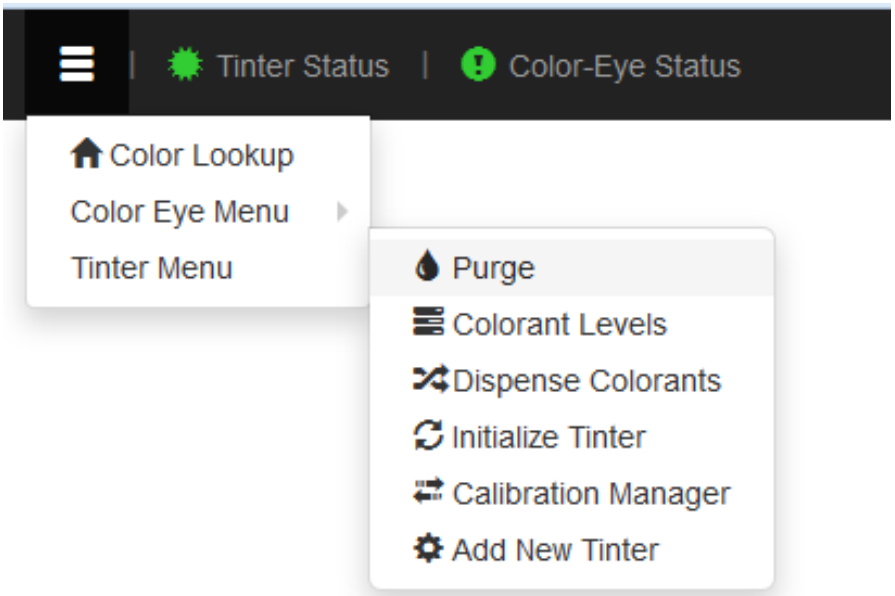
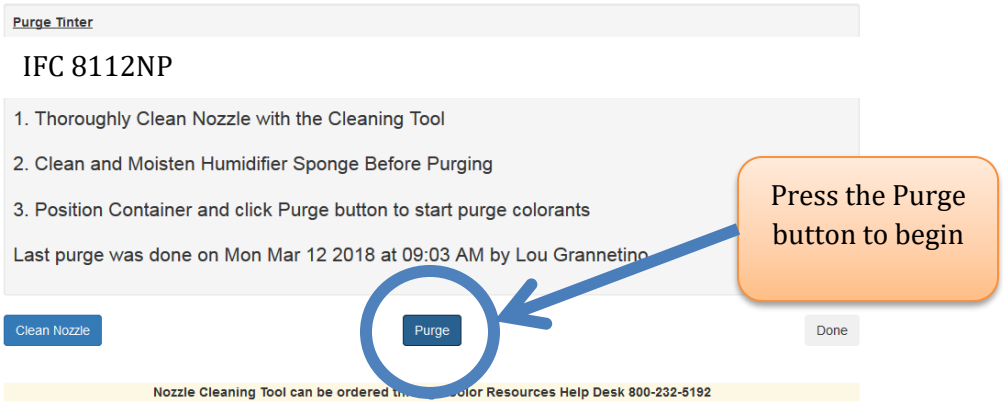
PREPARATION PRIOR TO PERFORMING THE CALIBRATION

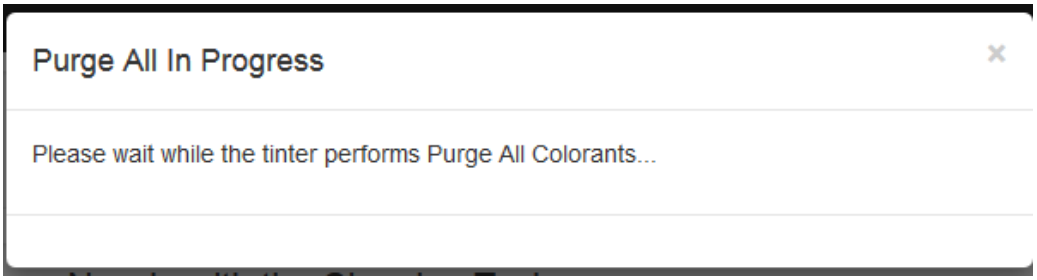
In preparation to perform the tinter calibration:

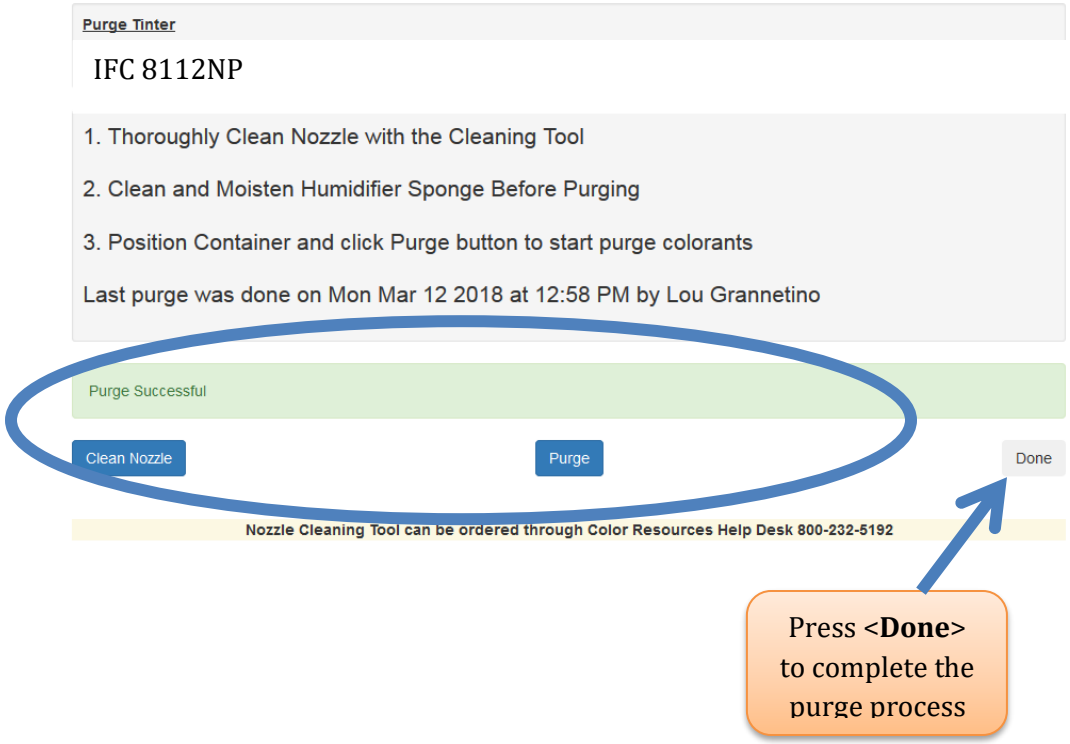
1. Perform a **Purge** function. This can be done by selecting the Drop-down menu in the upper left corner of the Shercolor screen
   a. Select Tinter Menu
   b. Select Purge



2. Follow the on-screen instructions displayed below.







3. **Logoff of Sher-Color Web after purging the colorants. The calibration will take place using the program FM_SERVICE.**

4. Scale requirements
   - **a.** The scale needs to weigh in grams
   - **b.** The scale needs to display 6 characters, two after the decimal point ex. 1234.56g.

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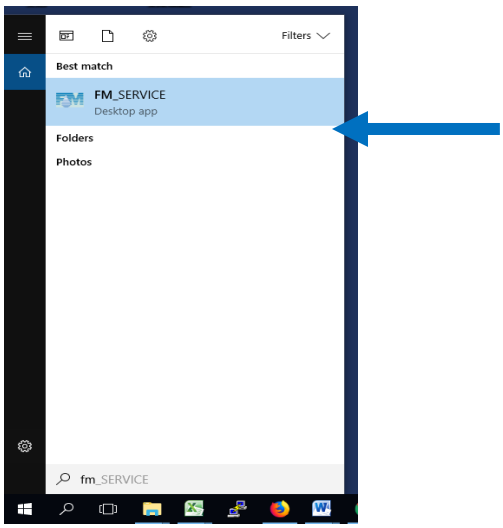
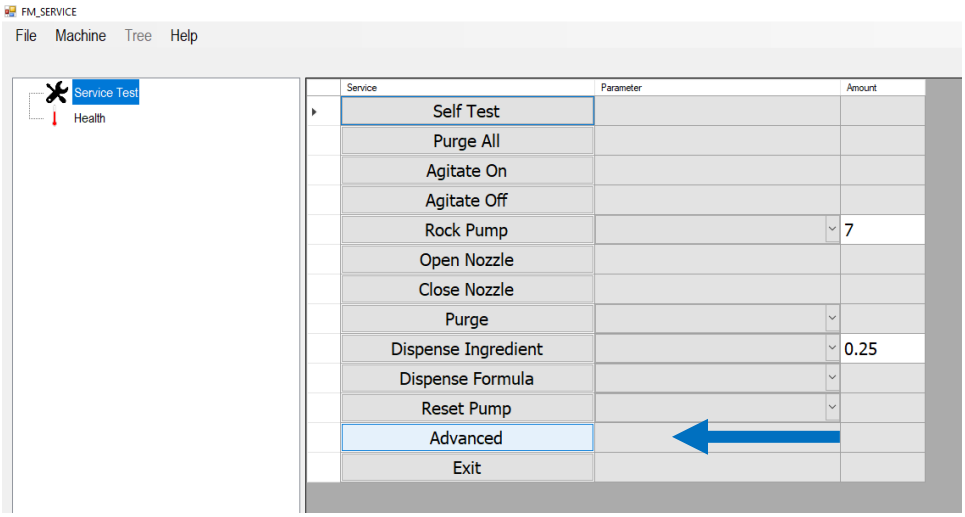
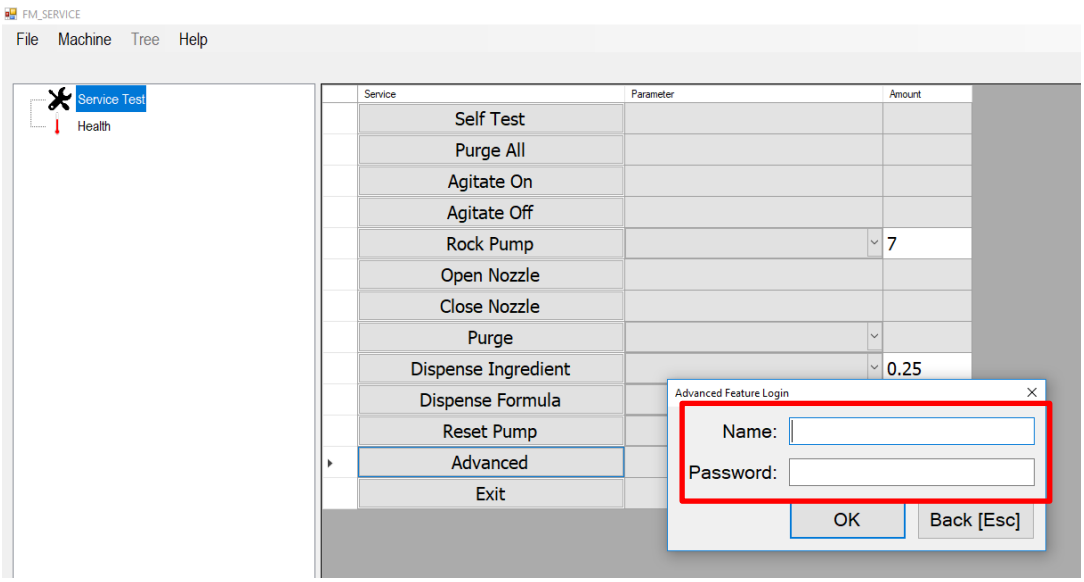
HOME OFFSET AND PUMP POSITION

1. Access the Fluid Management calibration program, **FM_SERVICE**. From the Windows computer <**Start**> button, type FM_SERVICE in the search window. FM_SERVICE will be displayed. The program was loaded to the Windows computer at the time the Shercolor Web application was configured.

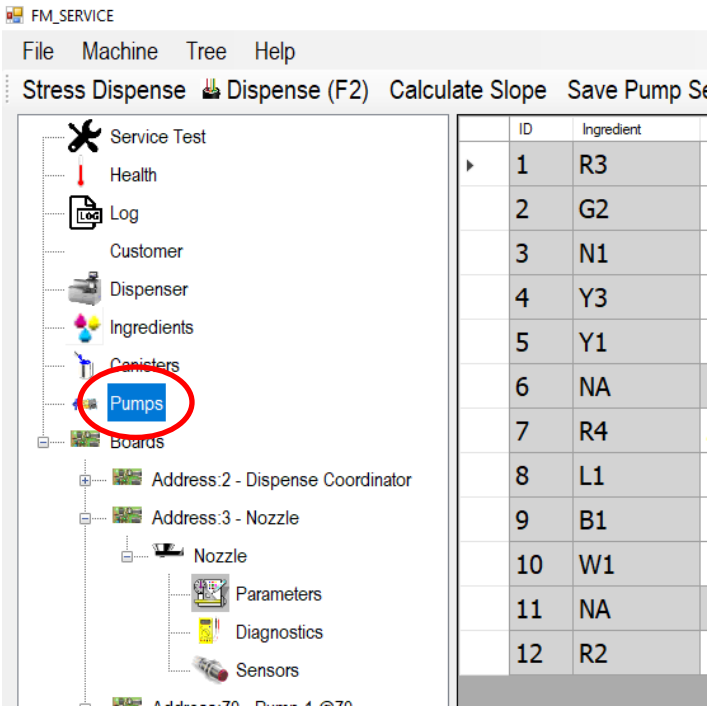




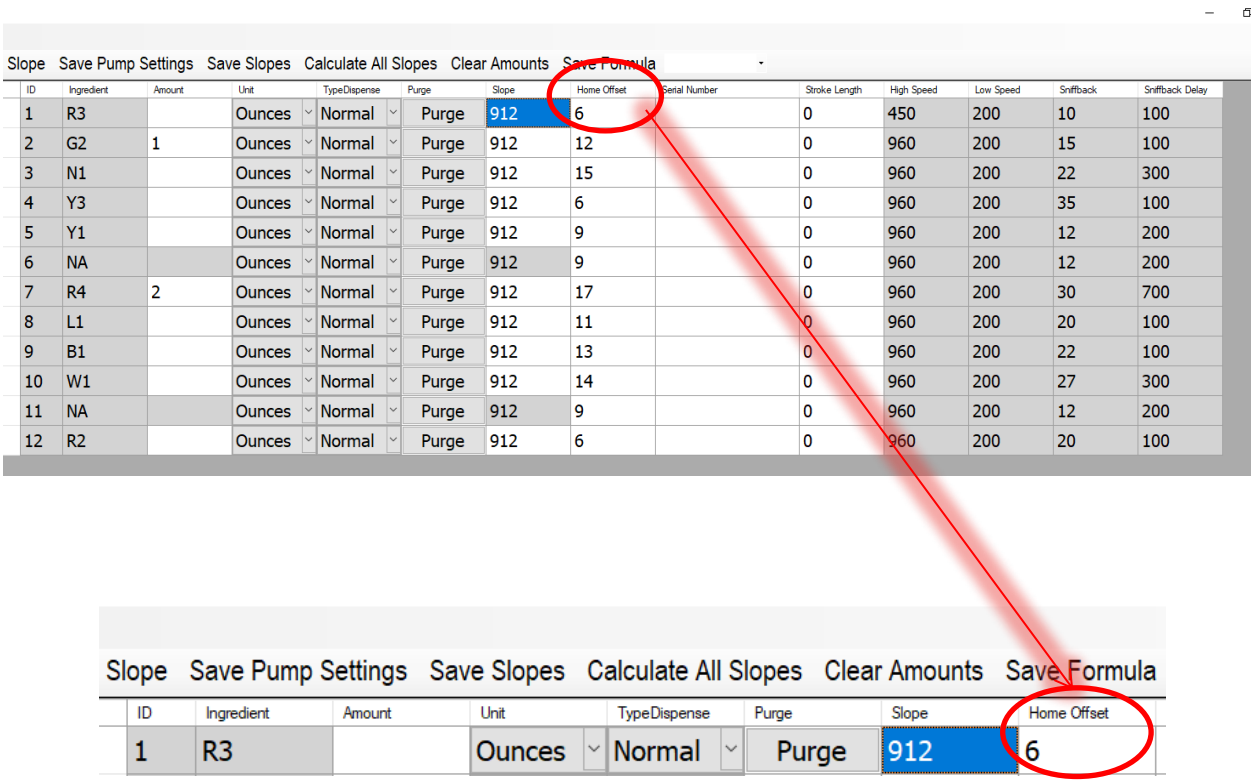
2. The FM_SERVICE window will be displayed. Click on **Advanced** to continue.



3. Input ***service*** in both Name and Password fields and then press <OK>



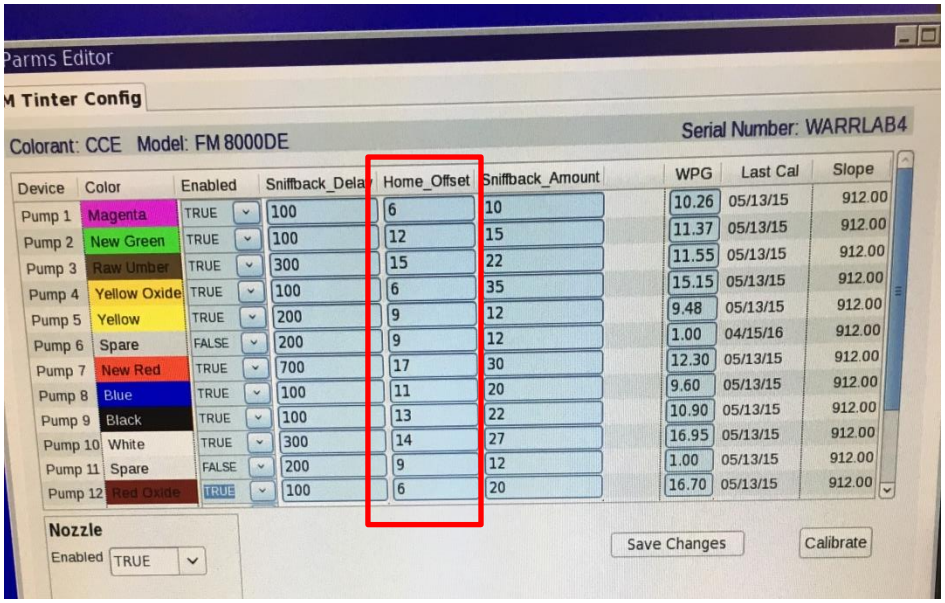
4. Click on Pumps from the left-hand menu options



5. The Pumps screen will display each pump and parameters as they are currently set. The most important parameter that will need to be confirmed or adjusted prior to beginning the calibration is the **Home Offset**.

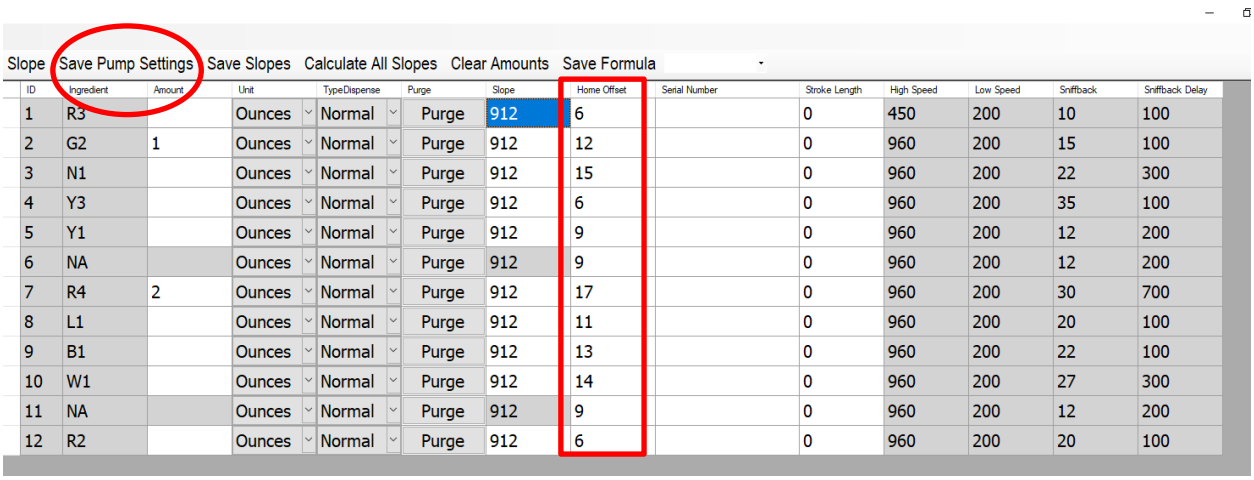
6. The Home Offset values for each pump can be retrieved from:
   a. The last two digits printed on the actual pump. See below for example.

b. The information from the calibration files, found in Parms Editor of the Sher-Color computer, if changing from a Sher-Color computer to Sher-Color Web.



c. The Specification sheet provided by the manufacturer. See below for example.

7. Once the Home Offset values have been confirmed, any adjustments required will be made in the FM_SERVICE program



ID	Ingredient	Amount	Unit	TypeDispense	Purge	Slope	Home Offset	Serial Number	Stroke Length	High Speed	Low Speed	Sniffback	Sniffback Delay
1	R3		Ounces	Normal	Purge	912	6		0	450	200	10	100
2	G2	1	Ounces	Normal	Purge	912	12		0	960	200	15	100
3	N1		Ounces	Normal	Purge	912	15		0	960	200	22	300
4	Y3		Ounces	Normal	Purge	912	6		0	960	200	35	100
5	Y1		Ounces	Normal	Purge	912	9		0	960	200	12	200
6	NA		Ounces	Normal	Purge	912	9		0	960	200	12	200
7	R4	2	Ounces	Normal	Purge	912	17		0	960	200	30	700
8	L1		Ounces	Normal	Purge	912	11		0	960	200	20	100
9	B1		Ounces	Normal	Purge	912	13		0	960	200	22	100
10	W1		Ounces	Normal	Purge	912	14		0	960	200	27	300
11	NA		Ounces	Normal	Purge	912	9		0	960	200	12	200
12	R2		Ounces	Normal	Purge	912	6		0	960	200	20	100

8. Double-click the Home Offset field that you want to change. Input the correct value, and then press <**Enter**> to set the value in the field.

9. When all Home Offset values have been confirmed or updated, press the <**Save Pumps Settings**> button along the top options. The tinter will then initialize and change the pumps to the new Home settings.

10. Purge all colorants before beginning calibration steps. This will move the pumps to the new Home Offset positions that were changed in the previous steps.

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FORMULA FOR CALIBRATION

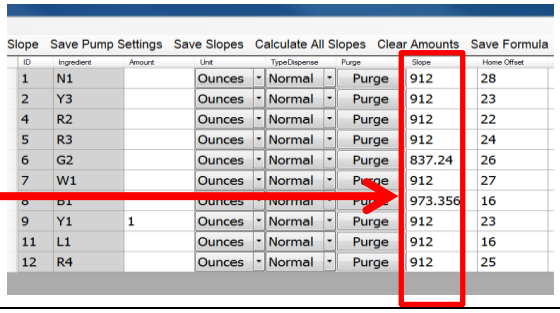
The calibration steps for Fluid Management Tinters requires manual calculations to determine the correct Slope values for each pump.

The formula pictured below indicates where to locate the number values for each variable of the formula

$$\frac{\text{Target}}{\text{Actual}} \times \text{Slope} = \text{New Slope}$$

The "Actual" value will be taken from the display on the scale after dispensing one ounce

	CCE	2020		
Code	**COLOR DESCRIPTION**	**WPG**	**Target**	**Specific Weight**
B1	CCE BLACK	10.93	38.73	1310
G2	CCE NEW GREEN	11.25	39.87	1348
L1	CCE BLUE	9.65	34.20	1156
N1	CCE RAW UMBER	11.50	40.75	1378
R2	CCE MAROON	16.45	58.29	1971
R3	CCE MAGENTA	10.15	35.97	1216
R4	CCE NC RED	12.25	43.41	1468
W1	CCE WHITE	17.00	60.24	2037
Y1	CCE YELLOW	9.40	33.31	1127
Y3	CCE DEEP GOLD	15.24	54.01	1826



ID	Ingredient	Amount	Unit	TypeDispense	Purge	Slope	Home Offset
1	N1		Ounces	Normal	Purge	912	28
2	Y3		Ounces	Normal	Purge	912	23
4	R2		Ounces	Normal	Purge	912	22
5	R3		Ounces	Normal	Purge	912	24
6	G2		Ounces	Normal	Purge	837.24	26
7	W1		Ounces	Normal	Purge	912	27
8	B1		Ounces	Normal	Purge	973.356	16
9	Y1	1	Ounces	Normal	Purge	912	23
11	L1		Ounces	Normal	Purge	912	16
12	R4		Ounces	Normal	Purge	912	25

Slope values displayed on the FM_SERVICE program screen

CALIBRATION STEPS TO BE PERFORMED USING FM SERVICE

11. Place scale and cup under dispenser nozzle
12. Tare the scale
13. Input the number 1 in the **Amount field** of the color you will be calibrating to indicate the one ounce to be dispensed
14. Press **<F2>** to dispense one ounce of colorant from FM_SERVICE
15. Record the value displayed on the scale
16. The amount displayed on the scale is to be used for the "**Actual**" value in the formula
17. Perform the calculations

$$\frac{\textbf{Target}}{\textbf{Actual}} \textbf{ x Slope = New Slope}$$

18. After performing the calculations, input the value of the answer (New Slope) in the Slope field in FM_SERVICE of the colorant being calibrated
19. Press the **<Save Slopes>** button across the top options
20. Check to determine if the new slope will achieve a target dispense close to the recommended target value (+/- .2)
21. Tare the scale
22. Press <F2> to dispense one ounce
23. Record the amount displayed on the scale
24. Subtract the actual value displayed on the scale from the recommended target value.
    i. If the result is greater than +/- .2, then calibrate the colorant again.
    ii. If the result is within +/- .2, then the calibration was successful
25. Continue to the next colorant and perform steps 11 through 24.

26. When all colorants have been calibrated, press <Save Slopes> to complete the calibration process

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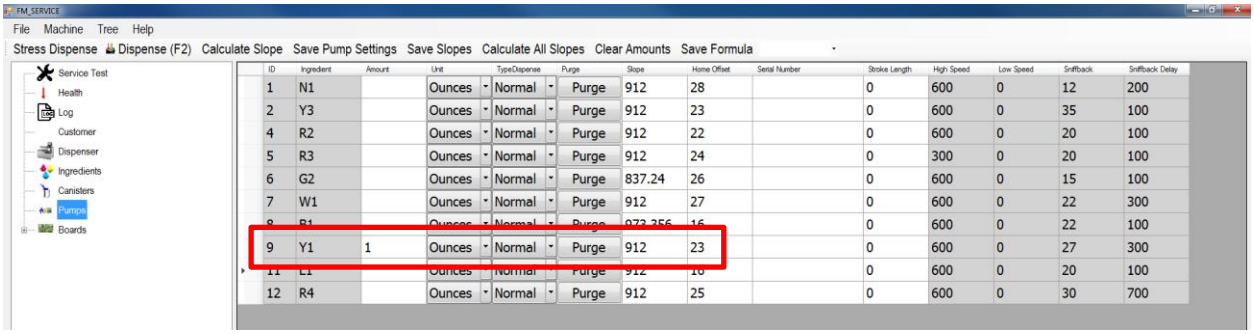
EXAMPLE OF CALIBRATION STEPS

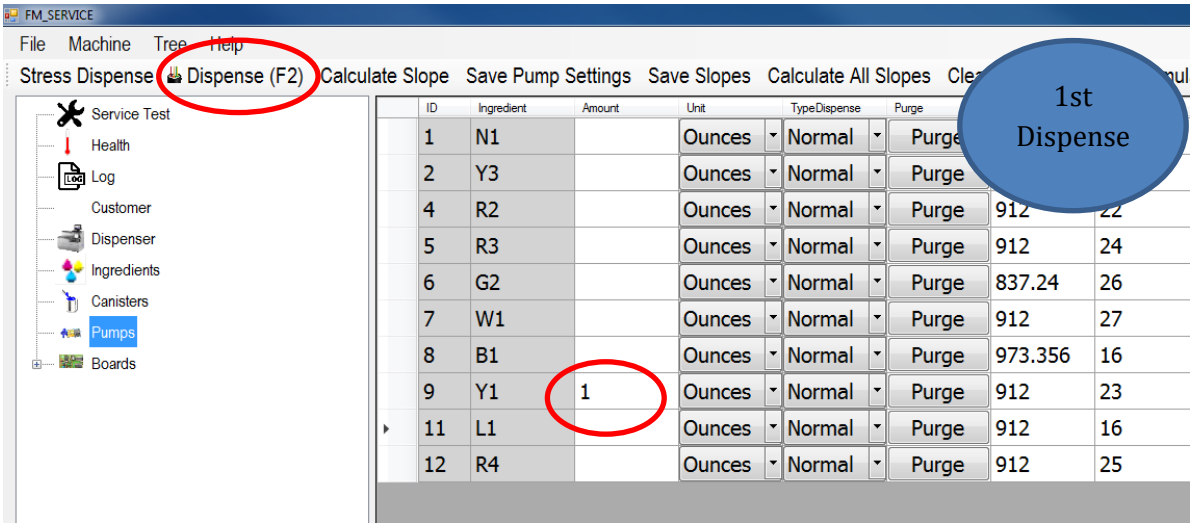
This example will step through calibrating the Yellow colorant, denoted as Y1. For this example, the Home Offset values is shown as 23, and will be considered the correct value. The initial slope is set at 912. This value will be used for the initial formula calculations.



ID	Ingredient	Amount	Unit	TypeDispense	Purge	Slope	Home Offset	Serial Number	Stroke Length	High Speed	Low Speed	Sniffback	Sniffback Delay
1	N1		Ounces	Normal	Purge	912	28		0	600	0	12	200
2	Y3		Ounces	Normal	Purge	912	23		0	600	0	35	100
4	R2		Ounces	Normal	Purge	912	22		0	600	0	20	100
5	R3		Ounces	Normal	Purge	912	24		0	300	0	20	100
6	G2		Ounces	Normal	Purge	837.24	26		0	600	0	15	100
7	W1		Ounces	Normal	Purge	912	27		0	600	0	22	300
9	Y1	1	Ounces	Normal	Purge	912	23		0	600	0	27	300
12	R4		Ounces	Normal	Purge	912	25		0	600	0	30	700

Tare the scale resets the display to zero

1. Place scale and cup under dispenser nozzle
2. Tare the scale



3. Input the number 1 in the Amount field to indicate the one ounce
4. Press **<F2>** to dispense one ounce of colorant from FM_SERVICE

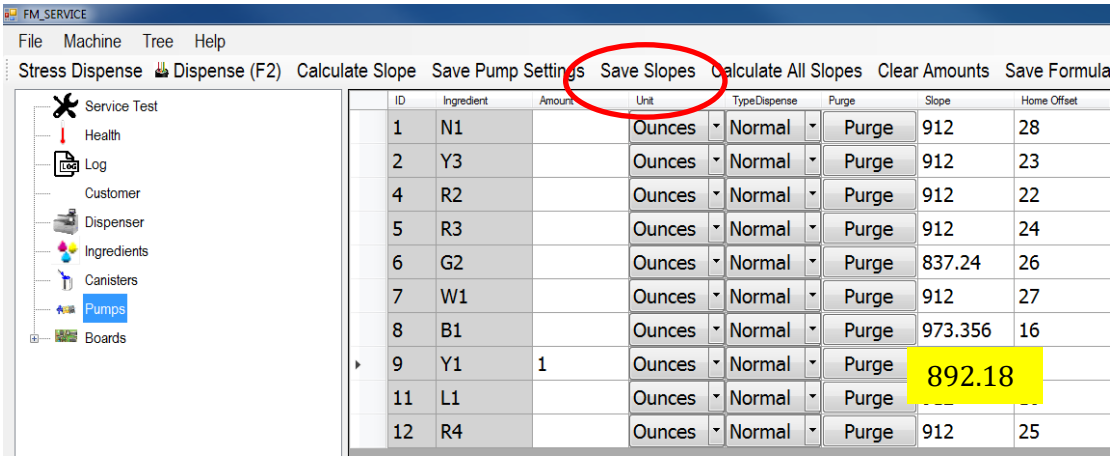
5. The first 1 ounce dispense displayed a weight of 34.05

6. Use the 34.05 as the “Actual” value in the formula below

$$\frac{\text{Target}}{\text{Actual}} \text{ X Slope = New Slope}$$

$$\frac{33.31}{34.05} \text{ X } 912 = 892.18$$

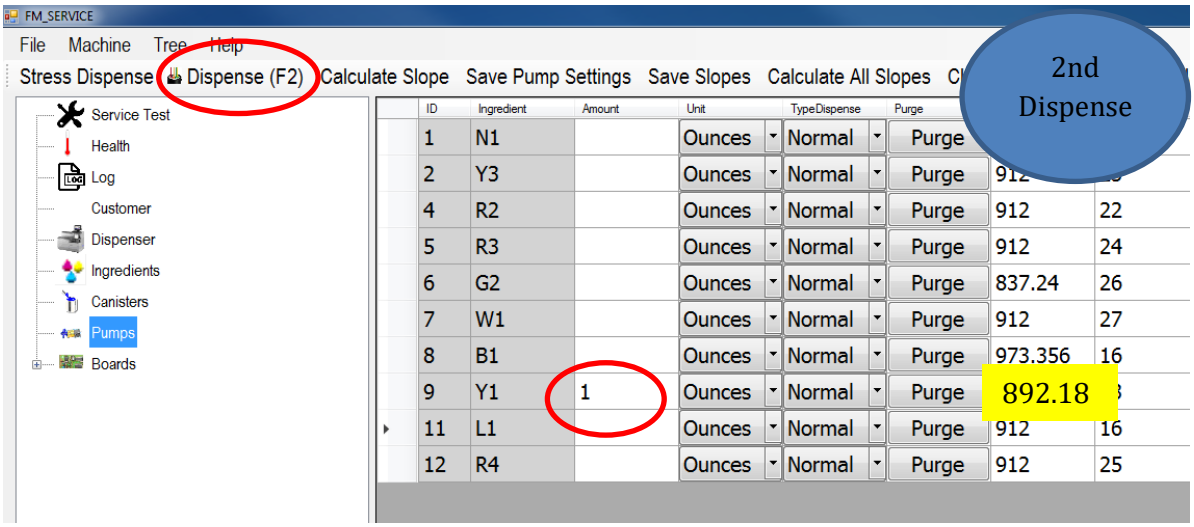
7. Input the new slope value of 892.18 in the Slope field for colorant Y1



8. Press the <Save Slopes> button along the top of the display

Tare the scale resets the display to zero

9. Tare the scale



10. Input the number 1 in the Amount field to indicate the one ounce
11. Press **<F2>** to dispense one ounce of colorant from FM_SERVICE

12. The second 1 ounce dispense displayed a weight of 34.54
13. Subtract the actual value displayed on the scale from the recommended target value.

i. If the result is greater than +/- .2, then calibrate the colorant again.

ii. If the result is within +/- .2, then the calibration was successful

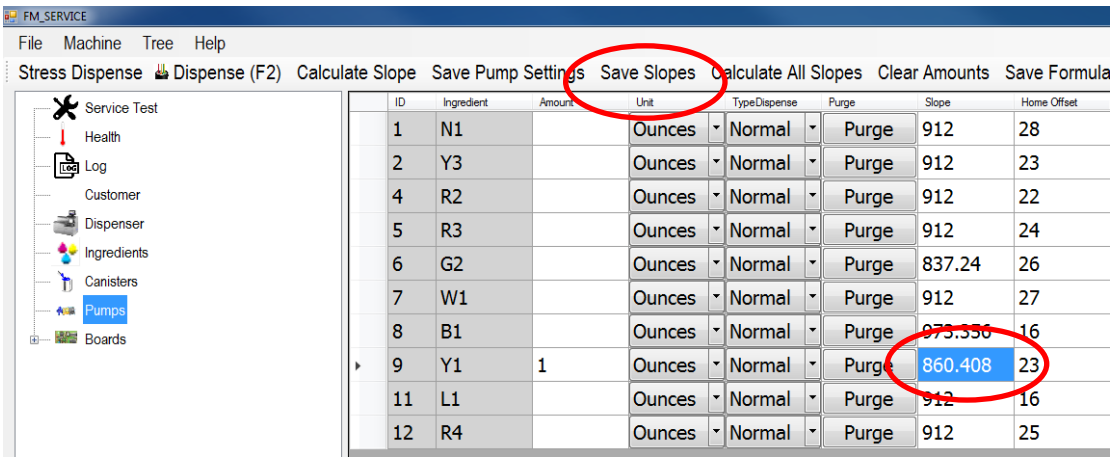
14. In this case 33.31 – 34.54 = -1.23 which is too far out of range. Another calculation and dispense will be necessary.

15. Use the 34.54 as the "Actual" value in the formula below

$$\frac{\text{Target}}{\text{Actual}} \text{ X Slope = New Slope}$$

$$\frac{33.31}{34.54} \text{ X } 892.18 = 860.408$$

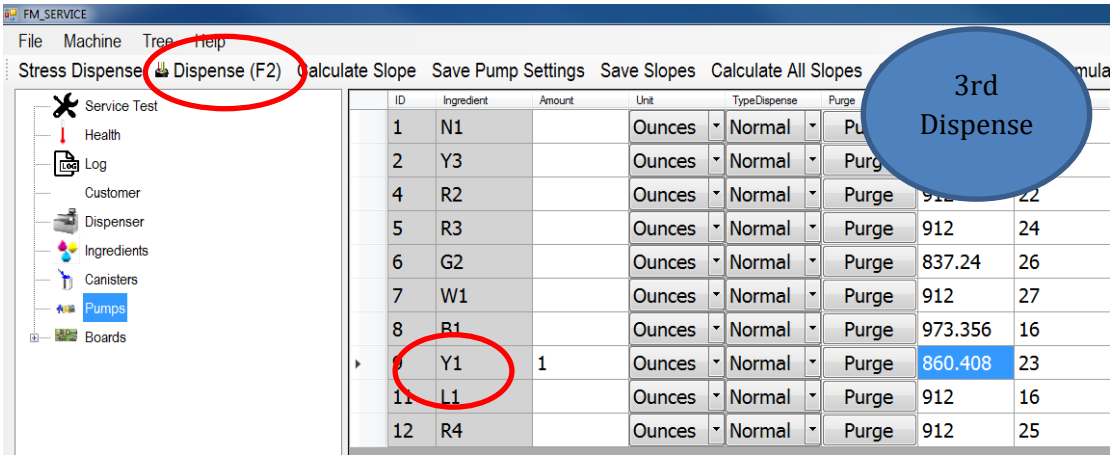
16. Input the new slope value of 860.408 in the Slope field for colorant Y1



17. Press the <Save Slopes> button along the top of the display

Tare the scale resets the display to zero

18. Tare the scale



19. Input the number 1 in the Amount field to indicate the one ounce

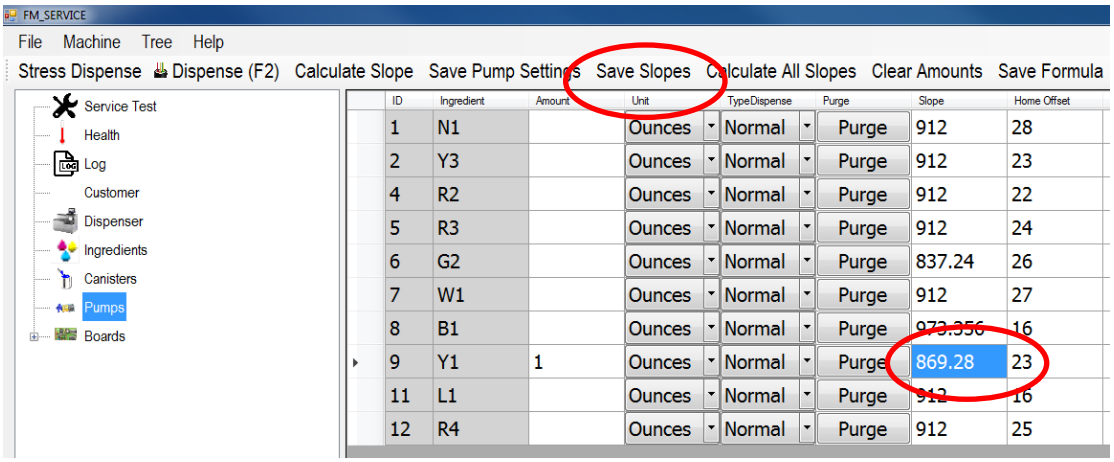
20. Press **<F2>** to dispense one ounce of colorant from FM_SERVICE

21. The third 1 ounce dispense displayed a weight of 32.97
22. Subtract the actual value displayed on the scale from the recommended target value.
    i. If the result is greater than +/- .2, then calibrate the colorant again.
    ii. If the result is within +/- .2, then the calibration was successful
23. In this case 33.31 – 32.97 = .34 which is too far out of range. Another calculation and dispense will be necessary.
24. Use the 32.97 as the "Actual" value in the formula below

$$\frac{\text{Target}}{\text{Actual}} \text{ X Slope = New Slope}$$

$$\frac{33.31}{32.97} \text{ X } 860.408 = 869.28$$

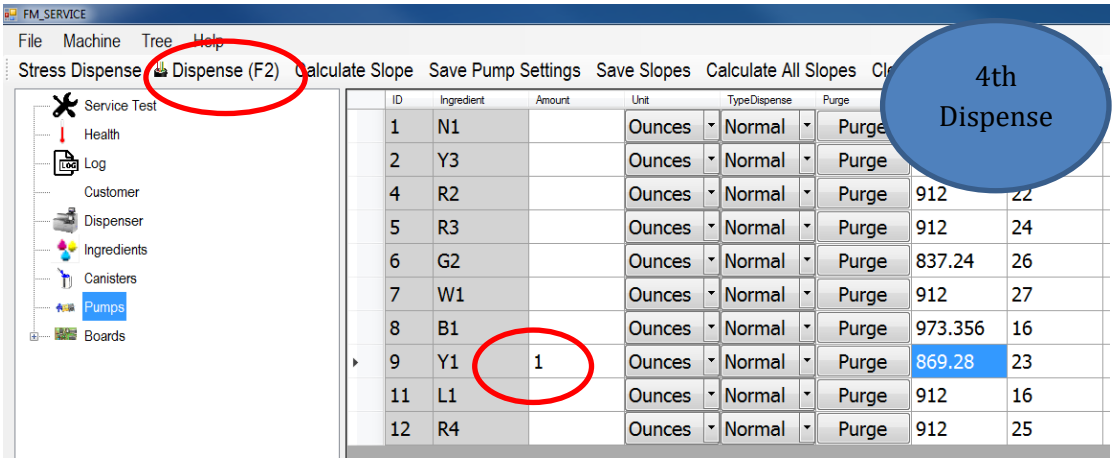
25. Input the new slope value of 869.28 in the Slope field for colorant Y1



26. Press the <Save Slopes> button along the top of the display

Tare the scale resets the display to zero

27. Tare the scale



28. Input the number 1 in the Amount field to indicate the one ounce

29. Press **<F2>** to dispense one ounce of colorant from FM_SERVICE

30. The forth 1 ounce dispense displayed a weight of 33.16

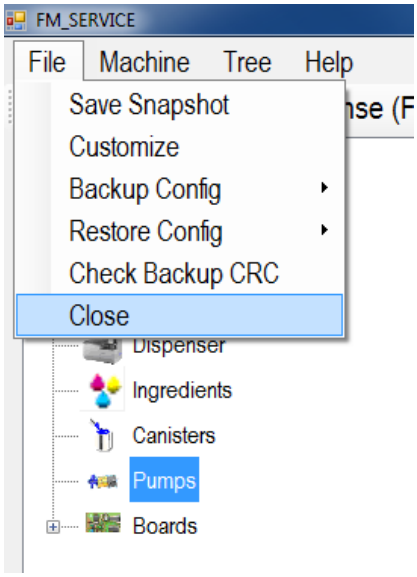
31. Subtract the actual value displayed on the scale from the recommended target value.

    i. If the result is greater than +/- .2, then calibrate the colorant again.

    ii. If the result is within +/- .2, then the calibration was successful

32. In this case 33.31 – 33.16 = .15 which is now in range. The calibration for this colorant is now complete. The accurate slope for this colorant is 869.28. This particular colorant required 4 slope adjustments to bring the dispensing into the correct range.

33. When all colorants have been calibrated, press <Save Slopes> to complete the calibration process



34. To exit FM_SERVICE, click on the <File> button in the upper left-hand corner of the screen, and select <Close>.

This completes the Fluid Management tinter calibration process for Shercolor Web systems.

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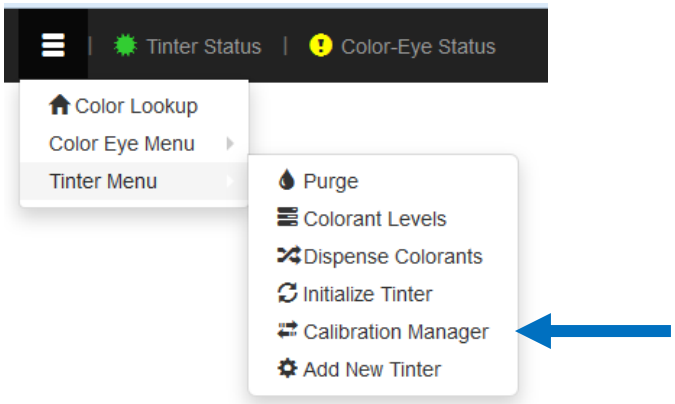
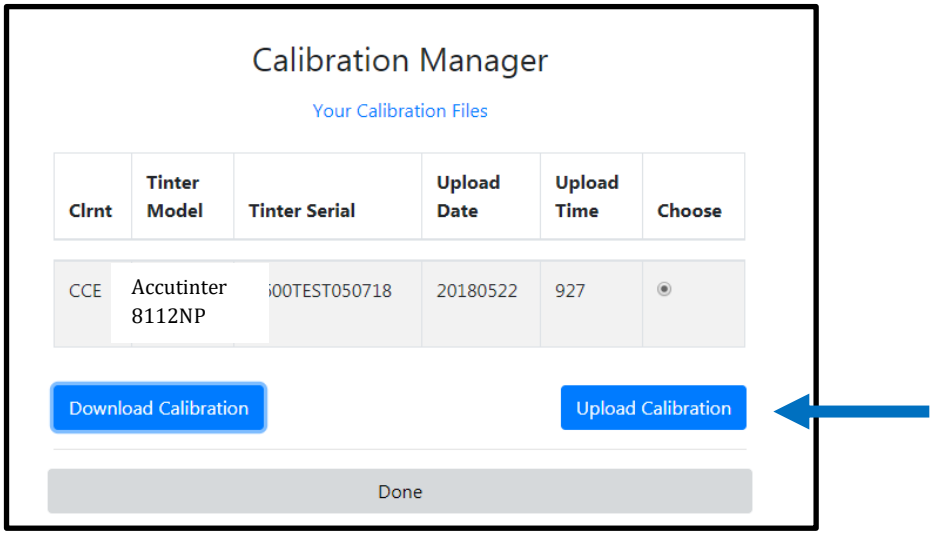
UPLOAD CALIBRATION FILES

Upon successful calibration and testing of all colorants, upload the calibration to the Sher-Color Web system.



3. From the Main Menu of the Shercolor Web screen,
   a. Select Tinter Menu
   b. Select Calibration Manager



4. Click the **Upload Calibration** button to send the calibration files to Sherwin Williams.

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APPENDIX A: WPG CHARTS

CCE 2022				
Code	COLOR DESCRIPTION	WPG	Target	Specific Weight
B1	CCE BLACK	10.90	38.63	1306
G2	CCE NEW GREEN	11.40	40.40	1366
L1	CCE BLUE	9.65	34.20	1156
N1	CCE RAW UMBER	11.60	41.11	1390
R2	CCE MAROON	16.50	58.47	1977
R3	CCE MAGENTA	10.15	35.97	1216
R4	CCE NC RED	12.25	43.41	1468
W1	CCE WHITE	17.30	61.31	2073
Y1	CCE YELLOW	9.38	33.24	1124
Y3	CCE DEEP GOLD	15.20	53.86	1822

BACC 2022				
Code	COLOR DESCRIPTION	WPG	Target	Specific Weight
B1	BLACK	11.47	40.65	1375
L1	BLUE	11.80	41.82	1414
N1	RAW UMBER	12.05	42.70	1444
R2	RED OXIDE	17.50	62.01	2097
R3	MAGENTA	10.55	37.39	1264
W1	WHITE	17.68	62.65	2119
Y1	YELLOW	10.70	37.92	1282
R4	RED	11.15	39.51	1336
G2	GREEN	11.25	39.87	1348
Y3	YOX	15.65	55.46	1876

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