VYNTUS™ QUICK GUIDE

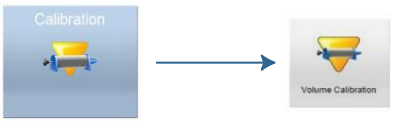
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Indirect Calorimetry with Mask Workflow Quick Guide

Vyntus™ ONE, Vyntus™ CPX

A. Volume Calibration of Digital Volume Transducer (DVT) Sensor *(prior to each test)*

1. Click on "**Calibration**" from the Home Page and then "**Volume Calibration**"



2. **For Vyntus™ CPX:** Perform **Automatic** Volume Calibration
   a. Connect the DVT to the Automatic Calibration Port WITH the gas sample Twin Tube connected to the DVT



   b. Click <**F1**> "**Start**" to start the "Automatic Volume Calibration"

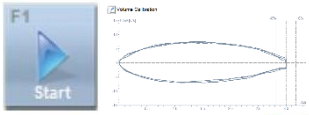


For Vyntus™ ONE (optional for Vyntus™ CPX): Perform **Manual** Volume Calibration

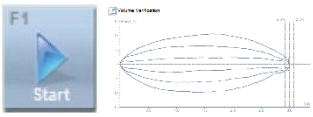
   i. For Vyntus™ ONE: Select device to be calibrated: Vyntus™ ONE CPET
   ii. Connect 3L syringe to DVT with sample line connected



   iii. Click <**F1**> "**Start**" and perform 3-5 strokes all at a medium flow rate (calibration)



   iv. Click <**F1**> "**Start**", select "**Verification**", and perform at least 3 strokes at varying flow rates between 0.5 – 12 L/s



3. After Volume Calibration/ Verification is completed, confirm successful with "Calibration result" graphic = "OK"

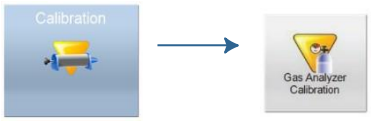


4. Click the "**Home**" button to return to the Home Page



B. Gas Analyzer Calibration for O_2 and CO_2 *(prior to each test)*

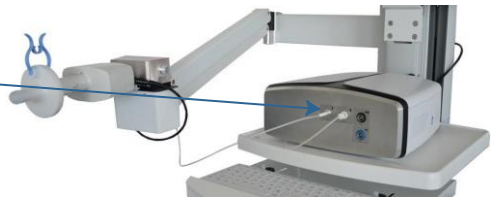
1. Click on "**Calibration**" from the Home Page and then "**Gas Analyzer Calibration**"



2. **For Vyntus™ CPX:** Connect the DVT to the Automatic Calibration Port on the Vyntus™ CPX with the gas sample Twin Tube connected to the DVT



For Vyntus™ ONE: Select device to be calibrated: Vyntus™ ONE CPET
Connect the Sample Line to the Cal Port on the Vyntus™ ONE
(unclip sample line from support arm if needed)



3. Click <**F1**> "**Start**" to start the Gas Analyzer Calibration



4. In case the following window appears, select the option "**Calibration**"



5. After the Gas Calibration is completed, confirm successful with "Calibration result" graphic = "OK"



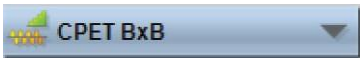
6. Click the "**Home**" button to return to the Home Page



C. REE Testing Workflow on system setup with CardioSoft*

NOTE: For REE workflow on system with Vyntus™ ECG or no ECG, see section 'D'.

1. Select the measurement program "**CPET BxB**"



2. Prepare the patient: explain REE test, test fit the mask (check for leak), remove mask
(Leave CardioSoft ECG lead wires unattached, unless ECG recording during REE is desired)

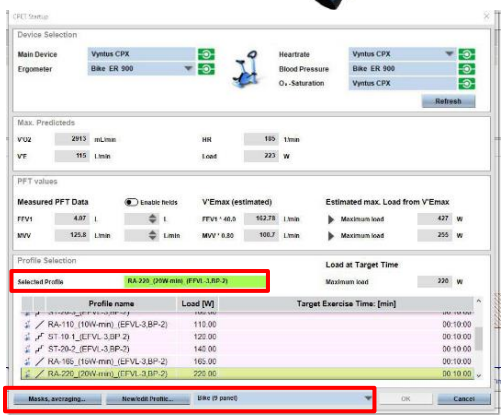


3. Place the DVT with the Sample Line/ Twin Tube anywhere (unmoving for zeroing phase)

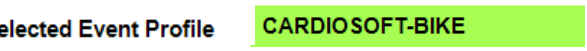


4. Click <**F1**> "**Start**" to open the 'CPET Startup' window





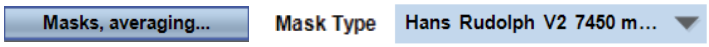
   a. Select Event **Profile** = "CARDIOSOFT-BIKE"



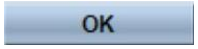
   b. Select **layout** ".US_REE":



   c. Select **mask type/size:**



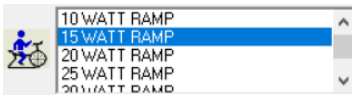
5. Click "**OK**" in the Startup window to start the REE test



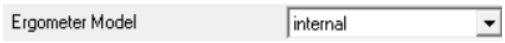
6. Click "**OK**" in the popup window to start the REE test



7. On other screen, select a bike protocol in CardioSoft and click "**OK**"



If no bike is connected, set 'Devices' setting in CardioSoft to 'internal':



8. SentrySuite™ advances from **Zeroing Phase** to **Check Phase**, use this time for patient to rest before advancing
   a. Have the patient **rest for 10-20 minutes** (using Check Phase timer) prior to connecting mask
   b. This is an initial baseline resting period used to setup stable REE data
   c. No data is stored during Check Phase

9. At end of initial resting period, **connect the mask** and confirm REE values on screen

10. Click "**F2:exercise**" in CardioSoft → **Test Phase** (SeS)



   a. **Test Phase:** Monitor metabolic and ventilation values for quality:
      REE "normal" values: VE = 6-10 L/min, VO_2/kg = 3-4, RER = 0.7-1.0, RR = 10-20 bpm
   b. Testing room should remain quiet with minimal interaction with patient
   c. Collect 20+ minutes of REE breathing data

11. Once REE data has been collected, click "**F3:recovery**" in CardioSoft → Recovery Phase (SeS)



12. 

Click <**F3**> "**Stop**" in SentrySuite™ to end the gas exchange data collection
(Step available pending program settings; SentrySuite™ transitions to Result Mode to review the CPET data)

13. Click "**F4:test end**" in CardioSoft when ready to end the ECG recording



   a. Click "**YES**" to confirm "Test end?", and then click "**OK**"
   b. Close the CardioSoft program by clicking the following icons



14. 

Click <**F4**> "**Edit**" in SentrySuite™ to begin a REE post-test data review

Steady State REE Post-test data review (use 'StState' tab in Edit Mode):

- Use '**Steady State**' markers to select zone(s) of stable VO_2 data *(see example on page 5)*
- Goal = **10+ minutes of stable REE data with <10 CV% (coefficient of variation) for VO_2 and REE**
- Add **technician comments** about the REE study

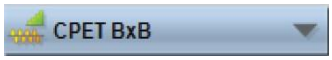
15. Select desired **REE report** to SAVE or PRINT

***Note about performing REE with or without ECG and CPET testing**

If switching between REE and/or CPET testing with and without ECG monitoring, it is important to configure settings for ECG/Data Source appropriately.

1. Open 'CPET BxB' and click 'Program', then 'Program Settings' from the top menu bar
2. Under the '**Local Configuration**' section, select '**ECG/Data Source**':
   a. For testing WITH ECG: select appropriate option for 'ECG Device' (i.e., "GE Cardiosoft CAM-USB ECG" or "Vyntus ECG")
   b. For testing WITHOUT ECG: select "No ECG device" for 'ECG Device'
3. Click 'OK', and then close and re-open the 'CPET BxB' program to apply updated settings

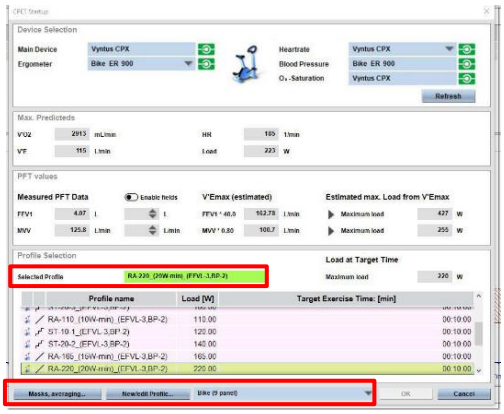
D. REE Testing Workflow on system setup with Vyntus™ ECG or No ECG*

1. Select the measurement program "**CPET BxB**" → 

2. Prepare the patient (explain REE test and test fit the mask; check for leak) → 

3. Place the DVT with the Sample Line/ Twin Tube anywhere (unmoving for zeroing phase) → 

4. Click <**F1**> "**Start**" to open the 'CPET Startup' window → 



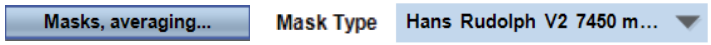
   a. Select Event **Profile** = ".US_REE_Mask"

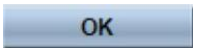


   b. Confirm **layout** selected is ".US_REE"



   c. Select **mask type/size:**



5. Click "**OK**" in the Startup window to start the REE test → 

6. Click "**OK**" in the popup window to start the REE test → 

7. SentrySuite™ advances from **Zeroing Phase** to **Check Phase**, use this time for patient to rest before advancing
   a. Have the patient **rest for 10-20 minutes** (using Check Phase timer) prior to connecting mask
   b. This is an initial baseline resting period used to setup stable REE data
   c. No data is stored during Check Phase

8. At end of initial resting period, **connect the mask** and confirm REE values on screen

9. Click <**F1**> "**Next Phase**" to go to the **Test Phase** → 

(If using Profile other than '.US_REE_Mask', may need to click <F1> additional times until Test Phase is reached)

a. **Test Phase:** Monitor metabolic and ventilation values for quality:
   REE "normal" values: VE = 6-10 L/min, VO_2/kg = 3-4, RER = 0.7-1.0, RR = 10-20 bpm
b. Testing room should remain quiet with minimal interaction with patient
c. Collect 20+ minutes of REE breathing data

10. Once REE data has been collected, click <**F1**> "**Next Phase**" to end the measurement → 

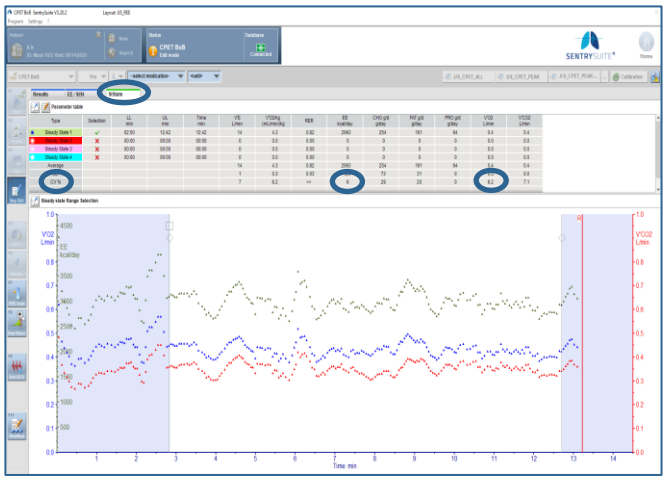
(If using Profile other than '.US_REE_Mask', may also need to click <F3> to stop measurement)

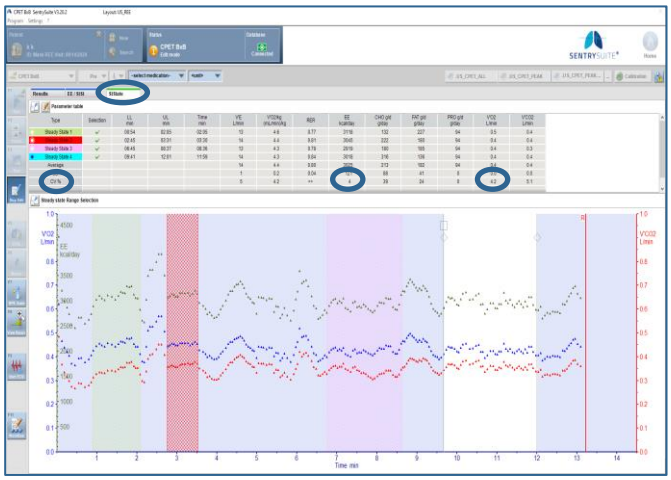
11. Click <**F4**> "**Edit**" to begin REE post-test data review of the **Steady State** REE data → 

Post-test data review (use 'StState' tab in 'Edit Mode'):

- Use '**Steady State**' markers to select zone(s) of stable VO_2 data

Examples: *1 large steady state zone* *4 combined steady state zones (avg)*





- Goal = **10+ minutes of stable REE data with <10 CV% (coefficient of variation) for VO_2 and REE**
- Add **technician comments** about the REE study

12. Select desired **REE report** to SAVE or PRINT

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