at least one processor operatively coupled to the image sensor to receive image data therefrom, wherein the at least one processor is configured to:

capture an image of the drip chamber using the image;

determine a subset of pixels within a plurality of pixels of interest, wherein each pixel of the plurality of pixels of interest is determined to be within the subset of pixels when there is a path to a baseline corresponding to the drip chamber; and

estimate a characteristic of a drop within the drip chamber in accordance with the subset of pixels of the plurality of pixels of interest.

22. The flow meter according to claim **21**, further comprising a non-transitory processor-readable memory having an operative set of processor executable instructions stored thereon, the non-transitory processor-readable memory is in operative communication with the at least one processor such that the operative set of processor executable instructions controls the operation of the at least one processor.

23. The flow meter according to claim **21**, wherein the baseline is a predetermined set of pixels within the image sensor.

24. The flow meter according to claim **21**, wherein the plurality of pixels of interest are identified by comparing the image to a background image.

25. The flow meter according to claim **21**, wherein the at least one processor is further configured to initialize a background image.

26. The flow meter according to claim **21**, wherein the at least one processor is further configured to update a background image using the image captured by the image sensor.

27. The flow meter according to claim **26**, wherein the background image is updated in accordance with:

$$P_{background,ij}=P_{background,i,j}(1-\alpha_{background})+\alpha_{background}P_{input,i,j},$$

28. The flow meter according to claim **21**, wherein the at least one processor is further configured to update an array of variances using the image captured by the image sensor.

29. The flow meter according to claim **28**, wherein the array of variances is updated in accordance with:

$$\sigma_{temp}^{2}=(P_{background,i,j}-P_{input,i,j})^{2}$$

$$\sigma_{backgund,i,j}^{2}=\sigma_{background,i,j}(1-\beta\text{background})+\beta_{background}\sigma_{temp}^{2}.$$

30. The flow meter according to claim **24**, wherein the at least one processor is further configured to update an array of integers in according with the image captured by the image sensor.

31. The flow meter according to claim **30**, wherein each integer of the array of integers corresponds to a number of updates of a pixel of the background image.

32. The flow meter according to claim **31**, wherein the comparison of the image to the background image only compares pixels within the image to pixels within the background image if a respective integer of the array of integers indicates a respective pixel within the background image has been updated at least a predetermined number of times.

33. The flow meter according to claim **30**, wherein the at least one processor is further configured to:

identify the drop in the image and a predetermined band near an edge of the drop; and

initialize the background image by setting each pixel of the background image to the image unless it is within the identified drop or the predetermined band near the edge of the drop.

34. The flow meter according to claim **33**, wherein the at least one processor is further configured to set a pixel of the background image to a predetermined value if a corresponding pixel of the image is within the identified drop or the predetermined band near the edge of the drop.

35. The flow meter according to claim **34**, wherein the corresponding pixel of the image has a location corresponding to a location of the pixel of the background image.

36. The flow meter according to claim **21**, wherein the at least one processor is further configured to determine the baseline corresponding to an opening of the drip chamber.

37. The flow meter according to claim **21**, wherein the at least one processor is further configured to determine whether each of the plurality of pixels of interest is within the subset of pixels if the respective pixel of the plurality of pixels of interest has a contiguous path back to the baseline of the drop forming at an opening of the drip chamber to determine if the subset of pixels are within the plurality of pixels of interest that corresponds to the drop.

38. The flow meter according to claim **21**, wherein the at least one processor is further configured to:

capture a first image using the image sensor;

identify the drop within the first image and a predetermined band near an edge of the drop;

initialize a background image by setting each pixel to the first image unless it is within the identified drop or the predetermined band near the edge of the drop;

set pixels within a region of the drop or within the predetermined band to a predetermined value;

initialize an array of integers; and

initialize an array of variances.

39. The flow meter according to claim **38**, wherein the at least one processor is further configured to update the background image, the array of integers, and the array of variances using at least one of the image and the first image.

40. The flow meter according to claim **21**, wherein the flow meter is configured to be remotely controlled by a monitoring client.

41. The flow meter according to claim **40**, wherein the monitoring client is a tablet.

* * * * *