1. A method of illuminating a sample plane, the method comprising:

providing an illumination subsystem, the illumination subsystem comprising an optical light source and at least one lens, having an original optic axis at an incident angle greater than 0° and less than 90° to a normal of the sample plane;

generating a reference illumination distribution on the sample plane using the illumination subsystem at a first tilt position; and

rotating the illumination subsystem about a pivot point between the optical light source and the sample plane along the original optic axis to a second tilt position having a further optic axis so that an adjusted illumination distribution generated by the illumination subsystem at the sample plane has an improved symmetry of intensity distribution as compared to the reference illumination distribution generated at the sample plane by the illumination subsystem positioned at the original optic axis.

2. The method according to claim 1, wherein the adjusted illumination distribution generated by the illumination subsystem at the sample plane having a point at the center of the adjusted illumination distribution with a highest intensity.

3. The method according to claim 1, wherein the optical light source and the at least one lens of the illumination subsystem are aligned along the original optic axis and aligned along the further optic axis after rotation.

4. The method according to claim 1, further comprising providing an excitation filter between the optical light source and the sample plane.

5. The method according to claim 1, further comprising providing an imaging lens over the sample plane.

6. The method according to claim 5, further comprising providing an emission filter between the imaging lens and the sample plane.

7. The method according to claim 1, wherein the sample plane is formed by an array of reaction chambers.

8. The method according to claim 7, wherein each reaction chamber of the array of reaction chambers is configured to contain fluorescence dye such that fluorescence is generated by the fluorescence dye upon illumination by the illumination subsystem.

9. The method according to claim 1, wherein the optical light source is configured to generate visible light, infrared light, or ultraviolet light.

10. The method according to claim 1, wherein the optical light source is a light emitting diode.

11. The method according to claim 1, wherein an angle in which the illumination subsystem is rotated is dependent on the incident angle, the optical light source, the at least one lens, a position of the pivot point along the original optic axis, a distance between the optical light source and the at least one lens, and a distance between the optical light source and the sample plane.

12. The method according to claim 11, wherein the distance between the optical light source and the at least one lens is 60 mm;

wherein the incident angle is 17°; and

wherein the illumination subsystem is rotated 2.7° about the pivot point.

13. The method according to claim 11, wherein the distance between the optical light source and the at least one lens is 30 mm;

wherein the distance between the optical light source and the sample plane is 110 mm;

wherein the incident angle is 22°; and

wherein the illumination subsystem is rotated 1.3° about the pivot point.

14. An optical system comprising:

an illumination subsystem comprising an optical light source and at least one lens, the illumination subsystem configured at a first tilt position having an original optic axis at an incident angle greater than 0° and less than 90° to a normal of a sample plane, wherein the illumination subsystem generates a reference illumination distribution on the sample plane;

wherein the illumination subsystem is rotatable about a pivot point between the optical light source and the sample plane along the original optic axis to a second tilt position having a further optic axis so that an adjusted illumination distribution generated by the illumination subsystem at the sample plane has an improved symmetry of intensity distribution as compared to the reference illumination distribution generated by the illumination subsystem position at the original optic axis.

15. The optical system according to claim 14, wherein the adjusted illumination distribution generated by the illumination subsystem at the sample plane having a point at the center of the adjusted illumination distribution with a highest intensity.

16. The optical system according to claim 14, further comprising:

an excitation filter configured between the optical light source and the sample plane, and

an imaging lens configured over the sample plane.

17. The optical system according to claim 14, wherein the illumination subsystem further comprises:

a plurality of optical light sources;

a plurality of lenses; and

a plurality of excitation filters; and

wherein the optical system further comprises a plurality of emission filters,

wherein the excitation and emission filters are configured for different wavelengths.

18. The optical system according to claim 14, wherein an angle in which the illumination subsystem is rotated is dependent on the incident angle, the optical light source, the at least one lens, a position of the pivot point along the optic axis, a distance between the optical light source and the at least one lens, and a distance between the optical light source and the sample plane.

19. The optical system according to claim 18, wherein the distance between the optical light source and the at least one lens is 60 mm;

wherein the incident angle is 17°; and

wherein the illumination subsystem is rotated 2.7° about the pivot point.

20. The optical system according to claim 18, wherein the distance between the optical light source and the at least one lens is 30 mm;

wherein the distance between the optical light source and the sample plane is 110 mm;

wherein the incident angle is 22°; and

wherein the illumination subsystem is rotated 1.3° about the pivot point.