CLAIMS

1. Method for cultivating a crop, in particular in an at least substantially daylight- free environment, said environment comprising an at least substantially fully conditioned cultivation space, an air inlet and an air outlet for directing an at least substantially laminar airflow through said cultivation space, and comprising an array of an array of artificial light sources in a direction between said air inlet and said air outlet, wherein the crop is exposed in said at least substantially fully conditioned cultivation space to actinic artificial light particularly comprising photosynthetically active radiation (PAR) emitted by an artificial light source from said array of artificial light sources present in the cultivation space, characterized in that an at least substantially laminar air flow is directed through said cultivation space in said direction from said air inlet to said air outlet, in that during a cultivation cycle a power output of the artificial light sources is adapted to an energy absorption of a part of the crop illuminated thereby such that the crop is subject to a mutually at least substantially equal vapour deficit near to each artificial light source from said array of artificial light sources.

2. Method as claimed in claim 1, characterized in that an atmosphere of the cultivation space is subjected to an air treatment wherein a temperature of the air is maintained above a dew point thereof.

3. Method as claimed in claim 1, characterized in that a power output of the at least one artificial light source is adapted to an evaporation and an energy absorption of a part of the crop located thereunder.

4. Method as claimed in claim 1, 2 or 3, characterized in that the at least one artificial light source is provided with a controllable cooling, a cooling capacity of which is adapted to a resultant of the power output of the artificial light source and the energy absorption of the crop.

5. Method as claimed in claim 4, characterized in that the controllable cooling comprises a liquid cooling, which liquid cooling is realized by a forced circulation of a cooling medium in heat exchanging contact with the artificial light sources.

6. Method as claimed in claim 5, characterized in that the light sources, optionally in groupwise and/or collective manner, are accommodated in fittings, wherein the fittings are provided in optionally groupwise manner with a liquid cooling, the cooling medium of which is brought into heat-exchanging contact with each of the fittings.

7. Method as claimed in one or more of the foregoing claims, characterized in that the controllable cooling comprises an air cooling, which air cooling is realized by a common, at least substantially laminar airflow in heat-exchanging contact with the artificial light source.

8. Method as claimed in claim 7, characterized in that the light sources, optionally in groupwise and/or collective manner, are accommodated in fittings, and that the at least substantially laminar airflow is guided over and along the fittings.

9. Method as claimed in claim 7 or 8, characterized in that the fittings are cooled in controlled manner in the flow direction of the at least substantially laminar airflow in order to maintain thereunder, from fitting to fitting, an at least substantially constant vapour deficit.

10. Method as claimed in claim 9, characterized in that the controlled cooling of the fittings comprises an air cooling along the fitting as well as a liquid cooling with a forced circulation of a liquid cooling medium in at least substantially direct thermodynamic contact with the fitting, wherein the circulation of the liquid cooling medium is controlled in heat-exchanging contact with the fitting in order to maintain, from fitting to fitting, an at least substantially constant vapour deficit under the fitting.

11. Method as claimed in claim 9 or 10, characterized in that the vapour deficit is set and maintained at a level of between about 0.5 and 6 grams of water per kilogram of air.

12. Method as claimed in claim 9, 10 or 11, characterized in that the laminar airflow is guided with a flow velocity of between 15 and 100 cm/s over the crop.

13. Method as claimed in one or more of the claims 9 to 12, characterized in that the fittings are cooled in controlled manner in the flow direction of the at least substantially laminar airflow in order to impose thereunder, from fitting to fitting, an increasing ambient temperature and to maintain an associated temperature gradient in the cultivation space.

14. Device for producing crops, in particular in an at least substantially daylight-free environment, comprising an at least substantially fully conditioned cultivation space between an air inlet and an air outlet for an at least substantially laminar airflow, comprising an air treatment installation for maintaining and, if desired, treating said laminar airflow, comprising an array of light fittings in a direction between said air inlet and said air outlet, wherein said light fittings are present in the cultivation space and comprise one or more artificial light sources which are able and configured to generate actinic artificial light particularly comprising photosynthetically active radiation (PAR), and to expose the crop thereto, characterized in that each of the fittings is provided with controllable cooling means with which a power output of the artificial light sources is adaptable during a cultivation cycle to an energy absorption of a part of the crop illuminated thereby such that the crop close to each fitting of the array of fittings is subject to an at least substantially constant vapour deficit.

15. Device as claimed in claim 14, characterized in that the cooling means comprise a controlled circulation of a cooling medium, which cooling medium can, at least during operation, enter into heat-exchanging contact with the at least one light source in the fitting.

16. Device as claimed in claim 15, characterized in that the fitting is provided, in optionally groupwise manner with a number of adjacent fittings, with an individually controllable cooling and controller adapted thereto.

17. Device as claimed in claim 16, characterized in that the fitting is provided, in groupwise manner with a number of adjacent fittings, with a controllable cooling and a controller adapted thereto, wherein the adjacent fittings are placed in a direction transversely of a flow direction of the laminar airflow.

18. Device as claimed in one or more of the claims 14 to 17, characterized in that the air treatment installation comprises a cooling device, in particular a cold battery, wherein the cooling device is provided with a condensation collector.

19. Device as claimed in one or more of the claims 14 to 18, characterized in that the air treatment installation is able and configured to sustain a laminar airflow in the cultivation space with an air velocity of about 15-100 cm/s during operation.