for an air conditioner in PTL 1, layout, furniture arrangement, the installation place of the indoor unit for an air conditioner, and the like are limited. In addition, in the indoor unit for an air conditioner in PTL 1, a difference between an intake temperature (indoor temperature) and a blow-out temperature is large when an air conditioning load is high, as with when operation is started. As a result, it is not possible to avoid a user from feeling a draft.

[0005]

Embodiments of the present disclosure make it possible to cool and heat the body of a user immediately while suppressing a draft feeling even when an air conditioning load is high.

Solution to Problem

[0006]

According to an aspect of the present disclosure, there is provided an indoor unit for an air conditioner, the indoor unit being configured to be installed in an air-conditioning target space and to be capable of changing a direction of an airflow that is blown out through a blow-out port. The indoor unit includes a control unit configured to switch between a normal mode and a wide mode. The control unit is configured to switch to the wide mode when an air conditioning load is higher than a predetermined value and extend at least vertically a range that is to be reached by

the airflow in the air-conditioning target space in the wide mode compared with the normal mode, and wherein, in the wide mode, when a range of 1600 mm high from a floor surface at a position away from the blow-out port by any distance within a range of 1000 mm to 2000 mm on a front side is set as a reference height range, and among three ranges obtained by equally dividing the reference height range into three in a height direction, the range positioned on an upper side is set as a first range, the range positioned on a lower side is set as a second range, and the range positioned in a middle is set as a third range, and when the indoor unit for the air conditioner is provided on a side wall in the air-conditioning target space such that a center of the blow-out port is at a position of 2000 mm above from the floor surface, an average wind velocity in the first range and an average wind velocity in the second range are substantially equal to each other, and an average wind velocity in the third range is equal to or more than 0.5 times and less than 1.5 times of the average wind velocity in the first range.

[0007]

In the above embodiment, it is possible to immediately heat and cool the body of a user with a spread airflow while suppressing a draft feeling by switching to the wide mode when the air conditioning load is high to thereby cause a blow-out temperature to be closer to an intake temperature than in the normal mode.

[0008]

An embodiment of the above aspect further including a fan that is configured to take in air from the air-conditioning target space and blow out the air into the air-conditioning target space, the control unit being configured to increase a number of rotations of the fan in the wide mode compared with before the wide mode is started.

[0009]

In the above embodiment, even when the range that is to be reached by the airflow is extended in the wide mode to be larger than in the normal mode, it is possible to maintain the blow-out velocity to be the same as that in the normal mode.

[0010]

In an embodiment of the above aspect, the control unit is configured to reduce a difference between an intake temperature and a blow-out temperature in the wide mode compared with the normal mode.

[0011]

In the above embodiment, it is possible to further suppress a draft feeling than in the normal mode while maintaining the blow-out velocity without increasing the air conditioning capacity.

[0012]

In an embodiment of the above aspect, the control unit is configured to switch to the normal mode when the wide mode has been continued for a predetermined period or more during cooling.

[0013]

In the above embodiment, it is possible to suppress occurrence of condensation in the indoor unit for an air conditioner during cooling.

[0014]

In an embodiment of the above aspect, the control unit is configured to switch between the normal mode and the wide mode based on presence/absence of a person inside and outside of a range that is to be reached by the airflow of the wide mode in the air-conditioning target space.

[0015]

In the above embodiment, it is possible to perform appropriate air conditioning on the basis of a presence state of a person in the air-conditioning target space.

[0016]

In an embodiment of the above aspect, the indoor unit further includes a heat exchanger that is configured to exchange heat with air that is taken in from the air-conditioning target space to thereby regulate a temperature of the air, the control unit being configured to cause a temperature of at least a portion of the heat exchanger in the wide mode during cooling to be lower than a dew temperature in the air-conditioning target space.

[0017]

In the above embodiment, it is possible to perform cooling while dehumidifying.

[0018]

In an embodiment of the above aspect, the control unit is configured to vary a blow-out velocity of the airflow in the wide mode.

[0019]

In the above embodiment, it is possible to blow out an airflow similar to a comfortable natural wind.

Brief Description of Drawings

[0020]

[Fig. 1] Fig. 1 is a sectional view of an indoor unit for an air conditioner according to an embodiment during operation stop.

[Fig. 2] Fig. 2 is a sectional view of the indoor unit for an air conditioner according to an embodiment during operation in an upward blowing mode.

[Fig. 3] Fig. 3 is a sectional view of the indoor unit for an air conditioner according to an embodiment during operation in an oblique blowing mode.

[Fig. 4] Fig. 4 is a sectional view of the indoor unit for an air conditioner according to an embodiment during operation in a wide mode.

[Fig. 5] Fig. 5 is a sectional view of the indoor unit for an air conditioner according to an embodiment during operation in a downward blowing mode.

[Fig. 6] Fig. 6 is a diagram illustrating a difference between the wide mode and a normal mode in the indoor unit

CLAIMS

1. An indoor unit for an air conditioner, the indoor unit being configured to be installed in an air-conditioning target space and to be capable of changing a direction of an airflow that is blown out through a blow-out port, the indoor unit comprising:

a control unit configured to switch between a normal mode and a wide mode,

wherein the control unit is configured to switch to the wide mode when an air conditioning load is higher than a predetermined value and extend at least vertically a range that is to be reached by the airflow in the air-conditioning target space in the wide mode compared with the normal mode, and

wherein, in the wide mode,

when a range of 1600 mm high from a floor surface at a position away from the blow-out port by any distance within a range of 1000 mm to 2000 mm on a front side is set as a reference height range, and among three ranges obtained by equally dividing the reference height range into three in a height direction, the range positioned on an upper side is set as a first range, the range positioned on a lower side is set as a second range, and the range positioned in a middle is set as a third range, and when the indoor unit for the air conditioner is provided on a side wall in the air-conditioning target space such that a center of the blow-out port is at a position of 2000 mm above from the floor surface,

an average wind velocity in the first range and an average wind velocity in the second range are substantially equal to each other, and an average wind velocity in the third range is equal to or more than 0.5 times and less than 1.5 times of the average wind velocity in the first range.

2. The indoor unit for an air conditioner according to claim 1, the indoor unit further comprising:

a fan that is configured to take in air from the air-conditioning target space and blow out the air into the air-conditioning target space,

wherein the control unit is configured to increase a number of rotations of the fan in the wide mode compared with before the wide mode is started.

3. The indoor unit for an air conditioner according to claim 1 or claim 2,

wherein the control unit is configured to reduce a difference between an intake temperature and a blow-out temperature in the wide mode compared with the normal mode.

4. The indoor unit for an air conditioner according to any one of claims 1 to 3,

wherein the control unit is configured to switch to the normal mode when the wide mode has been continued for a predetermined period or more during cooling.

5. The indoor unit for an air conditioner according to any one of claims 1 to 4,

wherein the control unit is configured to switch between the normal mode and the wide mode based on presence/absence of a person inside and outside of a range that is to be reached by the airflow of the wide mode in the air-conditioning target space.

6. The indoor unit for an air conditioner according to any one of claims 1 to 5, the indoor unit further comprising:

a heat exchanger that is configured to exchange heat with air that is taken in from the air-conditioning target space to thereby regulate a temperature of the air,

wherein the control unit is configured to cause a temperature of at least a portion of the heat exchanger in the wide mode during cooling to be lower than a dew temperature in the air-conditioning target space.

7. The indoor unit for an air conditioner according to any one of claims 1 to 6,

wherein the control unit is configured to vary a blow-out velocity of the airflow in the wide mode.