## PHILIPS <br> ADVANCE

## Electrical Specifications

| ICN-2S28-N@120 |  |
| ---: | :--- |
| Brand Name | CENTIUM T5 |
| Ballast Type | Electronic |
| Starting Method | Programmed Start |
| Lamp Connection | Series |
| Input Voltage | 120-277 |
| Input Frequency | 50/60 HZ |
| Status | Active |


| Lamp Type | Num. <br> of <br> Lamps | Rated <br> Lamp Watts | Min. Start <br> Temp (F/C) | Input Current <br> (Amps) | Input Power <br> (ANSI <br> Watts) | Ballast <br> Factor | MAX <br> THD <br> $\%$ | Power <br> Factor | MAX Lamp <br> Current Crest <br> Factor | B.E.F. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| F14T5 | 1 | 14 | $0 /-18$ | 0.14 | 17 | 1.07 | 10 | 0.98 | 1.7 | 6.29 |
| F14T5 | 2 | 14 | $0 /-18$ | 0.28 | 33 | 1.04 | 10 | 0.98 | 1.7 | 3.15 |
| F21T5 | 1 | 21 | $0 /-18$ | 0.22 | 25 | 1.06 | 10 | 0.98 | 1.7 | 4.24 |
| F21T5 | 2 | 21 | $0 /-18$ | 0.39 | 47 | 1.00 | 10 | 0.98 | 1.7 | 2.13 |
| F28T5 | 1 | 28 | $0 /-18$ | 0.29 | 31 | 1.05 | 10 | 0.98 | 1.7 | 3.39 |
| *F28T5 | 2 | 28 | $0 /-18$ | 0.53 | 64 | 1.03 | 10 | 0.98 | 1.7 | 1.62 |
| F28T5/ES (25W) | 1 | 25 | $32 / 00$ | 0.29 | 33 | 1.00 | 10 | 0.98 | 1.7 | 3.03 |
| F28T5/ES (25W) | 2 | 25 | $32 / 00$ | 0.49 | 58 | 1.00 | 10 | 0.98 | 1.7 | 1.72 |
| F35T5 | 1 | 35 | $0 /-18$ | 0.34 | 40 | 1.01 | 10 | 0.98 | 1.7 | 2.53 |

## Wiring Diagram



Diag. 74
The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

## Standard Lead Length (inches)

|  | in. | cm. |
| ---: | ---: | ---: |
| Black | 23 | 58.4 |
| White | 23 | 58.4 |
| Blue | 27 | 68.6 |
| Red | 27 | 68.6 |
| Yellow | 42 | 106.7 |
| Gray |  | 0 |
| Violet |  | 0 |

Enclosure


## Enclosure Dimensions

| OverAll (L) | Width (W) | Height (H) | Mounting (M) |
| ---: | ---: | ---: | ---: |
| $9.5^{\prime}$ | $1.3^{\prime}$ | $1.0{ }^{\prime}$ | $8.9 "$ |
| $91 / 2$ | $13 / 10$ | 1 | $89 / 10$ |
| 24.1 cm | 3.3 cm | 2.5 cm | 22.6 cm |


| ICN-2S28-N@120 |  |
| ---: | :--- |
| Brand Name | CENTIUM T5 |
| Ballast Type | Electronic |
| Starting Method | Programmed Start |
| Lamp Connection | Series |
| Input Voltage | $\mathbf{1 2 0 - 2 7 7}$ |
| Input Frequency | $50 / 60 \mathbf{~ H Z}$ |
| Status | Active |

## Notes:

Status Active

## Electrical Specifications

Section I - Physical Characteristics
1.1 Ballast shall be physically interchangeable with standard electromagnetic or standard electronic ballasts, where applicable.
1.2 Ballast shall be provided with integral leads or poke-in wire trap connectors color-coded per ANSI C82.11.

## Section II - Performance

2.1 Ballast shall be Programmed Start.
2.2 Ballast shall contain auto restart circuitry in order to restart lamps without resetting power.
2.3 Ballast shall operate from $50 / 60 \mathrm{~Hz}$ input source of $\qquad$ ( 120 V through 277 V , 347 V or 347 V through 480 V ) with sustained variations of $+/-10 \%$ (voltage and frequency).
2.4 Ballast shall be high frequency electronic type and operate lamps at a frequency above 42 kHz to avoid interference with infrared devices and eliminate visible flicker.
2.5 Ballast shall have a Power Factor greater than 0.98 for primary lamp.
2.6 Ballast shall have a minimum ballast factor of 1.0 for primary lamp application.
2.7 Ballast shall provide for a Lamp Current Crest Factor of 1.7 or less.
2.8 Ballast input current shall have Total Harmonic Distortion (THD) of less than $10 \%$ when operated at nominal line voltage with primary lamp.
2.9 Ballast shall have a Class A sound rating.
2.10 Ballast shall have a minimum starting temperature of $\qquad$ $\{-18 \mathrm{C}(0 \mathrm{~F})$ or -29C (-20F)\} for primary lamp. Consult lamp manufacturer for temperature versus light output characteristics.
2.11 Ballast shall provide Lamp EOL Protection Circuit.
2.12 Ballast shall tolerate sustained open circuit and short circuit output conditions.
2.13 Four-lamp ballast shall have (semi-independent or independent) lamp operation.

Section III - Regulatory
3.1 Ballast shall not contain any Polychlorinated Biphenyl (PCB).
3.2 Ballast shall be Underwriters Laboratories (UL) listed, Class P and Type 1 Outdoor; and Canadian Standards Association (CSA) certified where applicable.
3.3 Ballast shall comply with ANSI C62.41 Category A for Transient protection.
3.4 Ballast shall comply with ANSI C82.11 where applicable.
3.5 Ballast shall comply with applicable requirements of the Federal Communications Commission (FCC) rules and regulations, Title 47 CFR part

18, for Non-Consumer equipment.
3.6 Ballast shall comply with UL Type CC rating.
3.7 Ballast shall comply with NEMA 410 for in-rush current limits.

## Section IV - Other

4.1 Ballast shall be manufactured in a factory certified to ISO 9001 Quality System Standards.
4.2 Ballast shall carry a five-year warranty from date of manufacture against defects in material or workmanship, including replacement, for operation at a maximum case temperature of 70 C . Ballasts with a " 90 C " designation in their catalog number shall also carry a three-year warranty at a maximum case temperature of 90 C .
4.3 Manufacturer shall have a twenty-year history of producing electronic ballasts for the North American market.


## PHILIPS <br> ADVANCE

## Electrical Specifications

| ICN-2S28-N@277 |  |
| ---: | :--- |
| Brand Name | CENTIUM T5 |
| Ballast Type | Electronic |
| Starting Method | Programmed Start |
| Lamp Connection | Series |
| Input Voltage | $120-277$ |
| Input Frequency | $50 / 60 \mathrm{HZ}$ |
| Status | Active |


| Lamp Type | Num. <br> of <br> Lamps | Rated <br> Lamp Watts | Min. Start <br> Temp (F/C) | Input Current <br> (Amps) | Input Power <br> (ANSI <br> Watts) | Ballast <br> Factor | MAX <br> THD <br> $\%$ | Power <br> Factor | MAX Lamp <br> Current Crest <br> Factor | B.E.F. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| F14T5 | 1 | 14 | $0 /-18$ | 0.07 | 17 | 1.07 | 10 | 0.98 | 1.7 | 6.29 |
| F14T5 | 2 | 14 | $0 /-18$ | 0.13 | 33 | 1.04 | 10 | 0.98 | 1.7 | 3.15 |
| F21T5 | 1 | 21 | $0 /-18$ | 0.10 | 25 | 1.06 | 10 | 0.98 | 1.7 | 4.24 |
| F21T5 | 2 | 21 | $0 /-18$ | 0.17 | 47 | 1.01 | 10 | 0.98 | 1.7 | 2.16 |
| * F28T5 | 1 | 28 | $0 /-18$ | 0.12 | 31 | 1.05 | 10 | 0.98 | 1.7 | 3.39 |
| F28T5 | 2 | 28 | $0 /-18$ | 0.23 | 62 | 1.03 | 10 | 0.98 | 1.7 | 1.65 |
| F28T5/ES (25W) | 1 | 25 | $32 / 00$ | 0.11 | 30 | 1.00 | 10 | 0.98 | 1.7 | 3.33 |
| F28T5/ES (25W) | 2 | 25 | $32 / 00$ | 0.21 | 57 | 1.00 | 10 | 0.98 | 1.7 | 1.75 |
| F35T5 | 1 | 35 | $0 /-18$ | 0.15 | 40 | 1.01 | 10 | 0.98 | 1.7 | 2.53 |

## Wiring Diagram


*INSULATE YELLOW LEADS INDIVIDUALLY FOR 600 V
Diag. 73
The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

## Standard Lead Length (inches)

|  | in. | cm. |
| ---: | ---: | ---: |
| Black | 23 | 58.4 |
| White | 23 | 58.4 |
| Blue | 27 | 68.6 |
| Red | 27 | 68.6 |
| Yellow | 42 | 106.7 |
| Gray |  | 0 |
| Violet |  | 0 |

## Enclosure



## Enclosure Dimensions

| OverAll (L) | Width (W) | Height (H) | Mounting (M) |
| ---: | ---: | ---: | ---: |
| $9.5 "$ | $1.3^{"}$ | $1.0 "$ | $8.9{ }^{\prime \prime}$ |
| $91 / 2$ | $13 / 10$ | 1 | $89 / 10$ |
| 24.1 cm | 3.3 cm | 2.5 cm | 22.6 cm |


| ICN-2S28-N@277 |  |
| ---: | :--- |
| Brand Name | CENTIUM T5 |
| Ballast Type | Electronic |
| Starting Method | Programmed Start |
| Lamp Connection | Series |
| Input Voltage | $\mathbf{1 2 0 - 2 7 7}$ |
| Input Frequency | $\mathbf{5 0 / 6 0} \mathbf{~ H Z}$ |
| Status | Active |

## Notes:

Status Active

## Electrical Specifications

Section I - Physical Characteristics
1.1 Ballast shall be physically interchangeable with standard electromagnetic or standard electronic ballasts, where applicable.
1.2 Ballast shall be provided with integral leads or poke-in wire trap connectors color-coded per ANSI C82.11.

## Section II - Performance

2.1 Ballast shall be Programmed Start.
2.2 Ballast shall contain auto restart circuitry in order to restart lamps without resetting power.
2.3 Ballast shall operate from $50 / 60 \mathrm{~Hz}$ input source of $\qquad$ ( 120 V through 277 V , 347 V or 347 V through 480 V ) with sustained variations of $+/-10 \%$ (voltage and frequency).
2.4 Ballast shall be high frequency electronic type and operate lamps at a frequency above 42 kHz to avoid interference with infrared devices and eliminate visible flicker.
2.5 Ballast shall have a Power Factor greater than 0.98 for primary lamp.
2.6 Ballast shall have a minimum ballast factor of 1.0 for primary lamp application.
2.7 Ballast shall provide for a Lamp Current Crest Factor of 1.7 or less.
2.8 Ballast input current shall have Total Harmonic Distortion (THD) of less than $10 \%$ when operated at nominal line voltage with primary lamp.
2.9 Ballast shall have a Class A sound rating.
2.10 Ballast shall have a minimum starting temperature of $\qquad$ $\{-18 \mathrm{C}(0 \mathrm{~F})$ or -29C (-20F)\} for primary lamp. Consult lamp manufacturer for temperature versus light output characteristics.
2.11 Ballast shall provide Lamp EOL Protection Circuit.
2.12 Ballast shall tolerate sustained open circuit and short circuit output conditions.
2.13 Four-lamp ballast shall have (semi-independent or independent) lamp operation.

Section III - Regulatory
3.1 Ballast shall not contain any Polychlorinated Biphenyl (PCB).
3.2 Ballast shall be Underwriters Laboratories (UL) listed, Class P and Type 1 Outdoor; and Canadian Standards Association (CSA) certified where applicable.
3.3 Ballast shall comply with ANSI C62.41 Category A for Transient protection.
3.4 Ballast shall comply with ANSI C82.11 where applicable.
3.5 Ballast shall comply with applicable requirements of the Federal Communications Commission (FCC) rules and regulations, Title 47 CFR part 18, for Non-Consumer equipment.
3.6 Ballast shall comply with UL Type CC rating.
3.7 Ballast shall comply with NEMA 410 for in-rush current limits.

Section IV - Other
4.1 Ballast shall be manufactured in a factory certified to ISO 9001 Quality System Standards.
4.2 Ballast shall carry a five-year warranty from date of manufacture against defects in material or workmanship, including replacement, for operation at a maximum case temperature of 70 C . Ballasts with a " 90 C " designation in their catalog number shall also carry a three-year warranty at a maximum case temperature of 90 C .
4.3 Manufacturer shall have a twenty-year history of producing electronic ballasts for the North American market.


