

Luminária com proteção combinada

**MODELO AIWNAR** (com alojamento)

**ATMOSFERAS EXPLOSIVAS**  
**Ex nAR II T\* Gc IP66**  
**Ex tD A 21 T\* Dc IP66**

**DADOS CONSTRUTIVOS**

Fabricada em liga de alumínio fundido copper free, resistente à corrosão, globo de vidro borossilicato, resistente a choques térmicos e impactos, soquete de porcelana antivibratório. Guarnições em silicone.

Parafusos e arruelas em aço inox e chassi em alumínio.

**ACABAMENTO**

Pintura a pó em poliéster cor cinza munsell N6.5.

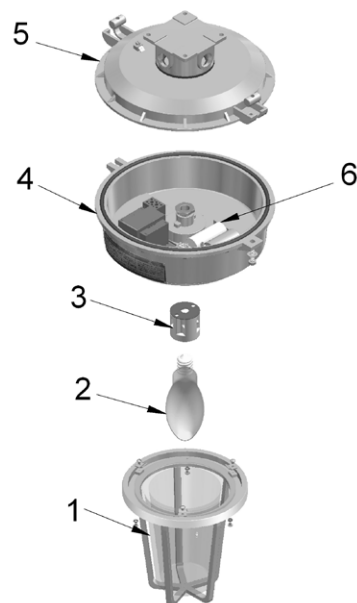
**ATMOSFERAS EXPLOSIVAS**

Este produto foi projetado e ensaiado de acordo com as normas vigentes de equipamentos para instalação em atmosferas explosivas.

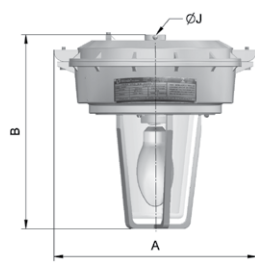
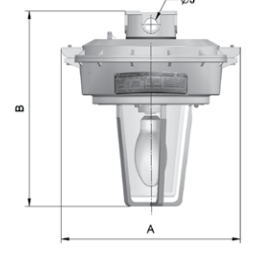
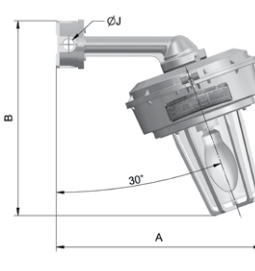
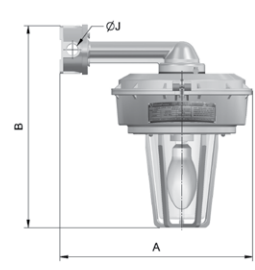
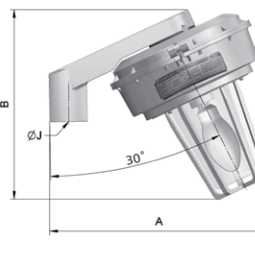
EPL Gc e Dc

**APLICAÇÃO**

Iluminação de áreas onde haja risco de explosão: indústrias petroquímicas, químicas, de tintas e vernizes, alimentícias, farmacêuticas, depósitos de produtos inflamáveis, cabines de pinturas, entre outros.



- 01- Conjunto ótico
- 02- Lâmpada
- 03- Conjunto soquete
- 04- Corpo
- 05- Tampa
- 06- Módulo de partida

| Produto   | Modelo             | Lâmpada*          | Potência | Soquete | Class. Temp. | Dimensões (mm) |     | ØJ**   |
|---|--------------------|-------------------|----------|---------|--------------|----------------|-----|--------|
|   |                    |                   |          |         |              | A              | B   |        |
|    | AIWNAR/1-PL42EP    | Fluor. Compacta   | 42 W     | G23     | T5           | 340            | 330 | 3/4"   |
|   | AIWNAR/1-VMC80P    | Vapor de Mercúrio | 80 W     | E-27    | T3           | 340            | 330 | 3/4"   |
|   | AIWNAR/1-VMC125P   | Vapor de Mercúrio | 125 W    | E-27    | T3           | 340            | 330 | 3/4"   |
|   | AIWNAR/1-VSD70P    | Vapor de Sódio    | 70 W     | E27     | T3           | 340            | 330 | 3/4"   |
|   | AIWNAR/1-VMT70P    | Vapor Metálico    | 70 W     | E27     | T3           | 340            | 330 | 3/4"   |
|   | AIWNAR/1-VMT150P   | Vapor Metálico    | 150 W    | E27     | T3           | 340            | 330 | 3/4"   |
|   | AIWNAR/2-VSD150P   | Vapor de Sódio    | 150 W    | E40     | T3           | 411            | 413 | 3/4"   |
|   | AIWNAR/2-VSD250P   | Vapor de Sódio    | 250 W    | E40     | T3           | 411            | 413 | 3/4"   |
|   | AIWNAR/2-VMT250P   | Vapor Metálico    | 250 W    | E40     | T3           | 411            | 413 | 3/4"   |
|   | AIWNAR/2-VMC250P   | Vapor de Mercúrio | 250 W    | E40     | T3           | 411            | 413 | 3/4"   |
|    | AIWNAR/1-PL42EX    | Fluor. Compacta   | 42 W     | G23     | T5           | 340            | 372 | 3/4"   |
|   | AIWNAR/1-VMC80X    | Vapor de Mercúrio | 80 W     | E-27    | T3           | 340            | 372 | 3/4"   |
|   | AIWNAR/1-VMC125X   | Vapor de Mercúrio | 125 W    | E-27    | T3           | 340            | 372 | 3/4"   |
|   | AIWNAR/1-VSD70X    | Vapor de Sódio    | 70 W     | E27     | T3           | 340            | 372 | 3/4"   |
|   | AIWNAR/1-VMT70X    | Vapor Metálico    | 70 W     | E27     | T3           | 340            | 330 | 3/4"   |
|   | AIWNAR/1-VMT150X   | Vapor Metálico    | 150 W    | E27     | T3           | 340            | 372 | 3/4"   |
|   | AIWNAR/2-VSD150X   | Vapor de Sódio    | 150 W    | E40     | T3           | 411            | 453 | 3/4"   |
|   | AIWNAR/2-VSD250X   | Vapor de Sódio    | 250 W    | E40     | T3           | 411            | 453 | 3/4"   |
|   | AIWNAR/2-VMT250X   | Vapor Metálico    | 250 W    | E40     | T3           | 411            | 453 | 3/4"   |
|   | AIWNAR/2-VMC250X   | Vapor de Mercúrio | 250 W    | E40     | T3           | 411            | 453 | 3/4"   |
|  | AIWNAR/1-PL42EA30  | Fluor. Compacta   | 42 W     | G23     | T5           | 473            | 380 | 3/4"   |
|   | AIWNAR/1-VMC80A30  | Vapor de Mercúrio | 80 W     | E-27    | T3           | 473            | 380 | 3/4"   |
|   | AIWNAR/1-VMC125A30 | Vapor de Mercúrio | 125 W    | E-27    | T3           | 473            | 380 | 3/4"   |
|   | AIWNAR/1-VSD70A30  | Vapor de Sódio    | 70 W     | E27     | T3           | 473            | 380 | 3/4"   |
|   | AIWNAR/1-VMT70A30  | Vapor Metálico    | 70 W     | E27     | T3           | 473            | 380 | 3/4"   |
|   | AIWNAR/1-VMT150A30 | Vapor Metálico    | 150 W    | E27     | T3           | 473            | 380 | 3/4"   |
|   | AIWNAR/2-VSD150A30 | Vapor de Sódio    | 150 W    | E40     | T3           | 523            | 459 | 3/4"   |
|   | AIWNAR/2-VSD250A30 | Vapor de Sódio    | 250 W    | E40     | T3           | 523            | 459 | 3/4"   |
|   | AIWNAR/2-VMT250A30 | Vapor Metálico    | 250 W    | E40     | T3           | 523            | 459 | 3/4"   |
|   | AIWNAR/2-VMC250A30 | Vapor de Mercúrio | 250 W    | E40     | T3           | 523            | 459 | 3/4"   |
|  | AIWNAR/1-PL42EA90  | Fluor. Compacta   | 42 W     | G23     | T5           | 410            | 418 | 3/4"   |
|   | AIWNAR/1-VMC80A90  | Vapor de Mercúrio | 80 W     | E-27    | T3           | 410            | 418 | 3/4"   |
|   | AIWNAR/1-VMC125A90 | Vapor de Mercúrio | 125 W    | E-27    | T3           | 410            | 418 | 3/4"   |
|   | AIWNAR/1-VSD70A90  | Vapor de Sódio    | 70 W     | E27     | T3           | 410            | 418 | 3/4"   |
|   | AIWNAR/1-VMT70A90  | Vapor Metálico    | 70 W     | E27     | T3           | 410            | 418 | 3/4"   |
|   | AIWNAR/1-VMT150A90 | Vapor Metálico    | 150 W    | E27     | T3           | 410            | 418 | 3/4"   |
|   | AIWNAR/2-VSD150A90 | Vapor de Sódio    | 150 W    | E40     | T3           | 438            | 500 | 3/4"   |
|   | AIWNAR/2-VSD250A90 | Vapor de Sódio    | 250 W    | E40     | T3           | 438            | 500 | 3/4"   |
|   | AIWNAR/2-VMT250A90 | Vapor Metálico    | 250 W    | E40     | T3           | 438            | 500 | 3/4"   |
|   | AIWNAR/2-VMC250A90 | Vapor de Mercúrio | 250 W    | E40     | T3           | 438            | 500 | 3/4"   |
|  | AIWNAR/1-PL42EP30  | Fluor. Compacta   | 42 W     | G23     | T5           | 450            | 360 | 1 1/2" |
|   | AIWNAR/1-VMC80P30  | Vapor de Mercúrio | 80 W     | E-27    | T3           | 450            | 360 | 1 1/2" |
|   | AIWNAR/1-VMC125P30 | Vapor de Mercúrio | 125 W    | E-27    | T3           | 450            | 360 | 1 1/2" |
|   | AIWNAR/1-VSD70P30  | Vapor de Sódio    | 70 W     | E27     | T3           | 450            | 360 | 1 1/2" |
|   | AIWNAR/1-VMT70P30  | Vapor Metálico    | 70 W     | E27     | T3           | 450            | 360 | 1 1/2" |
|   | AIWNAR/1-VMT150P30 | Vapor Metálico    | 150 W    | E27     | T3           | 450            | 360 | 1 1/2" |
|   | AIWNAR/2-VSD150P30 | Vapor de Sódio    | 150 W    | E40     | T3           | 486            | 442 | 1 1/2" |
|   | AIWNAR/2-VSD250P30 | Vapor de Sódio    | 250 W    | E40     | T3           | 486            | 442 | 1 1/2" |
|   | AIWNAR/2-VMT250P30 | Vapor Metálico    | 250 W    | E40     | T3           | 486            | 442 | 1 1/2" |
|   | AIWNAR/2-VMC250P30 | Vapor de Mercúrio | 250 W    | E40     | T3           | 486            | 442 | 1 1/2" |

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| Produto   | Modelo             | Lâmpada*          | Potência | Soquete | Class. Temp. | Dimensões (mm) |     | ØJ**   |
|---|--------------------|-------------------|----------|---------|--------------|----------------|-----|--------|
|   |                    |                   |          |         |              | A              | B   |        |
|  | AIWNAR/1-PL42EP90  | Fluor. Compacta   | 42 W     | G23     | T5           | 395            | 355 | 1 1/2" |
|   | AIWNAR/1-VMC80P90  | Vapor de Mercúrio | 80 W     | E-27    | T3           | 395            | 355 | 1 1/2" |
|   | AIWNAR/1-VMC125P90 | Vapor de Mercúrio | 125 W    | E-27    | T3           | 395            | 355 | 1 1/2" |
|   | AIWNAR/1-VSD70P90  | Vapor de Sódio    | 70 W     | E27     | T3           | 395            | 355 | 1 1/2" |
|   | AIWNAR/1-VMT70P90  | Vapor Metálico    | 70 W     | E27     | T3           | 395            | 355 | 1 1/2" |
|   | AIWNAR/1-VMT150P90 | Vapor Metálico    | 150 W    | E27     | T3           | 395            | 355 | 1 1/2" |
|   | AIWNAR/2-VSD150P90 | Vapor de Sódio    | 150 W    | E40     | T3           | 500            | 435 | 1 1/2" |
|   | AIWNAR/2-VSD250P90 | Vapor de Sódio    | 250 W    | E40     | T3           | 500            | 435 | 1 1/2" |
|   | AIWNAR/2-VMT250P90 | Vapor Metálico    | 250 W    | E40     | T3           | 500            | 435 | 1 1/2" |
|   | AIWNAR/2-VMC250P90 | Vapor de Mercúrio | 250 W    | E40     | T3           | 500            | 435 | 1 1/2" |

Roscas NPT. Todas as luminárias são fornecidas com reator.

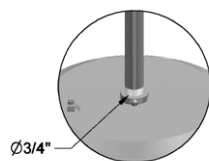
\* A pedido, as luminárias podem ser fornecidas com lâmpadas.

\*\* Para os tipos de fixação Plafonier "X", Arandela 30° "A30", a pedido, as entradas rosqueadas podem ser fornecidas no diâmetro de Ø1" NPT. Para os tipos de fixação Poste 30° "P30" e Poste 90° "P90", a pedido a entrada rosqueada pode ser fornecida no diâmetro de Ø2" NPT.

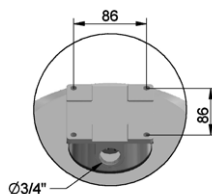
Circuitos de Emergência: a pedido, o modelo AIWNAR/1-PL42E pode ser fornecido preparado p/ circuitos de emergência, ou seja, c/ a comutação automática do reator de 220VAC p/ 125VCC.

## DETALHES DA FIXAÇÃO

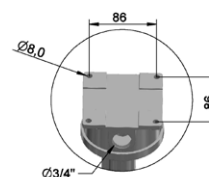
AIWNAR /P Pendente



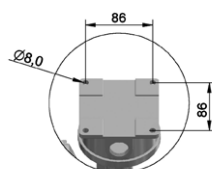
AIWNAR /X Plafonier



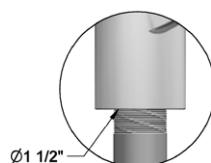
AIWNAR /A30 Arandela 30°



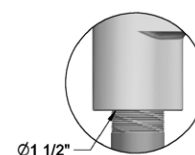
AIWNAR /A90 Arandela 90°



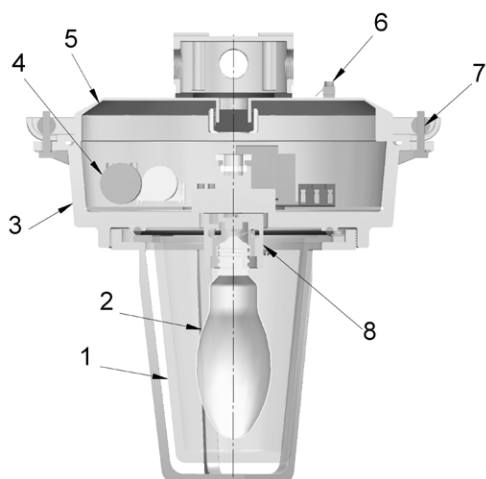
AIWNAR /P30 Poste 30°



AIWNAR /P90 Poste 90°



## DETALHES CONSTRUTIVOS



- 01- Conjunto ótico
- 02- Lâmpada
- 03- Corpo
- 04- Módulo de partida
- 05- Tampa
- 06- Terminal de aterramento
- 07- Conjunto de fechamento
- 08- Conjunto soquete

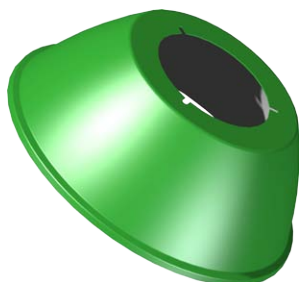
## REFLETOR ESMALTADO

Fabricado em chapa de aço esmaltado a fogo na cor branca internamente e na cor verde externamente. Os refletores são fornecidos separadamente. A pedido pode ser fornecido em chapa de alumínio.

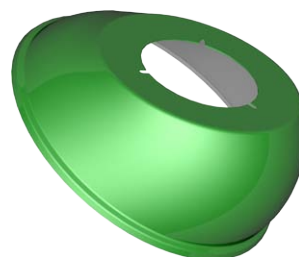
**NORMAL**



**CONCENTRADOR**



**ANGULAR**



| Produto | Código | Luminária Modelo | Dimensões (mm) |     |
|---------|--------|------------------|----------------|-----|
|         |        |                  | A              | ØB  |
|         | RNW-1  | AIWNAR/1         | 140            | 405 |
|         | RNW-2  | AIWNAR/2         | 170            | 530 |
|         | RCW-1  | AIWNAR/1         | 200            | 405 |
|         | RCW-2  | AIWNAR/2         | 245            | 530 |
|         | RAW-1  | AIWNAR/1         | 405            | 530 |
|         | RAW-2  | AIWNAR/2         | 285            | 320 |

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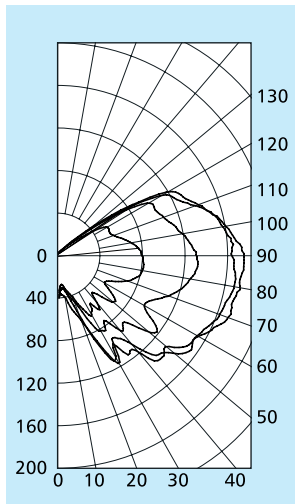
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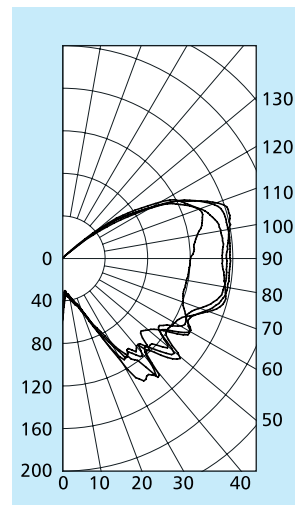
## FOTOMETRIAS

### Lâmpada Vapor de Sódio 70W Fluxo Luminoso Total 2.856,1 lm



| ρ Teto[%]   | 80                     |      |      | 70   |      |      | 50   |      |      | 30   |      |      | 10   |      |      | 0    |
|-------------|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| ρ Parede[%] | 50                     | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 0    |
| ρ Piso[%]   | 20                     |      |      | 20   |      |      | 20   |      |      | 20   |      |      | 20   |      |      | 0    |
| K           | U: Fator de Utilização |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 0           | 0.56                   | 0.56 | 0.56 | 0.52 | 0.52 | 0.52 | 0.45 | 0.45 | 0.45 | 0.39 | 0.39 | 0.39 | 0.33 | 0.33 | 0.33 | 0.31 |
| 1           | 0.44                   | 0.41 | 0.38 | 0.41 | 0.38 | 0.35 | 0.35 | 0.32 | 0.30 | 0.29 | 0.27 | 0.26 | 0.24 | 0.23 | 0.21 | 0.19 |
| 2           | 0.37                   | 0.32 | 0.28 | 0.34 | 0.30 | 0.26 | 0.29 | 0.25 | 0.22 | 0.24 | 0.21 | 0.19 | 0.19 | 0.17 | 0.16 | 0.13 |
| 3           | 0.31                   | 0.26 | 0.22 | 0.29 | 0.24 | 0.20 | 0.24 | 0.20 | 0.17 | 0.20 | 0.17 | 0.15 | 0.16 | 0.14 | 0.12 | 0.10 |
| 4           | 0.27                   | 0.22 | 0.18 | 0.25 | 0.20 | 0.16 | 0.21 | 0.17 | 0.14 | 0.17 | 0.14 | 0.12 | 0.14 | 0.11 | 0.09 | 0.07 |
| 5           | 0.23                   | 0.18 | 0.14 | 0.22 | 0.17 | 0.13 | 0.18 | 0.14 | 0.11 | 0.15 | 0.12 | 0.09 | 0.12 | 0.10 | 0.08 | 0.06 |
| 6           | 0.21                   | 0.16 | 0.12 | 0.19 | 0.15 | 0.11 | 0.16 | 0.12 | 0.10 | 0.13 | 0.10 | 0.08 | 0.11 | 0.08 | 0.06 | 0.05 |
| 7           | 0.18                   | 0.14 | 0.10 | 0.17 | 0.13 | 0.10 | 0.14 | 0.11 | 0.08 | 0.12 | 0.09 | 0.07 | 0.10 | 0.07 | 0.05 | 0.04 |
| 8           | 0.17                   | 0.12 | 0.09 | 0.15 | 0.11 | 0.08 | 0.13 | 0.09 | 0.07 | 0.11 | 0.08 | 0.06 | 0.09 | 0.06 | 0.05 | 0.03 |
| 9           | 0.15                   | 0.11 | 0.08 | 0.14 | 0.10 | 0.07 | 0.12 | 0.08 | 0.06 | 0.10 | 0.07 | 0.05 | 0.08 | 0.06 | 0.04 | 0.03 |
| 10          | 0.14                   | 0.10 | 0.07 | 0.13 | 0.09 | 0.06 | 0.11 | 0.08 | 0.05 | 0.09 | 0.06 | 0.04 | 0.07 | 0.05 | 0.03 | 0.02 |

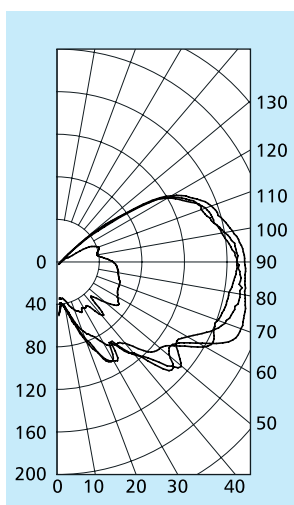
### Lâmpada Vapor de Sódio 150W Fluxo Luminoso Total 7.635,2 lm



| ρ Teto[%]   | 80                     |      |      | 70   |      |      | 50   |      |      | 30   |      |      | 10   |      |      | 0    |
|-------------|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| ρ Parede[%] | 50                     | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 0    |
| ρ Piso[%]   | 20                     |      |      | 20   |      |      | 20   |      |      | 20   |      |      | 20   |      |      | 0    |
| K           | U: Fator de Utilização |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 0           | 0.56                   | 0.56 | 0.56 | 0.52 | 0.52 | 0.52 | 0.45 | 0.45 | 0.45 | 0.39 | 0.39 | 0.39 | 0.34 | 0.34 | 0.34 | 0.31 |
| 1           | 0.44                   | 0.41 | 0.38 | 0.41 | 0.38 | 0.36 | 0.35 | 0.33 | 0.31 | 0.30 | 0.28 | 0.26 | 0.25 | 0.23 | 0.22 | 0.20 |
| 2           | 0.37                   | 0.32 | 0.29 | 0.34 | 0.30 | 0.27 | 0.29 | 0.26 | 0.23 | 0.24 | 0.22 | 0.20 | 0.20 | 0.18 | 0.16 | 0.14 |
| 3           | 0.31                   | 0.26 | 0.23 | 0.29 | 0.25 | 0.21 | 0.25 | 0.21 | 0.18 | 0.21 | 0.18 | 0.15 | 0.17 | 0.14 | 0.13 | 0.10 |
| 4           | 0.27                   | 0.22 | 0.18 | 0.25 | 0.21 | 0.17 | 0.21 | 0.18 | 0.15 | 0.18 | 0.15 | 0.12 | 0.14 | 0.12 | 0.10 | 0.08 |
| 5           | 0.24                   | 0.19 | 0.15 | 0.22 | 0.17 | 0.14 | 0.19 | 0.15 | 0.12 | 0.16 | 0.12 | 0.10 | 0.13 | 0.10 | 0.08 | 0.06 |
| 6           | 0.21                   | 0.16 | 0.13 | 0.20 | 0.15 | 0.12 | 0.17 | 0.13 | 0.10 | 0.14 | 0.11 | 0.08 | 0.11 | 0.09 | 0.07 | 0.05 |
| 7           | 0.19                   | 0.14 | 0.11 | 0.17 | 0.13 | 0.10 | 0.15 | 0.11 | 0.09 | 0.12 | 0.09 | 0.07 | 0.10 | 0.08 | 0.06 | 0.04 |
| 8           | 0.17                   | 0.12 | 0.09 | 0.16 | 0.11 | 0.09 | 0.13 | 0.10 | 0.07 | 0.11 | 0.08 | 0.06 | 0.09 | 0.07 | 0.05 | 0.04 |
| 9           | 0.15                   | 0.11 | 0.08 | 0.14 | 0.10 | 0.07 | 0.12 | 0.09 | 0.06 | 0.10 | 0.07 | 0.05 | 0.08 | 0.06 | 0.04 | 0.03 |
| 10          | 0.14                   | 0.10 | 0.07 | 0.13 | 0.09 | 0.07 | 0.11 | 0.08 | 0.06 | 0.09 | 0.07 | 0.05 | 0.08 | 0.05 | 0.04 | 0.03 |

## Lâmpada Vapor de Sódio 250W

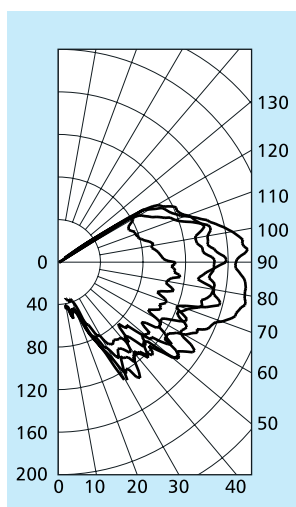
### Fluxo Luminoso Total 1.445,9 lm



| $\rho$ Teto[%]   | 80                     |      |      | 70   |      |      | 50   |      |      | 30   |      |      | 10   |      |      | 0    |
|------------------|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| $\rho$ Parede[%] | 50                     | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 0    |
| $\rho$ Piso[%]   | 20                     |      |      | 20   |      |      | 20   |      |      | 20   |      |      | 20   |      |      | 0    |
| K                | U: Fator de Utilização |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 0                | 0.56                   | 0.56 | 0.56 | 0.52 | 0.52 | 0.52 | 0.45 | 0.45 | 0.45 | 0.38 | 0.38 | 0.38 | 0.32 | 0.32 | 0.32 | 0.29 |
| 1                | 0.44                   | 0.41 | 0.38 | 0.41 | 0.38 | 0.36 | 0.35 | 0.32 | 0.30 | 0.29 | 0.27 | 0.25 | 0.23 | 0.22 | 0.21 | 0.18 |
| 2                | 0.37                   | 0.33 | 0.29 | 0.34 | 0.30 | 0.27 | 0.29 | 0.25 | 0.23 | 0.24 | 0.21 | 0.19 | 0.19 | 0.17 | 0.15 | 0.13 |
| 3                | 0.32                   | 0.27 | 0.23 | 0.29 | 0.25 | 0.21 | 0.24 | 0.21 | 0.18 | 0.20 | 0.17 | 0.15 | 0.16 | 0.14 | 0.12 | 0.09 |
| 4                | 0.27                   | 0.22 | 0.18 | 0.25 | 0.21 | 0.17 | 0.21 | 0.17 | 0.14 | 0.17 | 0.14 | 0.12 | 0.13 | 0.11 | 0.09 | 0.07 |
| 5                | 0.24                   | 0.19 | 0.15 | 0.22 | 0.17 | 0.14 | 0.18 | 0.15 | 0.12 | 0.15 | 0.12 | 0.10 | 0.12 | 0.09 | 0.08 | 0.06 |
| 6                | 0.21                   | 0.16 | 0.13 | 0.20 | 0.15 | 0.12 | 0.16 | 0.13 | 0.10 | 0.13 | 0.10 | 0.08 | 0.10 | 0.08 | 0.06 | 0.05 |
| 7                | 0.19                   | 0.14 | 0.11 | 0.17 | 0.13 | 0.10 | 0.15 | 0.11 | 0.08 | 0.12 | 0.09 | 0.07 | 0.09 | 0.07 | 0.05 | 0.04 |
| 8                | 0.17                   | 0.12 | 0.09 | 0.16 | 0.12 | 0.09 | 0.13 | 0.10 | 0.07 | 0.11 | 0.08 | 0.06 | 0.09 | 0.06 | 0.05 | 0.03 |
| 9                | 0.15                   | 0.11 | 0.08 | 0.14 | 0.10 | 0.07 | 0.12 | 0.09 | 0.06 | 0.10 | 0.07 | 0.05 | 0.08 | 0.06 | 0.04 | 0.03 |
| 10               | 0.14                   | 0.10 | 0.07 | 0.13 | 0.09 | 0.07 | 0.11 | 0.08 | 0.06 | 0.09 | 0.06 | 0.04 | 0.07 | 0.05 | 0.03 | 0.02 |

## Lâmpada Vapor Metálico 70W

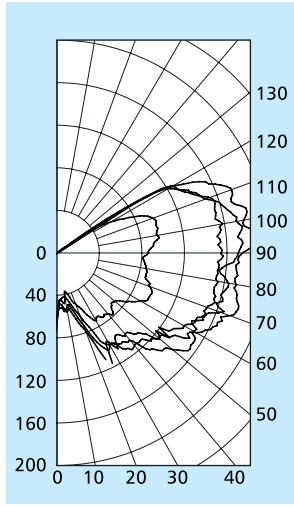
### Fluxo Luminoso Total 2.761,1 lm



| $\rho$ Teto[%]   | 80                     |      |      | 70   |      |      | 50   |      |      | 30   |      |      | 10   |      |      | 0    |
|------------------|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| $\rho$ Parede[%] | 50                     | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 0    |
| $\rho$ Piso[%]   | 20                     |      |      | 20   |      |      | 20   |      |      | 20   |      |      | 20   |      |      | 0    |
| K                | U: Fator de Utilização |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 0                | 0.55                   | 0.55 | 0.55 | 0.52 | 0.52 | 0.52 | 0.45 | 0.45 | 0.45 | 0.39 | 0.39 | 0.39 | 0.34 | 0.34 | 0.34 | 0.31 |
| 1                | 0.43                   | 0.40 | 0.37 | 0.40 | 0.37 | 0.35 | 0.34 | 0.32 | 0.30 | 0.29 | 0.27 | 0.26 | 0.24 | 0.23 | 0.22 | 0.19 |
| 2                | 0.36                   | 0.31 | 0.28 | 0.33 | 0.29 | 0.26 | 0.28 | 0.25 | 0.22 | 0.24 | 0.21 | 0.19 | 0.19 | 0.17 | 0.16 | 0.13 |
| 3                | 0.30                   | 0.25 | 0.21 | 0.28 | 0.24 | 0.20 | 0.24 | 0.20 | 0.17 | 0.20 | 0.17 | 0.14 | 0.16 | 0.14 | 0.12 | 0.10 |
| 4                | 0.26                   | 0.21 | 0.17 | 0.24 | 0.20 | 0.16 | 0.21 | 0.17 | 0.14 | 0.17 | 0.14 | 0.11 | 0.14 | 0.11 | 0.09 | 0.07 |
| 5                | 0.23                   | 0.18 | 0.14 | 0.21 | 0.17 | 0.13 | 0.18 | 0.14 | 0.11 | 0.15 | 0.12 | 0.09 | 0.12 | 0.10 | 0.08 | 0.06 |
| 6                | 0.20                   | 0.15 | 0.12 | 0.19 | 0.14 | 0.11 | 0.16 | 0.12 | 0.09 | 0.13 | 0.10 | 0.08 | 0.11 | 0.08 | 0.06 | 0.05 |
| 7                | 0.18                   | 0.13 | 0.10 | 0.17 | 0.12 | 0.09 | 0.14 | 0.11 | 0.08 | 0.12 | 0.09 | 0.07 | 0.10 | 0.07 | 0.05 | 0.04 |
| 8                | 0.16                   | 0.12 | 0.09 | 0.15 | 0.11 | 0.08 | 0.13 | 0.09 | 0.07 | 0.11 | 0.08 | 0.06 | 0.09 | 0.06 | 0.05 | 0.03 |
| 9                | 0.15                   | 0.10 | 0.08 | 0.14 | 0.10 | 0.07 | 0.12 | 0.08 | 0.06 | 0.10 | 0.07 | 0.05 | 0.08 | 0.06 | 0.04 | 0.03 |
| 10               | 0.13                   | 0.09 | 0.07 | 0.13 | 0.09 | 0.06 | 0.11 | 0.07 | 0.05 | 0.09 | 0.06 | 0.04 | 0.07 | 0.05 | 0.03 | 0.02 |

## Lâmpada Vapor Metálico 150W

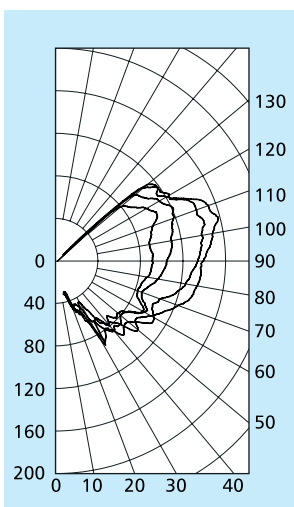
### Fluxo Luminoso Total 6.195,0 lm



| ρ Teto[%]   | 80                     |      |      | 70   |      |      | 50   |      |      | 30   |      |      | 10   |      |      | 0    |
|-------------|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| ρ Parede[%] | 50                     | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 0    |
| ρ Piso[%]   | 20                     |      |      | 20   |      |      | 20   |      |      | 20   |      |      | 20   |      |      | 0    |
| K           | U: Fator de Utilização |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 0           | 0.54                   | 0.54 | 0.54 | 0.51 | 0.51 | 0.51 | 0.44 | 0.44 | 0.44 | 0.38 | 0.38 | 0.38 | 0.33 | 0.33 | 0.33 | 0.30 |
| 1           | 0.43                   | 0.40 | 0.37 | 0.40 | 0.37 | 0.34 | 0.34 | 0.32 | 0.30 | 0.29 | 0.27 | 0.25 | 0.24 | 0.22 | 0.21 | 0.19 |
| 2           | 0.36                   | 0.31 | 0.27 | 0.33 | 0.29 | 0.25 | 0.28 | 0.25 | 0.22 | 0.23 | 0.21 | 0.19 | 0.19 | 0.17 | 0.15 | 0.13 |
| 3           | 0.30                   | 0.25 | 0.21 | 0.28 | 0.23 | 0.20 | 0.24 | 0.20 | 0.17 | 0.20 | 0.17 | 0.14 | 0.16 | 0.14 | 0.12 | 0.10 |
| 4           | 0.26                   | 0.21 | 0.17 | 0.24 | 0.20 | 0.16 | 0.20 | 0.17 | 0.14 | 0.17 | 0.14 | 0.11 | 0.14 | 0.11 | 0.09 | 0.07 |
| 5           | 0.23                   | 0.18 | 0.14 | 0.21 | 0.17 | 0.13 | 0.18 | 0.14 | 0.11 | 0.15 | 0.12 | 0.09 | 0.12 | 0.09 | 0.07 | 0.06 |
| 6           | 0.20                   | 0.15 | 0.12 | 0.19 | 0.14 | 0.11 | 0.16 | 0.12 | 0.09 | 0.13 | 0.10 | 0.08 | 0.11 | 0.08 | 0.06 | 0.05 |
| 7           | 0.18                   | 0.13 | 0.10 | 0.17 | 0.12 | 0.09 | 0.14 | 0.11 | 0.08 | 0.12 | 0.09 | 0.07 | 0.10 | 0.07 | 0.05 | 0.04 |
| 8           | 0.16                   | 0.12 | 0.09 | 0.15 | 0.11 | 0.08 | 0.13 | 0.09 | 0.07 | 0.11 | 0.08 | 0.06 | 0.09 | 0.06 | 0.05 | 0.03 |
| 9           | 0.15                   | 0.10 | 0.08 | 0.14 | 0.10 | 0.07 | 0.12 | 0.08 | 0.06 | 0.10 | 0.07 | 0.05 | 0.08 | 0.06 | 0.04 | 0.03 |
| 10          | 0.13                   | 0.09 | 0.07 | 0.12 | 0.09 | 0.06 | 0.11 | 0.07 | 0.05 | 0.09 | 0.06 | 0.04 | 0.07 | 0.05 | 0.03 | 0.02 |

## Lâmpada Vapor Metálico 250W

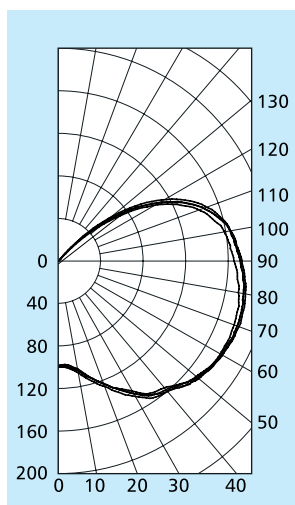
### Fluxo Luminoso Total 1.088,8 lm



| ρ Teto[%]   | 80                     |      |      | 70   |      |      | 50   |      |      | 30   |      |      | 10   |      |      | 0    |
|-------------|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| ρ Parede[%] | 50                     | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 0    |
| ρ Piso[%]   | 20                     |      |      | 20   |      |      | 20   |      |      | 20   |      |      | 20   |      |      | 0    |
| K           | U: Fator de Utilização |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 0           | 0.59                   | 0.59 | 0.59 | 0.55 | 0.55 | 0.55 | 0.47 | 0.47 | 0.47 | 0.40 | 0.40 | 0.40 | 0.33 | 0.33 | 0.33 | 0.30 |
| 1           | 0.47                   | 0.43 | 0.40 | 0.43 | 0.40 | 0.37 | 0.36 | 0.34 | 0.32 | 0.30 | 0.28 | 0.26 | 0.24 | 0.23 | 0.21 | 0.19 |
| 2           | 0.39                   | 0.34 | 0.31 | 0.36 | 0.32 | 0.28 | 0.30 | 0.27 | 0.24 | 0.24 | 0.22 | 0.20 | 0.19 | 0.17 | 0.16 | 0.13 |
| 3           | 0.33                   | 0.28 | 0.24 | 0.31 | 0.26 | 0.22 | 0.25 | 0.22 | 0.19 | 0.21 | 0.18 | 0.15 | 0.16 | 0.14 | 0.12 | 0.10 |
| 4           | 0.29                   | 0.23 | 0.19 | 0.27 | 0.22 | 0.18 | 0.22 | 0.18 | 0.15 | 0.18 | 0.15 | 0.12 | 0.14 | 0.12 | 0.10 | 0.07 |
| 5           | 0.25                   | 0.20 | 0.16 | 0.23 | 0.18 | 0.15 | 0.19 | 0.15 | 0.12 | 0.16 | 0.12 | 0.10 | 0.12 | 0.10 | 0.08 | 0.06 |
| 6           | 0.22                   | 0.17 | 0.13 | 0.21 | 0.16 | 0.12 | 0.17 | 0.13 | 0.10 | 0.14 | 0.11 | 0.08 | 0.11 | 0.08 | 0.06 | 0.05 |
| 7           | 0.20                   | 0.15 | 0.11 | 0.18 | 0.14 | 0.11 | 0.15 | 0.12 | 0.09 | 0.12 | 0.09 | 0.07 | 0.10 | 0.07 | 0.05 | 0.04 |
| 8           | 0.18                   | 0.13 | 0.10 | 0.17 | 0.12 | 0.09 | 0.14 | 0.10 | 0.08 | 0.11 | 0.08 | 0.06 | 0.09 | 0.06 | 0.05 | 0.03 |
| 9           | 0.16                   | 0.12 | 0.09 | 0.15 | 0.11 | 0.08 | 0.13 | 0.09 | 0.07 | 0.10 | 0.07 | 0.05 | 0.08 | 0.06 | 0.04 | 0.03 |
| 10          | 0.15                   | 0.10 | 0.08 | 0.14 | 0.10 | 0.07 | 0.12 | 0.08 | 0.06 | 0.09 | 0.07 | 0.05 | 0.07 | 0.05 | 0.04 | 0.02 |

## Lâmpada Vapor de Mercúrio 125W

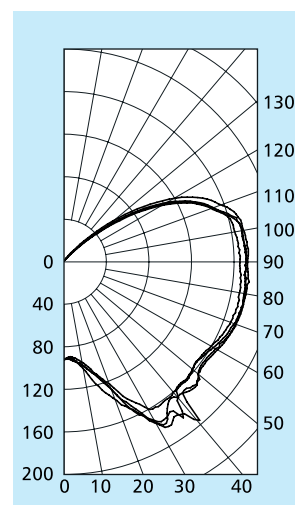
### Fluxo Luminoso Total 3.680,9 lm



| $\rho$ Teto[%]   | 80                     |      |      | 70   |      |      | 50   |      |      | 30   |      |      | 10   |      |      | 0    |
|------------------|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| $\rho$ Parede[%] | 50                     | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 0    |
| $\rho$ Piso[%]   | 20                     |      |      | 20   |      |      | 20   |      |      | 20   |      |      | 20   |      |      | 0    |
| K                | U: Fator de Utilização |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 0                | 0.64                   | 0.64 | 0.64 | 0.60 | 0.60 | 0.60 | 0.53 | 0.53 | 0.53 | 0.46 | 0.46 | 0.46 | 0.39 | 0.39 | 0.39 | 0.36 |
| 1                | 0.51                   | 0.48 | 0.44 | 0.48 | 0.44 | 0.41 | 0.41 | 0.38 | 0.36 | 0.35 | 0.33 | 0.31 | 0.29 | 0.28 | 0.26 | 0.23 |
| 2                | 0.43                   | 0.38 | 0.33 | 0.40 | 0.35 | 0.31 | 0.34 | 0.30 | 0.27 | 0.29 | 0.26 | 0.23 | 0.24 | 0.22 | 0.20 | 0.17 |
| 3                | 0.37                   | 0.31 | 0.26 | 0.34 | 0.29 | 0.25 | 0.29 | 0.25 | 0.21 | 0.24 | 0.21 | 0.18 | 0.20 | 0.17 | 0.15 | 0.13 |
| 4                | 0.32                   | 0.26 | 0.21 | 0.29 | 0.24 | 0.20 | 0.25 | 0.21 | 0.17 | 0.21 | 0.18 | 0.15 | 0.17 | 0.15 | 0.12 | 0.10 |
| 5                | 0.28                   | 0.22 | 0.18 | 0.26 | 0.21 | 0.17 | 0.22 | 0.18 | 0.14 | 0.18 | 0.15 | 0.12 | 0.15 | 0.12 | 0.10 | 0.08 |
| 6                | 0.25                   | 0.19 | 0.15 | 0.23 | 0.18 | 0.14 | 0.20 | 0.15 | 0.12 | 0.16 | 0.13 | 0.10 | 0.14 | 0.11 | 0.08 | 0.07 |
| 7                | 0.22                   | 0.17 | 0.13 | 0.21 | 0.16 | 0.12 | 0.18 | 0.13 | 0.10 | 0.15 | 0.11 | 0.09 | 0.12 | 0.09 | 0.07 | 0.06 |
| 8                | 0.20                   | 0.15 | 0.11 | 0.18 | 0.14 | 0.10 | 0.16 | 0.12 | 0.09 | 0.13 | 0.10 | 0.08 | 0.11 | 0.08 | 0.06 | 0.05 |
| 9                | 0.18                   | 0.13 | 0.10 | 0.17 | 0.12 | 0.09 | 0.14 | 0.11 | 0.08 | 0.12 | 0.09 | 0.07 | 0.10 | 0.08 | 0.06 | 0.04 |
| 10               | 0.16                   | 0.12 | 0.09 | 0.15 | 0.11 | 0.08 | 0.13 | 0.10 | 0.07 | 0.11 | 0.08 | 0.06 | 0.09 | 0.07 | 0.05 | 0.04 |

## Lâmpada Vapor de Mercúrio 250W

### Fluxo Luminoso Total 5.832,8 lm



| $\rho$ Teto[%]   | 80                     |      |      | 70   |      |      | 50   |      |      | 30   |      |      | 10   |      |      | 0    |
|------------------|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| $\rho$ Parede[%] | 50                     | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 0    |
| $\rho$ Piso[%]   | 20                     |      |      | 20   |      |      | 20   |      |      | 20   |      |      | 20   |      |      | 0    |
| K                | U: Fator de Utilização |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 0                | 0.53                   | 0.53 | 0.53 | 0.50 | 0.50 | 0.50 | 0.44 | 0.44 | 0.44 | 0.38 | 0.38 | 0.38 | 0.32 | 0.32 | 0.32 | 0.30 |
| 1                | 0.43                   | 0.40 | 0.37 | 0.40 | 0.37 | 0.35 | 0.34 | 0.32 | 0.30 | 0.29 | 0.27 | 0.26 | 0.24 | 0.23 | 0.22 | 0.19 |
| 2                | 0.36                   | 0.32 | 0.28 | 0.33 | 0.29 | 0.26 | 0.28 | 0.25 | 0.23 | 0.24 | 0.21 | 0.19 | 0.20 | 0.18 | 0.16 | 0.14 |
| 3                | 0.31                   | 0.26 | 0.22 | 0.28 | 0.24 | 0.21 | 0.24 | 0.21 | 0.18 | 0.20 | 0.18 | 0.15 | 0.17 | 0.14 | 0.13 | 0.11 |
| 4                | 0.27                   | 0.22 | 0.18 | 0.25 | 0.20 | 0.17 | 0.21 | 0.17 | 0.15 | 0.18 | 0.15 | 0.12 | 0.14 | 0.12 | 0.10 | 0.08 |
| 5                | 0.23                   | 0.19 | 0.15 | 0.22 | 0.17 | 0.14 | 0.18 | 0.15 | 0.12 | 0.15 | 0.13 | 0.10 | 0.13 | 0.10 | 0.08 | 0.07 |
| 6                | 0.21                   | 0.16 | 0.13 | 0.19 | 0.15 | 0.12 | 0.16 | 0.13 | 0.10 | 0.14 | 0.11 | 0.09 | 0.11 | 0.09 | 0.07 | 0.06 |
| 7                | 0.18                   | 0.14 | 0.11 | 0.17 | 0.13 | 0.10 | 0.15 | 0.11 | 0.09 | 0.12 | 0.10 | 0.07 | 0.10 | 0.08 | 0.06 | 0.05 |
| 8                | 0.17                   | 0.12 | 0.09 | 0.16 | 0.12 | 0.09 | 0.13 | 0.10 | 0.08 | 0.11 | 0.08 | 0.06 | 0.09 | 0.07 | 0.05 | 0.04 |
| 9                | 0.15                   | 0.11 | 0.08 | 0.14 | 0.10 | 0.08 | 0.12 | 0.09 | 0.07 | 0.10 | 0.08 | 0.06 | 0.08 | 0.06 | 0.05 | 0.04 |
| 10               | 0.1                    | 0.10 | 0.07 | 0.13 | 0.09 | 0.07 | 0.11 | 0.08 | 0.06 | 0.09 | 0.07 | 0.05 | 0.08 | 0.06 | 0.04 | 0.03 |