

Projeto para Zona 2

MODELO PTWNA (com alojamento)

ATMOSFERAS EXPLOSIVAS
ZONAS 2 e 22 – Grupo II
GRAU DE PROTEÇÃO: IP66
CERTIFICADO DE CONFORMIDADE
2007EC02CP031

**DADOS CONSTRUTIVOS**

Fabricado em liga de alumínio fundido copper free, resistente à corrosão, visor de vidro temperado, resistente a choques térmicos e impactos, soquete de porcelana antivibratório.

Parafusos, arruelas e chassi em aço inox.

ACABAMENTO

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

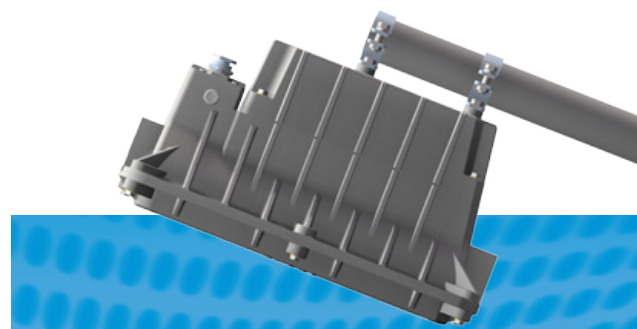
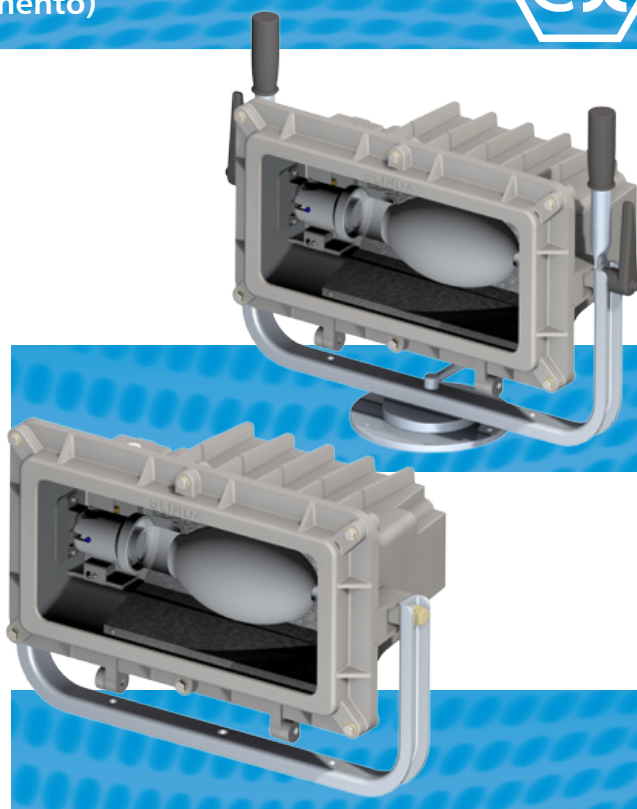
ATMOSFERAS EXPLOSIVAS

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

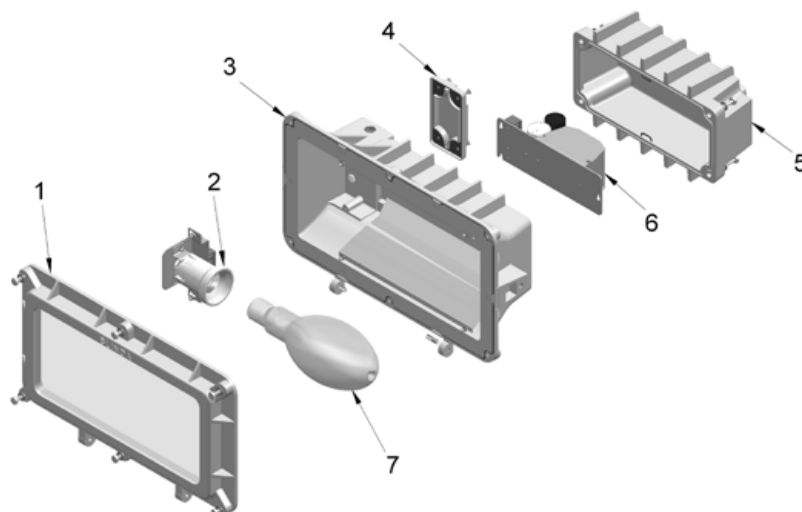
Tipo de proteção: Ex-nA.

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.

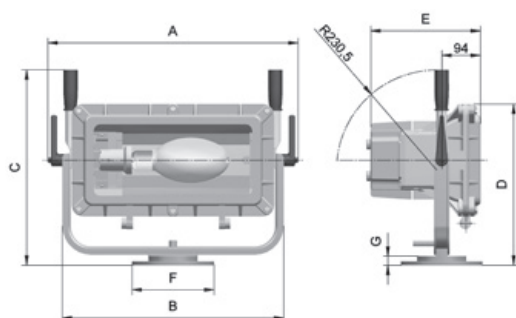


- 01- Conjunto ótico
- 02- Conjunto soquete
- 03- Corpo
- 04- Tampa da caixa de ligação
- 05- Caixa do reator
- 06- Módulo de partida
- 07- Lâmpada

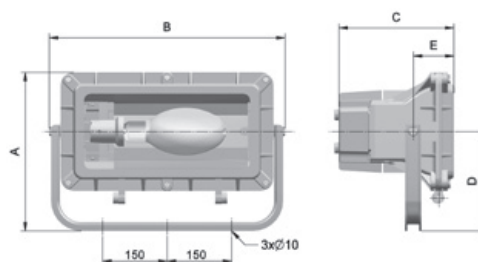


DADOS TÉCNICOS

PTWNA-...D



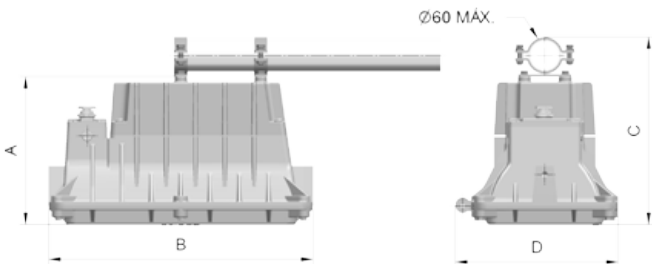
PTWNA-...S



Modelo	Lâmpada	Potência	Soquete	Tensão	Class. Temp.	Dimensões (mm)						
						A	B	C	D	E	F	G
PTWNA-VSD70D	Vapor de Sódio	70 W	E27	220V	T2	610	540	480	400	270	200	25
PTWNA-VSD150D	Vapor de Sódio	150 W	E27	220V	T2	610	540	480	400	270	200	25
PTWNA-VSD250D	Vapor de Sódio	250 W	E40	220V	T1	610	540	480	400	270	200	25
PTWNA-VSD400D	Vapor de Sódio	400 W	E40	220V	T1	610	540	480	400	270	200	25
PTWNA-VSD600D	Vapor de Sódio	600 W	E40	220V	500°C	610	540	480	400	270	200	25
PTWNA-VMT70D	Vapor Metálico	70 W	E27	220V	T2	610	540	480	400	270	200	25
PTWNA-VMT150D	Vapor Metálico	150 W	E27	220V	T1	610	540	480	400	270	200	25
PTWNA-VMT250D	Vapor Metálico	250 W	E40	220V	T1	610	540	480	400	270	200	25
PTWNA-VMT400D	Vapor Metálico	400 W	E40	220V	T1	610	540	480	400	270	200	25
PTWNA-VMC80D	Vapor de Mercúrio	80 W	E27	220V	T2	610	540	480	400	270	200	25
PTWNA-VMC125D	Vapor de Mercúrio	125 W	E27	220V	T1	610	540	480	400	270	200	25
PTWNA-VMC250D	Vapor de Mercúrio	250 W	E40	220V	T1	610	540	480	400	270	200	25
PTWNA-VMC400D	Vapor de Mercúrio	400 W	E40	220V	T1	610	540	480	400	270	200	25

Modelo	Lâmpada	Potência	Soquete	Tensão	Class. Temp.	Dimensões (mm)				
						A	B	C	D	E
PTWNA-VSD70S	Vapor de Sódio	70 W	E27	220V	T2	370	550	270	230	95
PTWNA-VSD150S	Vapor de Sódio	150 W	E27	220V	T2	370	550	270	230	95
PTWNA-VSD250S	Vapor de Sódio	250 W	E40	220V	T1	370	550	270	230	95
PTWNA-VSD400S	Vapor de Sódio	400 W	E40	220V	T1	370	550	270	230	95
PTWNA-VSD600S	Vapor de Sódio	600 W	E40	220V	500°C	370	550	270	230	95
PTWNA-VMT70S	Vapor Metálico	70 W	E27	220V	T2	370	550	270	230	95
PTWNA-VMT150S	Vapor Metálico	150 W	E27	220V	T1	370	550	270	230	95
PTWNA-VMT250S	Vapor Metálico	250 W	E40	220V	T1	370	550	270	230	95
PTWNA-VMT400S	Vapor Metálico	400 W	E40	220V	T1	370	550	270	230	95
PTWNA-VMC80S	Vapor de Mercúrio	80 W	E27	220V	T2	370	550	270	230	95
PTWNA-VMC125S	Vapor de Mercúrio	125 W	E27	220V	T1	370	550	270	230	95
PTWNA-VMC250S	Vapor de Mercúrio	250 W	E40	220V	T1	370	550	270	230	95
PTWNA-VMC400S	Vapor de Mercúrio	400 W	E40	220V	T1	370	550	270	230	95

PTWNA-...P



Modelo	Lâmpada	Potência	Soquete	Tensão	Class. Temp.	Dimensões (mm)			
						A	B	C	D
PTWNA-VSD70P	Vapor de Sódio	70 W	E27	220V	T2	280	495	350	305
PTWNA-VSD150P	Vapor de Sódio	150 W	E27	220V	T2	280	495	350	305
PTWNA-VSD250P	Vapor de Sódio	250 W	E40	220V	T1	280	495	350	305
PTWNA-VSD400P	Vapor de Sódio	400 W	E40	220V	T1	280	495	350	305
PTWNA-VSD600P	Vapor de Sódio	600 W	E40	220V	500°C	280	495	350	305
PTWNA-VMT70P	Vapor Metálico	70 W	E27	220V	T2	280	495	350	305
PTWNA-VMT150P	Vapor Metálico	150 W	E27	220V	T1	280	495	350	305
PTWNA-VMT250P	Vapor Metálico	250 W	E40	220V	T1	280	495	350	305
PTWNA-VMT400P	Vapor Metálico	400 W	E40	220V	T1	280	495	350	305
PTWNA-VMC80P	Vapor de Mercúrio	80 W	E27	220V	T2	280	495	350	305
PTWNA-VMC125P	Vapor de Mercúrio	125 W	E27	220V	T1	280	495	350	305
PTWNA-VMC250P	Vapor de Mercúrio	250 W	E40	220V	T1	280	495	350	305
PTWNA-VMC400P	Vapor de Mercúrio	400 W	E40	220V	T1	280	495	350	305

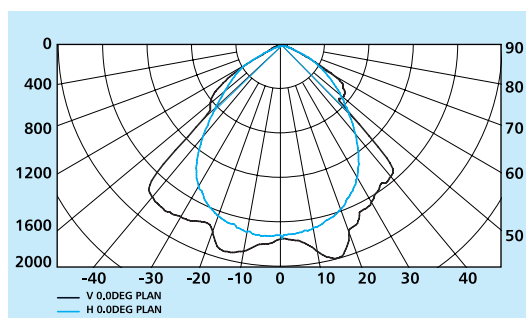
A pedido podem ser fornecidos com lâmpada.
Fornecido com uma entrada rosqueada.
Roscas: BSP (B), NPT (N) ou métrica.
Ø Entradas: 1/2", 3/4", M20 ou M25.
Prensa cabos fornecidos separadamente.
Frequência: 50/60 Hz

Para especificar:
MODELO + ENTRADA
Ex.: PTWNA-VMT250P 3/4"B

FOTOMETRIA

Lâmpada Vapor de Sódio 250W

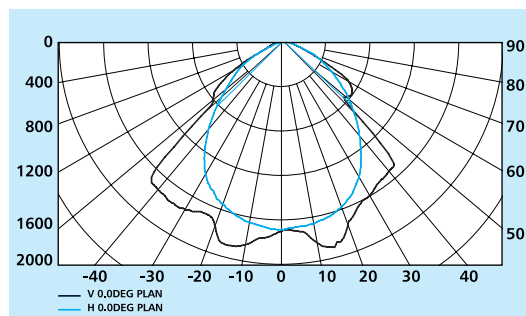
Fluxo Luminoso Total 1.094,1 lm



AREA FLUX DIAGRAMA																			Φ_t	Φ_a
-90	0.02	0.11	0.28	0.50	0.70	0.82	0.89	0.92	0.89	0.85	0.83	0.76	0.66	0.51	0.32	0.15	0.04	0.00	9.25	0.00
80	0.04	0.30	0.76	1.20	1.61	2.00	2.33	2.66	2.80	2.73	2.48	2.12	1.75	1.38	1.00	0.56	0.18	0.02	25.9	0.00
70	0.07	0.49	1.11	2.01	3.60	5.74	10.2	13.1	12.0	13.9	17.7	9.79	5.72	3.53	1.74	0.91	0.34	0.04	102	64.1
60	0.09	0.63	1.55	3.75	10.2	19.3	33.2	33.1	31.4	33.2	38.5	35.6	17.6	11.2	3.98	1.29	0.48	0.06	275	262
50	0.12	0.75	2.20	7.48	19.8	38.9	48.5	54.0	50.8	53.0	57.0	52.3	31.2	20.2	8.76	2.03	0.59	0.07	448	438
40	0.14	0.87	2.89	13.0	28.5	56.3	62.7	73.6	69.1	72.6	77.7	66.2	48.4	25.1	14.4	3.14	0.69	0.09	615	608
30	0.15	0.99	3.72	17.8	38.0	66.6	71.9	86.4	83.1	85.7	91.3	76.6	61.5	28.5	18.8	4.46	0.78	0.10	736	730
20	0.16	1.08	4.59	20.9	45.2	69.3	76.8	93.8	89.3	90.2	98.4	82.5	66.4	31.8	21.5	5.69	0.86	0.11	799	793
10	0.17	1.12	5.13	22.4	48.2	68.7	78.7	97.3	91.8	90.6	100	84.0	68.0	34.8	22.8	6.40	0.90	0.12	821	816
0	0.17	1.12	5.07	22.5	48.1	67.8	78.3	98.2	92.7	90.2	101	84.4	68.2	35.6	23.1	6.37	0.89	0.12	824	819
-10	0.16	1.08	4.44	21.3	44.8	66.5	76.7	97.8	92.4	89.7	99.5	82.1	66.8	34.2	22.1	5.61	0.84	0.11	806	801
-20	0.15	0.99	3.54	17.9	38.2	65.3	71.7	92.0	89.3	87.4	93.0	76.7	62.0	31.4	19.4	4.35	0.76	0.10	754	748
-30	0.13	0.86	2.73	12.6	29.7	58.2	64.8	78.4	80.8	79.4	79.7	67.8	51.3	27.6	14.5	2.94	0.66	0.09	652	645
-40	0.11	0.74	2.07	6.72	21.0	40.3	52.2	53.6	53.0	52.6	54.3	51.8	33.3	21.7	8.25	1.79	0.56	0.07	454	445
-50	0.09	0.62	1.51	3.10	9.40	18.2	33.5	32.4	29.6	30.0	33.1	30.8	16.4	10.3	3.34	1.14	0.46	0.05	254	239
-60	0.06	0.46	1.10	1.95	2.72	4.15	7.33	12.4	11.7	11.9	12.2	6.36	3.79	2.48	1.38	0.81	0.32	0.03	81.2	46.4
-70	0.04	0.27	0.70	1.13	1.36	1.50	1.67	1.64	1.48	1.39	1.39	1.36	1.23	1.05	0.83	0.49	0.16	0.01	17.7	0.00
-80	0.02	0.09	0.22	0.38	0.51	0.56	0.55	0.49	0.38	0.35	0.40	0.42	0.40	0.34	0.22	0.10	0.03	0.00	5.46	0.00
-90	0.02	0.09	0.22	0.38	0.51	0.56	0.55	0.49	0.38	0.35	0.40	0.42	0.40	0.34	0.22	0.10	0.03	0.00	5.46	0.00
Φ_t	2.75	18.8	65.8	250	575	1017	1188	1312	1251	1232	1283	1099	861	457	245	67.3	13.7	1.78	10941	---
Φ_a	0.00	0.00	26.1	224	555	997	1172	1298	1237	1219	1271	1083	843	440	225	36.3	0.00	0.00	---	10627

Lâmpada Vapor de Sódio 400W

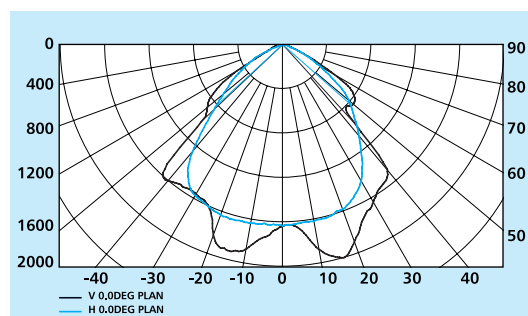
Fluxo Luminoso Total 1.969,4 lm



	AREA FLUX DIAGRAM																		Φt	Φa
-90	0.05	0.29	0.74	1.31	1.81	2.12	2.28	2.27	2.13	2.05	2.05	1.96	1.77	1.41	0.89	0.42	0.11	0.01	23.7	0.00
80	0.11	0.77	2.01	3.16	4.30	5.35	6.33	8.00	8.36	8.12	7.23	5.69	4.82	3.82	2.75	1.57	0.52	0.05	73.0	0.00
70	0.18	1.28	2.98	5.62	9.81	17.0	35.9	49.7	44.4	43.7	48.7	32.0	17.6	10.8	5.10	2.54	0.96	0.11	328	247
60	0.24	1.68	4.38	9.90	26.7	52.2	96.8	94.3	85.5	82.6	88.5	90.6	48.3	32.1	12.1	3.78	1.36	0.16	731	699
50	0.30	2.04	5.81	19.8	47.2	109	139	143	131	128	134	126	92.6	50.4	25.7	6.14	1.66	0.20	1163	1140
40	0.36	2.43	7.58	32.5	71.4	156	172	186	176	175	181	159	132	62.8	39.5	9.62	1.96	0.25	1566	1548
30	0.40	2.73	10.0	43.5	101	180	193	216	211	210	216	183	157	78.5	49.3	13.6	2.25	0.28	1869	1854
20	0.43	2.91	12.7	50.5	123	192	206	235	231	229	238	198	169	95.0	55.1	17.0	2.48	0.31	2057	2045
10	0.44	3.01	14.4	54.4	136	196	212	245	240	238	247	206	174	104	57.7	19.0	2.58	0.31	2149	2136
0	0.44	2.99	14.4	55.6	138	200	217	253	243	235	245	204	172	104	58.0	18.8	2.53	0.31	2164	2152
-10	0.43	2.88	12.6	53.2	129	196	213	246	233	226	236	198	168	96.4	56.1	16.5	2.34	0.30	2085	2072
-20	0.40	2.70	9.70	45.7	106	185	199	226	215	208	215	182	158	81.4	50.4	12.7	2.07	0.27	1901	1886
-30	0.35	2.45	6.97	33.3	74.8	161	175	186	178	172	176	158	132	66.0	39.2	8.55	1.79	0.24	1572	1554
-40	0.29	2.08	5.18	18.2	47.8	109	138	133	124	120	124	123	86.4	51.3	22.7	4.99	1.51	0.19	1111	1088
-50	0.23	1.67	4.03	7.60	21.1	43.3	89.1	87.0	77.3	75.7	81.5	78.8	39.0	25.3	9.09	3.04	1.21	0.15	645	605
-60	0.17	1.20	2.93	4.38	6.28	9.22	18.9	31.2	28.7	28.4	29.8	16.1	9.66	6.68	3.65	2.15	0.84	0.10	200	107
-70	0.11	0.67	1.75	2.76	3.18	3.46	3.60	3.49	3.25	3.20	3.38	3.35	3.13	2.74	2.17	1.28	0.43	0.06	42.0	0.00
-80	0.05	0.26	0.58	0.95	1.24	1.34	1.28	1.11	0.88	0.85	1.00	1.09	1.05	0.91	0.63	0.33	0.12	0.02	13.7	0.00
-90																				
	-90	-80	-40	-60	-50	-40	-30	-20	-10	0	10	20	30	40	50	60	70	80	90	
Φt	4.97	34.1	119	442	1048	1817	2119	2347	2232	2187	2276	1965	1567	873	490	142	26.7	3.31	19694	---
Φa	0.00	0.00	47.4	397	1013	1784	2091	2324	2207	2163	2253	1936	1535	842	455	88.7	0.00	0.00	---	19135

Lâmpada Vapor Metálico 250W

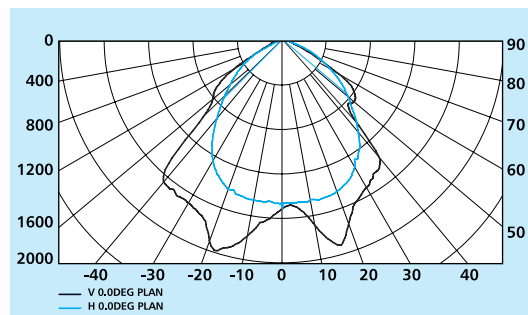
Fluxo Luminoso Total 7.681 lm



	AREA FLUX DIAGRAMA																		Φt	Φa
-90	0.02	0.11	0.28	0.50	0.70	0.82	0.89	0.92	0.89	0.85	0.83	0.76	0.66	0.51	0.32	0.15	0.04	0.00	9.25	0.00
80	0.04	0.30	0.76	1.20	1.61	2.00	2.33	2.66	2.80	2.73	2.48	2.12	1.75	1.38	1.00	0.56	0.18	0.02	25.9	0.00
70	0.07	0.49	1.11	2.01	3.60	5.74	10.2	13.1	12.0	13.9	17.7	9.79	5.72	3.53	1.74	0.91	0.34	0.04	102	64.
60	0.09	0.63	1.55	3.75	10.2	19.3	33.2	33.1	31.4	33.2	38.5	35.6	17.6	11.2	3.98	1.29	0.48	0.06	275	262
50	0.12	0.75	2.20	7.48	19.8	38.9	48.5	54.0	50.8	53.0	57.0	52.3	31.2	20.2	8.76	2.03	0.59	0.07	448	438
40	0.14	0.87	2.89	13.0	28.5	56.3	62.7	73.6	69.1	72.6	77.7	66.2	48.4	25.1	14.4	3.14	0.69	0.09	615	608
30	0.15	0.99	3.72	17.8	38.0	66.6	71.9	86.4	83.1	85.7	91.3	76.6	61.5	28.5	18.8	4.46	0.78	0.10	736	730
20	0.16	1.08	4.59	20.9	45.2	69.3	76.8	93.8	89.3	90.2	98.4	82.5	66.4	31.8	21.5	5.69	0.86	0.11	799	793
10	0.17	1.12	5.13	22.4	48.2	68.7	78.7	97.3	91.8	90.6	100	84.0	68.0	34.8	22.8	6.40	0.90	0.12	821	816
0	0.17	1.12	5.07	22.5	48.1	67.8	78.3	98.2	92.7	90.2	101	84.4	68.2	35.6	23.1	6.37	0.89	0.12	824	819
-10	0.16	1.08	4.44	21.3	44.8	66.5	76.7	97.8	92.4	89.7	99.5	82.1	66.8	34.2	22.1	5.61	0.84	0.11	806	801
-20	0.15	0.99	3.54	17.9	38.2	65.3	71.7	92.0	89.3	87.4	93.0	76.7	62.0	31.4	19.4	4.35	0.76	0.10	754	748
-30	0.13	0.86	2.73	12.6	29.7	58.2	64.8	78.4	80.8	79.4	79.7	67.8	51.3	27.6	14.5	2.94	0.66	0.09	652	645
-40	0.11	0.74	2.07	6.72	21.0	40.3	52.2	53.6	53.0	52.6	54.3	51.8	33.3	21.7	8.25	1.79	0.56	0.07	454	445
-50	0.09	0.62	1.51	3.10	9.40	18.2	33.5	32.4	29.6	30.0	33.1	30.8	16.4	10.3	3.34	1.14	0.46	0.05	254	239
-60	0.06	0.46	1.10	1.95	2.72	4.15	7.33	12.4	11.7	11.9	12.2	6.36	3.79	2.48	1.38	0.81	0.32	0.03	81.2	46.4
-70	0.04	0.27	0.70	1.13	1.36	1.50	1.67	1.64	1.48	1.39	1.39	1.36	1.23	1.05	0.83	0.49	0.16	0.01	17.7	0.00
-80	0.02	0.09	0.22	0.38	0.51	0.56	0.55	0.49	0.38	0.35	0.40	0.42	0.40	0.34	0.22	0.10	0.03	0.00	5.46	0.00
-90																				
	-90	-80	-40	-60	-50	-40	-30	-20	-10	0	10	20	30	40	50	60	70	80	90	
Φt	1.89	12.6	43.6	176	392	650	772	922	883	886	958	812	605	322	186	48.2	9.54	1.19	7681	---
Φa	0.00	0.00	14.1	157	377	636	760	912	872	876	950	800	592	309	172	26.0	0.00	0.00	---	7454

Lâmpada Vapor Metálico 400W

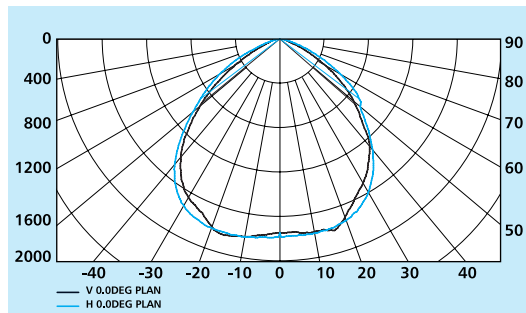
Fluxo Luminoso Total 1.372,0 lm



AREA FLUX DIAGRAMA																			Φt	Φa
-90	0.03	0.19	0.50	0.90	1.27	1.54	1.76	1.88	1.89	1.82	1.72	1.55	1.31	0.99	0.61	0.28	0.08	0.00	18.3	0.00
80	0.07	0.52	1.36	2.16	2.97	3.97	4.95	6.21	6.83	6.57	5.54	4.45	3.58	2.71	1.92	1.10	0.36	0.03	55.3	0.00
70	0.12	0.85	1.93	3.57	6.65	12.3	25.0	36.7	31.9	33.1	35.8	20.8	12.7	6.96	3.28	1.75	0.67	0.07	234	174
60	0.16	1.09	2.68	6.33	19.3	37.8	73.8	72.9	63.5	64.1	69.6	61.8	35.9	21.9	7.26	2.44	0.93	0.11	542	517
50	0.20	1.28	3.67	12.8	35.8	75.3	108	114	98.1	98.9	106	93.3	58.5	39.2	15.5	3.64	1.11	0.14	866	848
40	0.24	1.48	4.75	22.1	49.9	111	135	146	129	128	137	117	83.9	48.9	26.0	5.48	1.28	0.17	1147	1134
30	0.26	1.66	6.11	30.3	65.1	131	147	164	148	144	156	130	103	55.6	34.5	7.63	1.42	0.20	1325	1314
20	0.27	1.79	7.43	35.6	77.4	137	155	173	157	150	166	138	115	61.0	39.6	9.55	1.53	0.21	1426	1415
10	0.28	1.85	8.30	38.1	83.1	138	159	181	160	151	175	145	119	63.9	41.8	10.6	1.60	0.22	1477	1467
0	0.28	1.84	8.20	38.4	84.2	140	163	187	161	151	175	145	119	64.4	41.8	10.4	1.58	0.22	1493	1483
-10	0.27	1.76	7.16	36.2	78.9	140	160	184	159	148	170	141	116	62.3	39.3	9.07	1.48	0.21	1455	1444
-20	0.26	1.61	5.67	30.0	65.3	131	149	173	150	138	156	132	105	57.2	33.7	6.90	1.34	0.19	1337	1325
-30	0.23	1.43	4.30	20.3	49.5	105	131	142	123	111	123	114	84.0	49.0	24.0	4.57	1.17	0.17	1087	1073
-40	0.19	1.24	3.30	10.0	32.0	65.7	98.8	94.4	81.3	75.8	81.9	83.4	53.2	34.0	12.2	2.84	1.00	0.14	731	713
-50	0.15	1.03	2.48	4.54	11.3	22.1	54.8	59.7	50.6	47.8	53.0	45.4	20.0	12.3	4.56	1.91	0.83	0.10	393	353
-60	0.11	0.78	1.75	2.71	3.64	5.04	8.15	15.0	13.9	12.9	12.5	6.73	4.71	3.41	2.22	1.42	0.58	0.07	95.5	31.8
-70	0.07	0.45	1.13	1.67	1.94	2.20	2.47	2.58	2.51	2.47	2.46	2.33	2.08	1.78	1.43	0.88	0.31	0.03	28.8	0.00
-80	0.03	0.16	0.37	0.62	0.80	0.87	0.86	0.78	0.65	0.62	0.69	0.73	0.70	0.59	0.40	0.20	0.06	0.00	9.14	0.00
-90																				
-90	-80	-40	-60	-50	-40	-30	-20	-10	0	10	20	30	40	50	60	70	80	90		
Φt	3.22	21.0	71.1	296	669	1260	1579	1754	1538	1466	1626	1382	1038	586	330	80.7	17.3	2.26	13720	---
Φa	0.00	0.00	18.5	261	642	1234	1557	1736	1518	1446	1608	1360	1012	562	302	37.3	0.00	0.00	---	13292

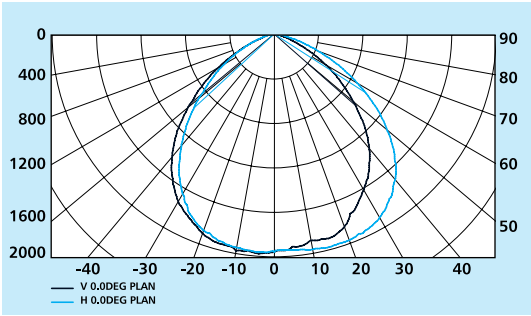
Lâmpada Vapor de Mercúrio 250W

Fluxo Luminoso Total 4.688 lm



AREA FLUX DIAGRAMA																			Φ_t	Φ_a
-90	0.01	0.06	0.15	0.28	0.39	0.47	0.53	0.58	0.59	0.56	0.52	0.46	0.39	0.30	0.19	0.09	0.03	0.00	5.59	0.00
80	0.02	0.16	0.43	0.70	0.97	1.37	2.21	3.09	3.36	3.26	2.85	1.96	1.21	0.86	0.61	0.35	0.11	0.01	23.5	2.53
70	0.04	0.27	0.63	1.18	2.44	5.35	9.42	12.8	13.2	12.9	11.9	8.56	4.81	2.35	1.13	0.56	0.21	0.02	87.7	75.2
60	0.05	0.35	0.87	2.38	6.86	13.8	21.0	26.0	25.8	24.9	23.7	19.1	12.5	6.66	2.58	0.83	0.30	0.03	188	181
50	0.06	0.42	1.27	4.72	12.7	22.9	31.6	36.1	35.6	34.3	33.7	28.7	20.7	12.2	5.09	1.35	0.37	0.05	282	277
40	0.08	0.48	1.85	7.37	17.8	30.2	40.2	46.3	46.3	44.7	43.8	36.6	27.3	16.7	7.72	2.07	0.43	0.06	370	366
30	0.08	0.54	2.49	9.60	21.5	34.8	45.6	52.7	53.0	51.4	50.4	42.0	31.8	19.9	9.82	2.82	0.50	0.06	429	426
20	0.09	0.59	3.03	11.1	23.8	37.3	47.4	54.8	55.3	53.8	53.0	44.6	34.1	22.0	11.2	3.40	0.56	0.07	456	454
10	0.09	0.62	3.35	12.0	25.0	38.0	47.3	54.1	55.1	54.3	53.1	44.9	34.9	22.9	11.8	3.68	0.59	0.07	462	460
0	0.09	0.63	3.39	12.3	25.8	39.1	48.4	55.0	55.4	54.7	52.6	44.4	34.8	22.9	11.8	3.66	0.59	0.07	466	463
-10	0.09	0.60	3.12	11.8	25.3	39.0	48.7	55.3	55.7	55.8	53.5	44.8	34.7	22.3	11.2	3.35	0.55	0.07	466	463
-20	0.08	0.55	2.60	10.3	23.2	37.3	47.2	53.8	54.7	54.9	52.2	43.5	33.3	20.6	9.80	2.77	0.49	0.06	447	445
-30	0.08	0.49	1.93	7.87	19.4	32.8	42.7	48.9	49.9	50.0	47.4	39.4	29.3	17.4	7.65	2.03	0.42	0.05	398	394
-40	0.06	0.42	1.31	4.97	13.9	24.9	34.3	38.9	38.8	38.7	37.4	31.4	22.2	12.6	4.97	1.30	0.36	0.04	307	302
-50	0.05	0.36	0.89	2.44	7.28	14.8	22.2	26.0	25.3	25.4	24.8	20.0	13.2	6.84	2.52	0.80	0.29	0.03	193	187
-60	0.04	0.27	0.64	1.15	2.37	5.29	9.27	12.2	12.4	12.4	11.5	8.18	4.70	2.36	1.07	0.54	0.20	0.02	84.7	71.8
-70	0.02	0.15	0.41	0.68	0.88	1.15	1.80	2.45	2.56	2.51	2.24	1.54	1.04	0.79	0.56	0.31	0.10	0.01	19.2	0.00
-80	0.01	0.05	0.12	0.22	0.30	0.35	0.36	0.35	0.33	0.31	0.31	0.31	0.28	0.22	0.14	0.06	0.02	0.00	3.75	0.00
-90																				
	-90	-80	-40	-60	-50	-40	-30	-20	-10	0	10	20	30	40	50	60	70	80	90	
Φ_t	1.04	7.01	28.5	101	230	379	500	579	584	575	555	461	341	210	99.8	30.0	6.11	0.74	4688	---
Φ_a	0.00	0.00	14.8	91.9	223	373	494	574	578	569	549	455	335	203	91.9	18.1	0.00	0.00	---	4568

Lâmpada Vapor de Mercúrio 400W
Fluxo Luminoso Total 7.489 lm



AREA FLUX DIAGRAM																			Φ_t	Φ_a
-90	0.02	0.10	0.26	0.50	0.73	0.91	1.11	1.30	1.33	1.28	1.16	0.93	0.74	0.56	0.34	0.15	0.04	0.00	11.5	0.00
80	0.04	0.27	0.75	1.32	2.20	3.93	6.44	8.75	9.45	9.23	8.01	5.63	3.40	1.95	1.17	0.61	0.19	0.02	63.4	27.9
70	0.06	0.46	1.16	2.71	6.91	13.5	21.1	27.0	28.2	27.9	25.2	19.0	12.3	6.40	2.53	1.05	0.37	0.04	196	181
60	0.08	0.61	1.77	5.94	15.0	27.2	39.7	48.6	50.4	49.8	46.0	36.9	25.3	14.2	5.74	1.65	0.53	0.06	370	361
50	0.11	0.72	2.83	10.1	23.6	40.5	56.1	67.6	70.1	69.5	64.1	52.2	37.9	22.4	9.96	2.75	0.65	0.08	531	525
40	0.13	0.85	4.14	14.1	30.7	50.2	67.2	79.7	83.1	82.4	76.0	63.5	47.3	29.1	13.8	4.10	0.78	0.09	647	643
30	0.14	0.98	5.35	17.2	35.5	56.0	73.3	85.5	89.5	88.6	82.6	70.3	53.1	33.9	16.8	5.29	0.92	0.11	715	711
20	0.15	1.10	6.24	19.1	38.1	58.5	75.8	87.2	90.5	89.6	86.3	73.8	56.2	36.4	18.5	6.11	1.03	0.11	745	741
10	0.15	1.16	6.69	20.2	39.4	58.7	75.0	86.1	89.8	90.1	86.2	73.4	56.4	37.0	19.0	6.43	1.08	0.12	747	744
0	0.15	1.16	6.69	20.4	40.2	60.8	77.3	88.0	90.4	88.2	82.8	71.3	55.0	36.4	18.6	6.27	1.06	0.12	745	741
-10	0.15	1.08	6.24	19.5	38.7	58.9	75.8	85.7	87.0	86.8	81.7	69.7	53.3	34.6	17.3	5.68	0.97	0.11	723	720
-20	0.14	0.96	5.25	16.9	34.4	53.8	69.2	77.7	81.0	80.5	75.8	64.3	48.7	30.9	15.1	4.71	0.84	0.10	660	656
-30	0.12	0.81	3.91	13.1	27.9	44.6	57.5	65.0	67.7	67.1	63.3	54.0	40.4	25.0	11.7	3.51	0.69	0.09	546	541
-40	0.10	0.68	2.53	8.79	19.6	32.3	42.5	48.8	49.8	49.1	47.0	39.8	29.1	17.5	7.84	2.26	0.57	0.07	398	392
-50	0.08	0.57	1.49	4.71	11.1	19.1	26.5	30.8	31.1	30.8	29.7	24.5	17.3	9.83	4.14	1.29	0.45	0.05	243	233
-60	0.06	0.43	0.98	1.94	4.39	8.06	12.0	14.4	15.0	14.8	13.9	11.0	7.22	3.79	1.68	0.82	0.31	0.03	111	84.2
-70	0.04	0.25	0.63	1.00	1.35	2.05	3.08	3.74	3.89	3.81	3.54	2.75	1.78	1.16	0.83	0.47	0.16	0.01	30.6	0.00
-80	0.01	0.08	0.20	0.34	0.45	0.50	0.52	0.52	0.50	0.48	0.47	0.44	0.39	0.32	0.21	0.10	0.03	0.00	5.57	0.00
-90	0.01	0.08	0.20	0.34	0.45	0.50	0.52	0.52	0.50	0.48	0.47	0.44	0.39	0.32	0.21	0.10	0.03	0.00	5.57	0.00
Φ_t	1.72	12.3	57.1	178	370	589	780	906	939	930	874	733	546	341	165	53.3	10.7	1.21	7489	---
Φ_a	0.00	0.00	38.9	165	359	579	770	897	929	921	864	724	536	330	153	35.1	0.00	0.00	---	7301