

PENTRON® & PENTRON® HO

T5 Linear Fluorescent Lamps



- High Performance T5 lamps
 - 104 LPW max. for PENTRON
 - 94 LPW max. for PENTRON HO
 - Designed for high frequency electronic ballasts
- Nominal 2', 3', 4', and 5'
 - Approx. 2" shorter than T8 lengths
- Miniature Bi-Pin base
- 3000K, 3500K, 4100K, 82 CRI
- 93% lumen maintenance
- Average rated life of 20,000 hours
- Greater luminaire design flexibility
- Peak lumen output at 35°C (95°F)

SYLVANIA PENTRON and PENTRON HO - A new product line of slender, 5/8" diameter, T5 linear fluorescent lamps with improved system performance characteristics compared to T8 & T12 technology.

Engineered with thermal characteristics which provide improved lumen output in luminaires. PENTRON brings increased design opportunities for unique, highly efficient, low profile lighting.

Product Availability

PENTRON	Wattage		Lamp Length	
	PENTRON HO		Nominal	Actual
14W	24W		~2ft	549mm
21W	39W		~3ft	849mm
28W	54W		~4ft	1149mm
35W	80W		~5ft	1449mm

Application Information

Applications

Indirect
 Shallow recessed
 Cove and valance
 Low profile surface mount
 Sign lighting
 Showcase lighting
 Any place controlled,
 high-efficiency light is desired

Application Notes

1. PENTRON/PENTRON HO lamps are about 2" shorter than T8 & T12 bi-pin lamps.
2. Miniature Bi-Pin base will not install into T8 & T12 sockets.
3. Miniature Bi-Pin base requires UL Listed 600 Volt rated sockets.
4. Requires high frequency electronic ballasts for T5's equipped with end-of-life sensing circuit.
5. PENTRON (not PENTRON HO) operates at same current for uniform color and brightness between nominal 2', 3', 4', and 5' lengths.
6. Apply thermal factor in calculations for use in exterior or unheated applications.

Sample Specification

Lamps shall be PENTRON T5 lamps having miniature bi-pin bases and minimum of 93% lumen maintenance. Lamps shall have a correlated color temperature of (3000K, 3500K, 4100K) and a Color Rendering Index of 82. The PENTRON T5 lamps shall be operated on dedicated QUICKTRONIC® PS ballasts having a primary voltage of (120V, 277V) with complete system warranty from the manufacturer covering lamps and ballasts.

Lamps shall be PENTRON T5 HO lamps having miniature bi-pin bases and a minimum of 93% lumen maintenance. Lamps shall have a correlated color temperature of (3000K, 3500K, 4100K) and a CRI of 82. The PENTRON T5 HO lamps shall be operated on dedicated QUICKTRONIC PHO ballasts having a primary voltage of (120V, 277V) with complete system warranty from the manufacturer covering lamps and ballasts.

System Comparison*

T12/SS vs. OCTRON T8 vs. PENTRON T5

Lamp	Lamp Type	# Lamps	Ballast	BF	System Watts	Initial System Lumens	Lumen Maint.	Mean System Lumens	Relative Light Output	Mean System LPW
F40T12CW/SS	T12	2	Magnetic	0.88	72	4660	0.85	3960	100%	55
F032/841	T8	2	System 32	0.90	59	5310	0.92	4890	123%	83
FP28/841	T5	2	System PS	1.0	62	5200	0.93	4836	122%	78
FP54/841/HO	T5	1	System PHO	1.0	61	4450	0.93	4140	105%	68

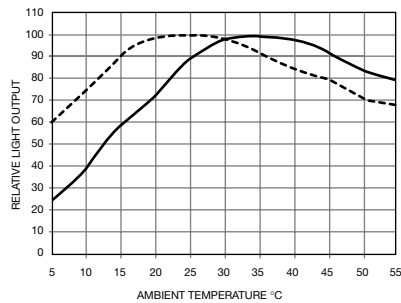
T12HO/SS vs. OCTRON T8 vs. PENTRON T5 HO

Lamp	Lamp Type	# Lamps	Ballast	BF	System Watts	Initial System Lumens	Lumen Maint.	Mean System Lumens	Relative Light Output	Mean System LPW
F96T12/CW/HO/SS	T12	1	Magnetic	0.94	122	7520	0.82	6170	100%	51
F096/841	T8	1	System 59	1.13	70	6670	0.92	6140	100%	88
FP80/841/HO	T5	1	System PHO	1.0	89	6150	0.93	5720	93%	64

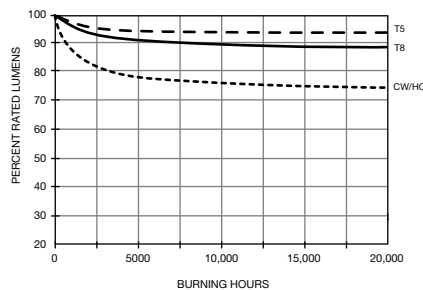
* Comparison at 25°C

Technical Information

Lumen Output vs. Temperature T8/T5

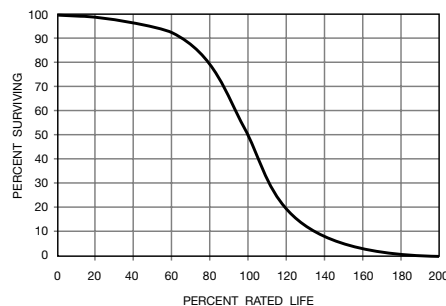


Fluorescent Lamp Lumen Maintenance

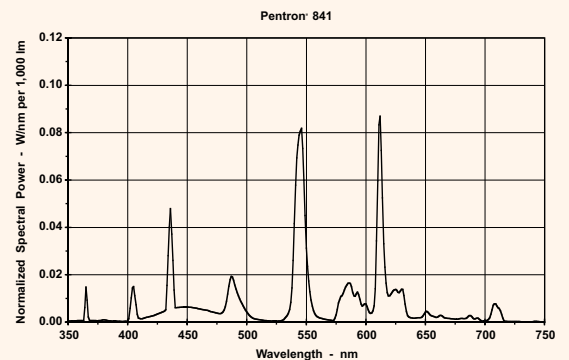
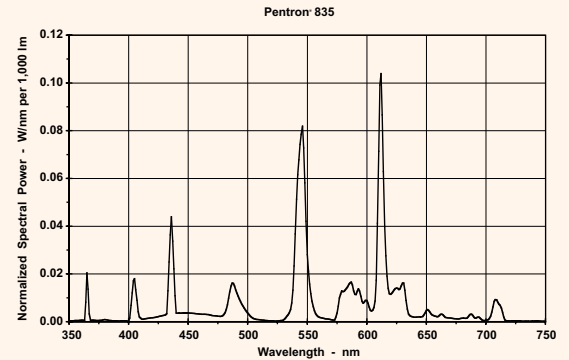
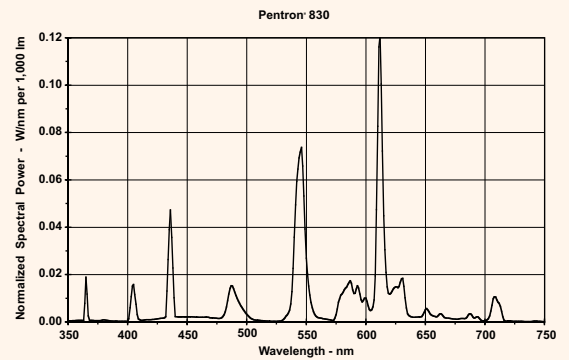


* Lumen output continues to decrease throughout the life of a fluorescent lamp.

Typical Fluorescent Lamp Mortality



Spectral Power Distributions



Specify Performance

OSRAM SYLVANIA offers an Exclusive System Warranty: QUICK 60+® LIMITED WARRANTY

One of the key benefits of the OSRAM SYLVANIA PENTRON & PENTRON HO lamps is the operation of the lamps on an electronic ballast. QUICKTRONIC PS & QUICKTRONIC PHO ballasts operate the lamps at full light output with optimal system performance. But more importantly, you receive the benefits of the most comprehensive system warranty in the business.

What is covered:

PENTRON and PENTRON HO lamps for up to 24 months
 QUICKTRONIC PS & QUICKTRONIC PHO ballasts for up to 60 months

If the lamps are group re-lamped, the lamp warranty can be renewed for an additional 24 months.

See the QUICK 60+ Warranty Guide for additional information.

Key Ballast Features

100% ballast factor

- QUICKSENSE® technology, (end-of-lamp-life sensing)
- PROStart™, optimal starting conditions that provides up to 100,000 switching cycles for use on occupancy sensors and building control systems
- High Power Factor, (>98%)
- Low Harmonic Distortion, (<10%, with inrush limiting circuitry)
- Starting Temperature: 0°F
- Remote Mounting Distance up to 19 feet, depending on model
- Dimming ballast available: System 54PHO-DIM

See OSRAM SYLVANIA's "BALLAST TECHNOLOGY & SPECIFICATION GUIDE" for further details.

System Performance Guide*

QUICKTRONIC PS ELECTRONIC PENTRON FLUORESCENT SYSTEMS

Item number	Description	Voltage VAC	Lamp** Type	Rated Lumens* (LM)	No. of Lamps	Ballast Factor (BF)	System Lumens*	Input Wattage (W)	System Efficacy* (lm/W)
49681	QTP1X28/120PSN-E	120	FP28T5/800	2600	1	1.00	2600	32	81
49682	QTP1X28/277PSN-E	277	FP28T5/800	2600	1	1.00	2600	32	81
49683	QTP2X28/120PSN-E	120	FP28T5/800	2600	2	1.00	5200	62	84
49684	QTP2X28/277PSN-E	277	FP28T5/800	2600	2	1.00	5200	62	84
50890	QTP1X28/120PSN-F	120	FP28T5/800	2600	1	1.00	2600	32	81
50900	QTP1X28/277PSN-F	277	FP28T5/800	2600	1	1.00	2600	31	84
50910	QTP2X28/120PSN-F	120	FP28T5/800	2600	2	1.00	5200	66	79
50920	QTP2X28/277PSN-F	277	FP28T5/800	2600	2	1.00	5200	65	80

QUICKTRONIC PHO ELECTRONIC PENTRON HO FLUORESCENT SYSTEMS

Item number	Description	Voltage VAC	Lamp** Type	Rated Lumens* (LM)	No. of Lamps	Ballast Factor (BF)	System Lumens*	Input Wattage (W)	System Efficacy* (lm/W)
49631	QTP1X39-24/120PSN-E	120	FP24T5/HO/800	1750	1	1.00	1750	28	63
49632	QTP1X39-24/277PSN-E	277	FP24T5/HO/800	1750	1	1.00	1750	27	65
49633	QTP2X39-24/120PSN-E	120	FP24T5/HO/800	1750	2	1.00	3500	54	65
49634	QTP2X39-24/277PSN-E	277	FP24T5/HO/800	1750	2	1.00	3500	53	66
49631	QTP1X39-24/120PSN-E	120	FP39T5/HO/800	3100	1	1.00	3100	42	74
49632	QTP1X39-24/277PSN-E	277	FP39T5/HO/800	3100	1	1.00	3100	42	74
49633	QTP2X39-24/120PSN-E	120	FP39T5/HO/800	3100	2	1.00	6200	87	71
49634	QTP2X39-24/277PSN-E	277	FP39T5/HO/800	3100	2	1.00	6200	85	73
49651	QTP1X54/120PSN-E	120	FP54T5/HO/800	4450	1	1.00	4450	62	72
49652	QTP1X54/277PSN-E	277	FP54T5/HO/800	4450	1	1.00	4450	61	73
49653	QTP2X54/120PSN-E	120	FP54T5/HO/800	4450	2	1.00	8900	120	74
49654	QTP2X54/277PSN-E	277	FP54T5/HO/800	4450	2	1.00	8900	117	76
49660	QTP1X80/120PSN-E	120	FP80T5/HO/800	6150	1	1.00	6150	91	68
49670	QTP1X80/277PSN-E	277	FP80T5/HO/800	6150	1	1.00	6150	90	68

* Comparison at 25°C

** Also compatible with other manufacturers' equivalent lamp types that meet ANSI standards.

Ordering and Specification Information

PENTRON

Item Number	Ordering Abbreviation	Base	Watts	Initial Lumens @25°C	Initial Lumens @35°C	Bulb	Nominal length (mm)	Average Rated Life (hours)*	Color Temp	CRI
20810	FP14/830	Miniature Bi-Pin	14	1200	1350	T-5	549	20,000	3000K	82
20812	FP14/835	Miniature Bi-Pin	14	1200	1350	T-5	549	20,000	3500K	82
20822	FP14/841	Miniature Bi-Pin	14	1200	1350	T-5	549	20,000	4100K	82
20823	FP21/830	Miniature Bi-Pin	21	1900	2100	T-5	849	20,000	3000K	82
20832	FP21/835	Miniature Bi-Pin	21	1900	2100	T-5	849	20,000	3500K	82
20835	FP21/841	Miniature Bi-Pin	21	1900	2100	T-5	849	20,000	4100K	82
20836	FP28/830	Miniature Bi-Pin	28	2600	2900	T-5	1149	20,000	3000K	82
20841	FP28/835	Miniature Bi-Pin	28	2600	2900	T-5	1149	20,000	3500K	82
20842	FP28/841	Miniature Bi-Pin	28	2600	2900	T-5	1149	20,000	4100K	82
20843	FP35/830	Miniature Bi-Pin	35	3300	3650	T-5	1449	20,000	3000K	82
20844	FP35/835	Miniature Bi-Pin	35	3300	3650	T-5	1449	20,000	3500K	82
20845	FP35/841	Miniature Bi-Pin	35	3300	3650	T-5	1449	20,000	4100K	82

*Based on 3 hrs per start on electronic programmed start

PENTRON HO

Item Number	Ordering Abbreviation	Base	Watts	Initial Lumens @25°C	Initial Lumens @35°C	Bulb	Nominal length (mm)	Average Rated Life (hours)*	Color Temp	CRI
20846	FP24/830/HO	Miniature Bi-Pin	24	1750	2000	T-5	549	20,000	3000K	82
20852	FP24/835/HO	Miniature Bi-Pin	24	1750	2000	T-5	549	20,000	3500K	82
20853	FP24/841/HO	Miniature Bi-Pin	24	1750	2000	T-5	549	20,000	4100K	82
20854	FP39/830/HO	Miniature Bi-Pin	39	3100	3500	T-5	849	20,000	3000K	82
20855	FP39/835/HO	Miniature Bi-Pin	39	3100	3500	T-5	849	20,000	3500K	82
20856	FP39/841/HO	Miniature Bi-Pin	39	3100	3500	T-5	849	20,000	4100K	82
20857	FP54/830/HO	Miniature Bi-Pin	54	4450	5000	T-5	1149	20,000	3000K	82
20858	FP54/835/HO	Miniature Bi-Pin	54	4450	5000	T-5	1149	20,000	3500K	82
20860	FP54/841/HO	Miniature Bi-Pin	54	4450	5000	T-5	1149	20,000	4100K	82
20863	FP80/830/HO	Miniature Bi-Pin	80	6150	7000	T-5	1449	20,000	3000K	82
20864	FP80/835/HO	Miniature Bi-Pin	80	6150	7000	T-5	1449	20,000	3500K	82
20865	FP80/841/HO	Miniature Bi-Pin	80	6150	7000	T-5	1449	20,000	4100K	82

*Based on 3 hrs per start on electronic programmed start

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Ordering Guide

PENTRON FP28/830

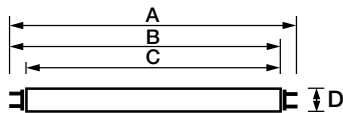
FP	28	/	8	30
Fluorescent	Wattage:		8 = 82 CRI	30 = 3000K
PENTRON T5	14, 21, 28			35 = 3500K
	or 35 watts			41 = 4100K

PENTRON HO FP54/830/HO

FP	80	/	8	30	/	HO
Fluorescent	Wattage:		8 = 82 CRI	30 = 3000K		High Output
PENTRON T5 HO	24, 39, 54			35 = 3500K		
	or 80 watts			41 = 4100K		

Dimensions

Ordering Abbreviation	(A) Max. Overall Length mm (in)	(B) Max. Base Face to Opposite Pin mm (in)	(C) Max. Base Face to Base Face mm (in)	(D) Max. Outside Diameter mm (in)
FP14 & FP24/HO	563.2 (22.17)	556.1 (21.89)	549.0 (21.61)	17.0 (0.67)
FP21 & FP39/HO	863.2 (33.89)	856.1 (33.70)	849.0 (33.43)	17.0 (0.67)
FP28 & FP54/HO	1163.2 (45.80)	1156.1 (45.52)	1149.0 (45.24)	17.0 (0.67)
FP35 & FP80/HO	1463.2 (57.61)	1456.1 (57.33)	1449.0 (57.05)	17.0 (0.67)



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