

TCP TruDim Lamps

12,000 Hours average rated life, 120 V

TruDim®

Technology by TCP

Applications:

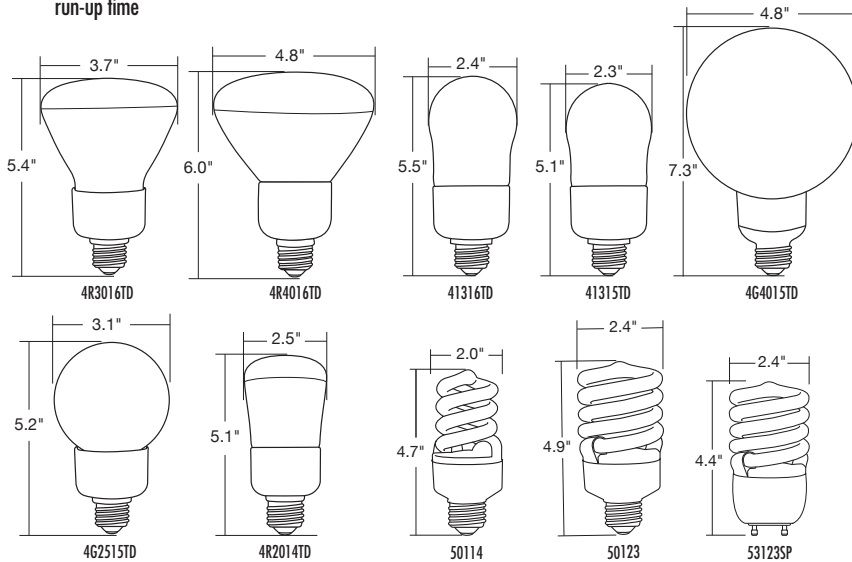
Perfect for most dimmable applications: Use where a standard incandescent is used.

- + Table Lamps
- + Chandeliers
- + Wall Scones
- + Ceiling Fixtures
- + Recessed Cans

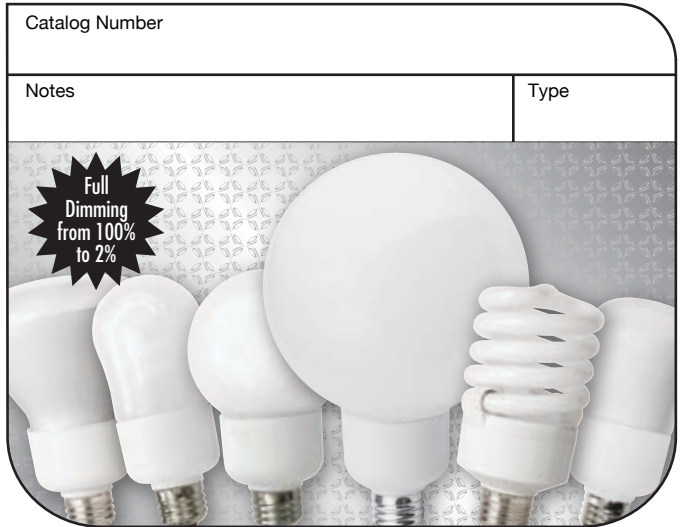


Features and Benefits

- Multi-level adaptive circuitry provides stable linear dimming from 100 to 2%
- Features a dimming curve that closely matches the human eye response of incandescent dimming
- Overdrive technology provides faster run-up time
- Superior circuitry design controls low dim level starting capability
- Zero low end flicker
- Unique NanoTi pre-phosphor coating improves Lumen Maintenance over the life of the lamp



TCP reserves the right to void the warranty for any misapplication of these products.



Catalog Number

Notes

Type

Specifications (at full brightness)

End of Life Protection.....	Yes
Ballast type	Electronic
Starting method.....	Programmed Rapid Start
Voltage	120VAC
Frequency	50/60 HZ
CRI	82
FCC Compliance	47 CFR Part 18
Power Factor	> .70 at full power
Rated Life	12,000 Hours

Special Application Notes

- UL approved for wet location in base up position.
- 2 hour burn-in time at full power recommended.
- Covered and Reflectors UL approved for wet location base up position.
- 50123 approved for open recessed cans and enclosed non-recessed fixtures.

Suggested Dimmer:

Designed specifically for use with standard non-illuminated 600 watt incandescent slide or rotary dimmer. Consult TCP Technical Support or dimmer manufacturer for compatibility with other dimmer types. Can also be used with dimmers designed specifically for CFLs.

Warranties and Certifications:	ENERGY STAR®	Item #	Description	Wattage	Incandescent Wattage Comparison	Initial Lumens	M.O.L. (inches)	Diameter (inches)	Input Line Current	Lamp Shape
<p>24 MONTH WARRANTY</p> <p>For the most up-to-date specs, please visit www.tcpi.com</p>		4R3016TD	16 WATT R30 Dimmable	16	65W	650	5.4	3.7	.19A	R30
		4R2014TD	14 WATT R20 Dimmable	14	50W	410	5.1	2.5	.17A	R20
		4R4016TD	16 WATT R40 Dimmable	16	65W	750	6.1	4.8	.19A	R40
	★	4I316TD	16 WATT A-Lamp Dimmable	16	60W	850	5.5	2.4	.19A	A-21
	★	4I315TD	15 WATT A-Lamp Dimmable	15	60W	750	5.1	2.3	.18A	A-19
	★	4G2515TD	15 WATT G25 Globe Dimmable	15	60W	750	5.2	3.1	.18A	G25
		4G4015TD	15 WATT G40 Globe Dimmable	15	60W	750	7.3	4.8	.18A	G40
		50114	14 WATT Full Spring Dimmable	14	60W	850	4.7	2.0	.17A	Spring
	★	50123	23 WATT Full Spring Dimmable	23	100W	1500	4.9	2.4	.27A	Spring
		53123SP	23 WATT Full Spring Dimmable GU Base	23	100W	1500	4.4	2.4	.27A	Spring



TruDim® Dimmable CFL Specification

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2700°K	4R3016TD	16 WATT R30 Dimmable	16	65W	650	5.4	3.7	.19A	R30
	4R2014TD	14 WATT R20 Dimmable	14	50W	410	5.1	2.5	.17A	R20
	4R4016TD	16 WATT R40 Dimmable	16	65W	750	6.1	4.8	.19A	R40
	41316TD	16 WATT A-Lamp Dimmable	16	60W	850	5.5	2.4	.19A	A-21
	41315TD	15 WATT A-Lamp Dimmable	15	60W	750	5.1	2.3	.18A	A-19
	4G2515TD	15 WATT G25 Globe Dimmable	15	60W	750	5.2	3.1	.18A	G25
	4G4015TD	15 WATT G40 Globe Dimmable	15	60W	750	7.3	4.8	.18A	G40
	50114	14 WATT Full Spring Dimmable	14	60W	850	4.7	2.0	.17A	Spring
	50123	23 WATT Full Spring Dimmable	23	100W	1500	4.9	2.4	.27A	Spring
	53123SP	23 WATT Full Spring Dimmable GU Base	23	100W	1500	4.4	2.4	.27A	Spring
3000°K ordering suffix 30K	4R3016TD30K	16 WATT R30 Dimmable 3000K	16	65W	650	5.4	3.7	.19A	R30
	4R2014TD30K	14 WATT R20 Dimmable 3000K	14	50W	410	5.1	2.5	.17A	R20
	4R4016TD30K	16 WATT R40 Dimmable 3000K	16	65W	750	6.1	4.8	.19A	R40
	41316TD30K	16 WATT A-Lamp Dimmable 3000K	16	60W	850	5.5	2.4	.19A	A-21
	41315TD30K	15 WATT A-Lamp Dimmable 3000K	15	60W	750	5.1	2.3	.18A	A-19
	4G2515TD30K	15 WATT G25 Globe Dimmable 3000K	15	60W	750	5.2	3.1	.18A	G25
	4G4015TD30K	15 WATT G40 Globe Dimmable 3000K	15	60W	750	7.3	4.8	.18A	G40
	5011430K	14 WATT Full Spring Dimmable 3000K	14	60W	850	4.7	2.0	.17A	Spring
	5012330K	23 WATT Full Spring Dimmable 3000K	23	100W	1500	4.9	2.4	.27A	Spring
3500°K ordering suffix 35K	4R3016TD35K	16 WATT R30 Dimmable 3500K	16	65W	600	5.4	3.7	.19A	R30
	4R2014TD35K	14 WATT R20 Dimmable 3500K	14	50W	380	5.1	2.5	.17A	R20
	4R4016TD35K	16 WATT R40 Dimmable 3500K	16	65W	700	6.1	4.8	.19A	R40
	41316TD35K	16 WATT A-Lamp Dimmable 3500K	16	60W	800	5.5	2.4	.19A	A-21
	41315TD35K	15 WATT A-Lamp Dimmable 3500K	15	60W	700	5.1	2.3	.18A	A-19
	4G2515TD35K	15 WATT G25 Globe Dimmable 3500K	15	60W	700	5.2	3.1	.18A	G25
	4G4015TD35K	15 WATT G40 Globe Dimmable 3500K	15	60W	700	7.3	4.8	.18A	G40
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	53123SP35K	23 WATT Full Spring Dimmable 3500K GU Base	23	100W	1500	4.4	2.4	.27A	Spring
4100°K ordering suffix 41K	4R3016TD41K	16 WATT R30 Dimmable 4100K	16	65W	600	5.4	3.7	.19A	R30
	4R2014TD41K	14 WATT R20 Dimmable 4100K	14	50W	380	5.1	2.5	.17A	R20
	4R4016TD41K	16 WATT R40 Dimmable 4100K	16	65W	700	6.1	4.8	.19A	R40
	41316TD41K	16 WATT A-Lamp Dimmable 4100K	16	60W	800	5.5	2.4	.19A	A-21
	41315TD41K	15 WATT A-Lamp Dimmable 4100K	15	60W	700	5.1	2.3	.18A	A-19
	4G2515TD41K	15 WATT G25 Globe Dimmable 4100K	15	60W	700	5.2	3.1	.18A	G25
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	5011441K	14 WATT Full Spring Dimmable 4100K	14	60W	800	4.7	2.0	.17A	Spring
	5012341K	23 WATT Full Spring Dimmable 4100K	23	100W	1450	4.9	2.4	.27A	Spring
	53123SP41K	23 WATT Full Spring Dimmable 4100K GU Base	23	100W	1450	4.4	2.4	.27A	Spring
5000°K ordering suffix 50K	4R3016TD50K	16 WATT R30 Dimmable 5000K	16	65W	550	5.4	3.7	.19A	R30
	4R2014TD50K	14 WATT R20 Dimmable 5000K	14	50W	380	5.1	2.5	.17A	R20
	4R4016TD50K	16 WATT R40 Dimmable 5000K	16	65W	675	6.1	4.8	.19A	R40
	41316TD50K	16 WATT A-Lamp Dimmable 5000K	16	60W	775	5.5	2.4	.19A	A-21
	41315TD50K	15 WATT A-Lamp Dimmable 5000K	15	60W	675	5.1	2.3	.18A	A-19
	4G2515TD50K	15 WATT G25 Globe Dimmable 5000K	15	60W	675	5.2	3.1	.18A	G25
	4G4015TD50K	15 WATT G40 Globe Dimmable 5000K	15	60W	675	7.3	4.8	.18A	G40
	5011450K	14 WATT Full Spring Dimmable 5000K	14	60W	800	4.7	2.0	.17A	Spring
	5012350K	23 WATT Full Spring Dimmable 5000K	23	100W	1450	4.9	2.4	.27A	Spring
	53123SP50K	23 WATT Full Spring Dimmable 5000K GU Base	23	100W	1450	4.9	2.4	.27A	Spring
6500°K ordering suffix 65K	4R3016TD65K	16 WATT R30 Dimmable 6500K	16	65W	550	5.4	3.7	.19A	R30
	4R2014TD65K	14 WATT R20 Dimmable 6500K	14	50W	380	5.1	2.5	.17A	R20
	4R4016TD65K	16 WATT R40 Dimmable 6500K	16	65W	675	6.1	4.8	.19A	R40
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	5012365K	23 WATT Full Spring Dimmable 6500K	23	100W	1400	4.9	2.4	.27A	Spring

For the most up-to-date specs, please visit www.tcp.com

1. Q: Do TCP TruDim® Series products dim exactly like an incandescent lamp?

A: 1) TCP TruDim® Series products have slightly different dimming characteristics due to the electronics of a CFL vs. an incandescent filament however they are very close in performance.
2) However it is important to note that Electronic components do not respond in the same manner as a heated incandescent filament therefore there will be slight differences in visual operational characteristics.
3) Remember this is a Compact Fluorescent Lamp which has a high level of technology engineered into it vs. an incandescent which has zero technology, they are not the same.

2. Q: Do TCP's TruDim® Series products work on ordinary incandescent dimmers?

A: YES! Designed specifically for use with standard non-illuminated 600 watt incandescent slide or rotary dimmers that are currently available in the market. They will also work with CFL dimmers that are available in the market. Consult TCP Customer Care or the dimmer manufacturer for compatibility with other dimmer types.

3. Q: Will TCP's TruDim® Series products work on every incandescent dimmer ever made?

A: NO! Although TCP's TruDim® Series product has been approved for use with 600w incandescent dimmers, there are certain types of dimmers that have proven to be incompatible due to certain dimmer features or outdated dimmer technology.

4. Q: How can I tell if a dimmer is not compatible with a TCP TruDim® lamp?

A: Generally speaking, certain programmable electronic and/or remote control dimmers are not compatible. Additionally, high wattage dimmers (1000w+) are typically incompatible because of different voltage/current regulations, manufacturing regulations, and manufacturing tolerances. Illuminated (glow-in-the-dark) dimmers are usually incompatible with dimmable CFLs.

5. Q: Can TCP recommend a compatible dimmer?

A: Although TCP is not at liberty to recommend one manufacturer or brand over another, basic lab testing and real-world experience has shown that 600 Watt max, mid-grade, non-illuminated slide and rotary dimmers function well. Also the new CFL-LED dimmers now available also function well. Follow these links to obtain more compatibility information about Lutron and Leviton dimmers:

<http://www.lutron.com.service-support/technical/pages/technicalfaq.aspx>

<http://wwwcommunities.leviton.com.docs/doc-2542>

6. Q: What are the compatible dimmers that Lutron recommends?

A: Through independent testing at Lutron's laboratories, the following Lutron wall-mount and in-line models were deemed acceptable for use with TCP Pro and TruDim CFL lamps:

Credenza® C•L™: TTCL-100H

Diva® C•L™: DVWCL-153P, DVCL-153P, DVSCCL-153P

Skylark Contour™ CL: CTCL-153P

Lumea® C•L: LGCL-153PH

Toggler®/Ariadni® C•L™: TGCL-153P, AYCL-153P

7. Q: Will TCP's TruDim® Series products flicker at the low level as other CFL Dimmable product does?

A: 1) No! TCP's Dimmable series product dims down to 2% without flicker. However at Zero hours the bulbs may look unstable when first put into use. We recommend to season the bulbs at full power for 2 hours this will stabilize the phosphor and mercury resulting much better dimming and lamp performance.

2) It is important to note that because TruDim will dim down to such a low level it is recommended that you not use the dimming controller, knob or slider for example, as an on/off device. By sliding or turning the device all the way down this does not turn the power off completely to the lamps. Because TruDim has an integrated circuit chip in the circuit board this may read the low power and cause the TruDim lamps to strobe. We recommend to use the controller to adjust light level only and use the on/off switch to control power to the lamps.

8. Q: Does the performance of TCP's TruDim® Series products rely on the quality of a dimmer?

A: YES! Consideration must be given to the age and quality of a dimmer if it is to be used with a TCP TruDim® Series product. Because of the recent push to save energy, newer dimmers are more likely to be CFL compatible. Older dimmers are not as capable of withstanding voltage spikes, which, if used, would ultimately damage the circuitry in the TCP TruDim® Series product.

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10. Q: Can 1000 watt or larger commercial grade dimmers be used with TCP's TruDim® Series products?

A: No! Most commercial grade dimmers are manufactured to be used with incandescent lamps which have a large resistive load when energized. Since TCP TruDim products are electronic, they do not have the same resistive load as an incandescent, and as such, the dimmer will not be able to maintain the proper power balance needed to perform as intended.

11. Q: How do you properly use TCP's TruDim® Series products?

A: TCP recommends a burn-in period of 2 hours at full power to stabilize the lamp before dimming. If lamps have been idle for an extended period of time burn at full power for 30 minutes before dimming. When dimming to the off position lamps may pulse at the low end briefly then turn off. This is a safe mode for the lamps and will not hurt the lamp or dimmer.

12. Q: Will it damage the lamps if they are turned on at too low a level and they don't come on?

A: No! TCP TruDim lamps are designed to be turned off and on at a low level with an on/off switch located on the dimmer. If the lamps do not turn on simply move the dimming level up till the lamps turn on then dim down to desired level.

13. Q: What is the warranty and average life of TCP's TruDim® Series products?

A: TCP's TruDim® Series product is warranted for 24 months. Using accepted industry standards, the average life is rated at 12,000 hours.

14. Q: Can TCP TruDim® be used in 3-way lamp sockets?

A: No! TCP's TruDim® Series product will not perform like a 3 way bulb in a 3 way socket they will only have 1 light level at full power.

15. Q: Will frequent dimming significantly shorten the life of a TCP TruDim® Series products?

A: NO! Frequent dimming will not significantly reduce the life of the TCP TruDim® Series product.

16. Q: Can the TCP TruDim® be used with a touch lamp?

A: NO! Touch lamps are actually controlled by a 3-way switch, so the same rules as the 3-way switch apply in this case.

17. Q: How many TCP TruDim® lamps can be used on the same dimmer?

A: To compensate for "inrush current" (timed in milliseconds, the initial flow of electrical current that is needed to start the CFL), TCP recommends dividing the dimmer's rated wattage in half and then using that wattage number to outfit the fixture. For example:

$$600 \text{ Watt Dimmer} \div 2 = 300 \text{ Watts}$$

$$\text{TCP's 14W Dimmable CFL: } 300 \div 14 = 21 \text{ lamps}$$

$$\text{TCP's 16W Dimmable CFL: } 300 \div 16 = 18 \text{ lamps}$$

NOTE: Since every dimmer is manufactured differently there may be some variance in these numbers. The above examples are a rough estimate only.

18. Q: Will TruDim® product all turn off simultaneously when dimmed down to 2% or below?

A: No. If you have a series of TruDim product on a circuit as you dim down to 2% or below the lamps will turn off at different times. Eventually all will turn off but you may have a situation (extremely small range on your dimmer control) with a portion of the lamps still on and the rest off.

19. Q: Why do some of the lamps strobe at the very low end before turning off?

A: 1. This is due to the low dim level turn-on capability. When the lamps are dimmed to below 2% some of the lamps may pulse or strobe 4-6 times then turn off. This does not affect the life or performance of the lamps.

2. Also at the bottom of the dimming trail on a dimmer the power is never actually turned off so the TruDim lamps may still be reading power causing the strobe. It is our recommendation to not use the dimming knob or slider as an on/off device, use it for light level control and use the on/off switch to turn bulbs on and off. If the lamps continue to strobe move the knob or slider up until the lamps turn back on at a low level. Then use the on/off switch to turn lamps on/off.

20. Q: Can TruDim® lamps be used with other dimming CFL's or lamps?

A: No it is recommended to use 100% TruDim lamps on a circuit do not use any other Dimming CFL lamps in combination with TruDim. This may affect the performance of the lamps during dimming mode.

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Technology by TCP

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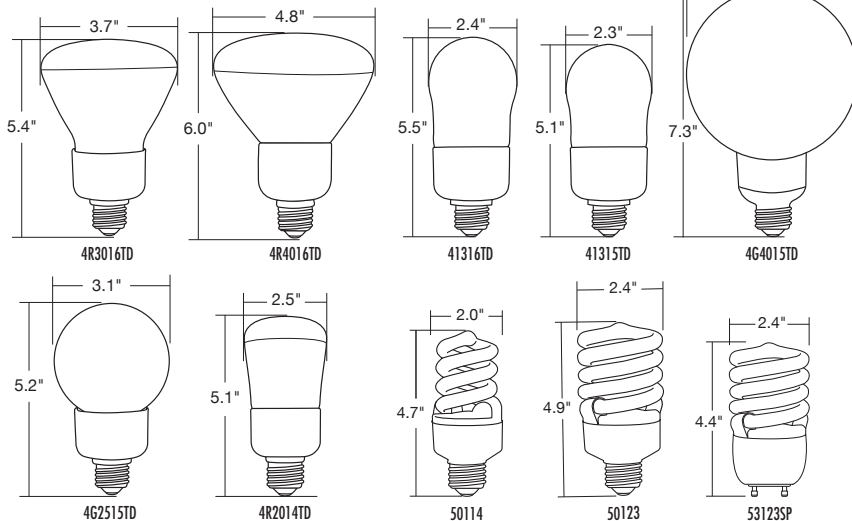
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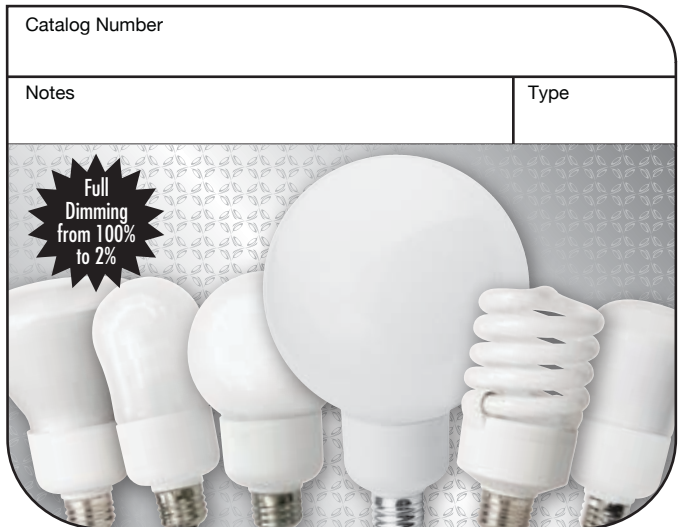


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	4G2515TD35K	15 WATT G25 Globe Dimmable 3500K	15	60W	700	5.2	3.1	.18A	G25
	4G4015TD35K	15 WATT G40 Globe Dimmable 3500K	15	60W	700	7.3	4.8	.18A	G40
	5011435K	14 WATT Full Spring Dimmable 3500K	14	60W	850	4.7	2.0	.17A	Spring
	5012335K	23 WATT Full Spring Dimmable 3500K	23	100W	1500	4.9	2.4	.27A	Spring
	53123SP35K	23 WATT Full Spring Dimmable 3500K GU Base	23	100W	1500	4.4	2.4	.27A	Spring
4100°K ordering suffix 41K	4R3016TD41K	16 WATT R30 Dimmable 4100K	16	65W	600	5.4	3.7	.19A	R30
	4R2014TD41K	14 WATT R20 Dimmable 4100K	14	50W	380	5.1	2.5	.17A	R20
	4R4016TD41K	16 WATT R40 Dimmable 4100K	16	65W	700	6.1	4.8	.19A	R40
	41316TD41K	16 WATT A-Lamp Dimmable 4100K	16	60W	800	5.5	2.4	.19A	A-21
	41315TD41K	15 WATT A-Lamp Dimmable 4100K	15	60W	700	5.1	2.3	.18A	A-19
	4G2515TD41K	15 WATT G25 Globe Dimmable 4100K	15	60W	700	5.2	3.1	.18A	G25
	4G4015TD41K	15 WATT G40 Globe Dimmable 4100K	15	60W	700	7.3	4.8	.18A	G40
	5011441K	14 WATT Full Spring Dimmable 4100K	14	60W	800	4.7	2.0	.17A	Spring
	5012341K	23 WATT Full Spring Dimmable 4100K	23	100W	1450	4.9	2.4	.27A	Spring
	53123SP41K	23 WATT Full Spring Dimmable 4100K GU Base	23	100W	1450	4.4	2.4	.27A	Spring
5000°K ordering suffix 50K	4R3016TD50K	16 WATT R30 Dimmable 5000K	16	65W	550	5.4	3.7	.19A	R30
	4R2014TD50K	14 WATT R20 Dimmable 5000K	14	50W	380	5.1	2.5	.17A	R20
	4R4016TD50K	16 WATT R40 Dimmable 5000K	16	65W	675	6.1	4.8	.19A	R40
	41316TD50K	16 WATT A-Lamp Dimmable 5000K	16	60W	775	5.5	2.4	.19A	A-21
	41315TD50K	15 WATT A-Lamp Dimmable 5000K	15	60W	675	5.1	2.3	.18A	A-19
	4G2515TD50K	15 WATT G25 Globe Dimmable 5000K	15	60W	675	5.2	3.1	.18A	G25
	4G4015TD50K	15 WATT G40 Globe Dimmable 5000K	15	60W	675	7.3	4.8	.18A	G40
	5011450K	14 WATT Full Spring Dimmable 5000K	14	60W	800	4.7	2.0	.17A	Spring
	5012350K	23 WATT Full Spring Dimmable 5000K	23	100W	1450	4.9	2.4	.27A	Spring
	53123SP50K	23 WATT Full Spring Dimmable 5000K GU Base	23	100W	1450	4.9	2.4	.27A	Spring
6500°K ordering suffix 65K	4R3016TD65K	16 WATT R30 Dimmable 6500K	16	65W	550	5.4	3.7	.19A	R30
	4R2014TD65K	14 WATT R20 Dimmable 6500K	14	50W	380	5.1	2.5	.17A	R20
	4R4016TD65K	16 WATT R40 Dimmable 6500K	16	65W	675	6.1	4.8	.19A	R40
	41316TD65K	16 WATT A-Lamp Dimmable 6500K	16	60W	775	5.5	2.4	.19A	A-21
	41315TD65K	15 WATT A-Lamp Dimmable 6500K	15	60W	675	5.1	2.3	.18A	A-19
	4G2515TD65K	15 WATT G25 Globe Dimmable 6500K	15	60W	675	5.2	3.1	.18A	G25
	4G4015TD65K	15 WATT G40 Globe Dimmable 6500K	15	60W	675	7.3	4.8	.18A	G40
	5011465K	14 WATT Full Spring Dimmable 6500K	14	60W	800	4.7	2.0	.17A	Spring
	5012365K	23 WATT Full Spring Dimmable 6500K	23	100W	1400	4.9	2.4	.27A	Spring

For the most up-to-date specs, please visit www.tcp.com

1. Q: Do TCP TruDim® Series products dim exactly like an incandescent lamp?

A: 1) TCP TruDim® Series products have slightly different dimming characteristics due to the electronics of a CFL vs. an incandescent filament however they are very close in performance.
2) However it is important to note that Electronic components do not respond in the same manner as a heated incandescent filament therefore there will be slight differences in visual operational characteristics.
3) Remember this is a Compact Fluorescent Lamp which has a high level of technology engineered into it vs. an incandescent which has zero technology, they are not the same.

2. Q: Do TCP's TruDim® Series products work on ordinary incandescent dimmers?

A: YES! Designed specifically for use with standard non-illuminated 600 watt incandescent slide or rotary dimmers that are currently available in the market. They will also work with CFL dimmers that are available in the market. Consult TCP Customer Care or the dimmer manufacturer for compatibility with other dimmer types.

3. Q: Will TCP's TruDim® Series products work on every incandescent dimmer ever made?

A: NO! Although TCP's TruDim® Series product has been approved for use with 600w incandescent dimmers, there are certain types of dimmers that have proven to be incompatible due to certain dimmer features or outdated dimmer technology.

4. Q: How can I tell if a dimmer is not compatible with a TCP TruDim® lamp?

A: Generally speaking, certain programmable electronic and/or remote control dimmers are not compatible. Additionally, high wattage dimmers (1000w+) are typically incompatible because of different voltage/current regulations, manufacturing regulations, and manufacturing tolerances. Illuminated (glow-in-the-dark) dimmers are usually incompatible with dimmable CFLs.

5. Q: Can TCP recommend a compatible dimmer?

A: Although TCP is not at liberty to recommend one manufacturer or brand over another, basic lab testing and real-world experience has shown that 600 Watt max, mid-grade, non-illuminated slide and rotary dimmers function well. Also the new CFL-LED dimmers now available also function well. Follow these links to obtain more compatibility information about Lutron and Leviton dimmers:

<http://www.lutron.com.service-support/technical/pages/technicalfaq.aspx>

<http://wwwcommunities.leviton.com.docs/doc-2542>

6. Q: What are the compatible dimmers that Lutron recommends?

A: Through independent testing at Lutron's laboratories, the following Lutron wall-mount and in-line models were deemed acceptable for use with TCP Pro and TruDim CFL lamps:

Credenza® C•L™: TTCL-100H

Diva® C•L™: DVWCL-153P, DVCL-153P, DVSCCL-153P

Skylark Contour™ CL: CTCL-153P

Lumea® C•L: LGCL-153PH

Toggler®/Ariadni® C•L™: TGCL-153P, AYCL-153P

7. Q: Will TCP's TruDim® Series products flicker at the low level as other CFL Dimmable product does?

A: 1) No! TCP's Dimmable series product dims down to 2% without flicker. However at Zero hours the bulbs may look unstable when first put into use. We recommend to season the bulbs at full power for 2 hours this will stabilize the phosphor and mercury resulting much better dimming and lamp performance.

2) It is important to note that because TruDim will dim down to such a low level it is recommended that you not use the dimming controller, knob or slider for example, as an on/off device. By sliding or turning the device all the way down this does not turn the power off completely to the lamps. Because TruDim has an integrated circuit chip in the circuit board this may read the low power and cause the TruDim lamps to strobe. We recommend to use the controller to adjust light level only and use the on/off switch to control power to the lamps.

8. Q: Does the performance of TCP's TruDim® Series products rely on the quality of a dimmer?

A: YES! Consideration must be given to the age and quality of a dimmer if it is to be used with a TCP TruDim® Series product. Because of the recent push to save energy, newer dimmers are more likely to be CFL compatible. Older dimmers are not as capable of withstanding voltage spikes, which, if used, would ultimately damage the circuitry in the TCP TruDim® Series product.

9. Q: Does the performance of TCP's TruDim® Series products rely on the quality of a dimmer?

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10. Q: Can 1000 watt or larger commercial grade dimmers be used with TCP's TruDim® Series products?

A: No! Most commercial grade dimmers are manufactured to be used with incandescent lamps which have a large resistive load when energized. Since TCP TruDim products are electronic, they do not have the same resistive load as an incandescent, and as such, the dimmer will not be able to maintain the proper power balance needed to perform as intended.

11. Q: How do you properly use TCP's TruDim® Series products?

A: TCP recommends a burn-in period of 2 hours at full power to stabilize the lamp before dimming. If lamps have been idle for an extended period of time burn at full power for 30 minutes before dimming. When dimming to the off position lamps may pulse at the low end briefly then turn off. This is a safe mode for the lamps and will not hurt the lamp or dimmer.

12. Q: Will it damage the lamps if they are turned on at too low a level and they don't come on?

A: No! TCP TruDim lamps are designed to be turned off and on at a low level with an on/off switch located on the dimmer. If the lamps do not turn on simply move the dimming level up till the lamps turn on then dim down to desired level.

13. Q: What is the warranty and average life of TCP's TruDim® Series products?

A: TCP's TruDim® Series product is warranted for 24 months. Using accepted industry standards, the average life is rated at 12,000 hours.

14. Q: Can TCP TruDim® be used in 3-way lamp sockets?

A: No! TCP's TruDim® Series product will not perform like a 3 way bulb in a 3 way socket they will only have 1 light level at full power.

15. Q: Will frequent dimming significantly shorten the life of a TCP TruDim® Series products?

A: NO! Frequent dimming will not significantly reduce the life of the TCP TruDim® Series product.

16. Q: Can the TCP TruDim® be used with a touch lamp?

A: NO! Touch lamps are actually controlled by a 3-way switch, so the same rules as the 3-way switch apply in this case.

17. Q: How many TCP TruDim® lamps can be used on the same dimmer?

A: To compensate for "inrush current" (timed in milliseconds, the initial flow of electrical current that is needed to start the CFL), TCP recommends dividing the dimmer's rated wattage in half and then using that wattage number to outfit the fixture. For example:

$$600 \text{ Watt Dimmer} \div 2 = 300 \text{ Watts}$$

$$\text{TCP's 14W Dimmable CFL: } 300 \div 14 = 21 \text{ lamps}$$

$$\text{TCP's 16W Dimmable CFL: } 300 \div 16 = 18 \text{ lamps}$$

NOTE: Since every dimmer is manufactured differently there may be some variance in these numbers. The above examples are a rough estimate only.

18. Q: Will TruDim® product all turn off simultaneously when dimmed down to 2% or below?

A: No. If you have a series of TruDim product on a circuit as you dim down to 2% or below the lamps will turn off at different times. Eventually all will turn off but you may have a situation (extremely small range on your dimmer control) with a portion of the lamps still on and the rest off.

19. Q: Why do some of the lamps strobe at the very low end before turning off?

A: 1. This is due to the low dim level turn-on capability. When the lamps are dimmed to below 2% some of the lamps may pulse or strobe 4-6 times then turn off. This does not affect the life or performance of the lamps.

2. Also at the bottom of the dimming trail on a dimmer the power is never actually turned off so the TruDim lamps may still be reading power causing the strobe. It is our recommendation to not use the dimming knob or slider as an on/off device, use it for light level control and use the on/off switch to turn bulbs on and off. If the lamps continue to strobe move the knob or slider up until the lamps turn back on at a low level. Then use the on/off switch to turn lamps on/off.

20. Q: Can TruDim® lamps be used with other dimming CFL's or lamps?

A: No it is recommended to use 100% TruDim lamps on a circuit do not use any other Dimming CFL lamps in combination with TruDim. This may affect the performance of the lamps during dimming mode.