

Compact Fluorescent Ballast

HOWARDTM
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Applications

- Ambience Lighting
(living rooms, bedrooms,
and kitchens)
- Orientation Lighting
(halls, staircases)

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Ballast Features Include

- Multi-voltage technology
- Automatic restart capability
- One or two lamp operation
- UL Listed
- End-of-lamp-life protection
- Class A sound rating
- Three to five year warranty*

*Ballasts with a maximum case temperature of 90°C have a three (3) year warranty. Ballasts with a maximum case temperature of 70°C have a five (5) year warranty.

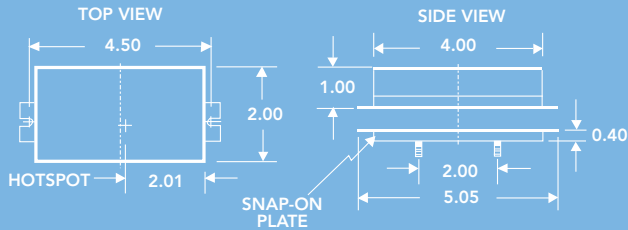
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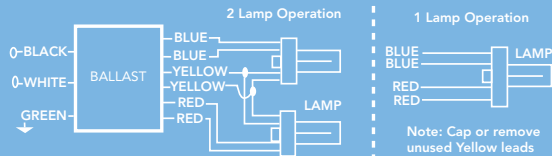
Howard Electronic Compact Fluorescent ballasts offer first-rate performance and solid reliability. All models are UL certified and feature program start, universal voltage (120-277v), bottom or side entry terminal blocks, color-coded wiring, and end of lamp life protection, backed by a five-year warranty. Our CF electronic ballasts are available in thirteen (EP2/13CF/MV/K), eighteen (EP2/18CF/MV/K), twenty-six (EP2/26CF/MV/K2), and forty-two (EP2/42CF/MV/K2) wattages, making them ideal for a wide variety of compact fluorescent lamp applications.

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Ballast Dimensions



Wiring Diagram



TWIN (CFSE), 4 PIN
13W, 24W



DOUBLE (CFDE), 4 PIN
26W



TRIPLE (CFTE), 4 PIN
26/32/42W



2D21/28/38W

Packaged Kit Includes

- Dual entry poke-in connector ballast
- Snap-on plate
- Wire set
- Wire removing tool
- Mounting hardware – nuts & washers

Lamp Type	No. of Lamps	Lamp Watts	Line Voltage	Ballast Factor	Input Watts	Input Current (Amps)	Power Factor	THD	Ballast Efficacy Factor
CF7SE	1	7	120	0.88	9	0.08	0.99	<10%	9.53
CF7SE	1	7	277	0.93	10	0.04	0.86	<20%	9.42
CF7SE	2	7	120	0.91	16	0.14	0.99	<10%	5.59
CF7SE	2	7	277	0.91	17	0.06	0.93	<20%	5.48
CF9SE	1	9	120	0.92	11	0.09	0.99	<10%	8.37
CF9SE	1	9	277	1.00	12	0.05	0.89	<20%	8.42
CF9SE	2	9	120	0.92	19	0.16	0.99	<10%	4.70
CF9SE	2	9	277	0.98	21	0.08	0.95	<15%	4.77
2D10W	1	10	120	0.92	13	0.11	0.99	<10%	7.09
2D10W	1	10	277	0.93	13	0.05	0.90	<20%	6.93
2D10W	2	10	120	0.94	24	0.20	0.99	<10%	3.90
2D10W	2	10	277	0.97	24	0.09	0.96	<15%	4.01
CF13DE	1	13	120	1.04	17	0.15	0.99	<10%	6.02
CF13DE	1	13	277	1.05	18	0.07	0.94	<20%	5.93
CF13DE*	2	13	120	1.03	33	0.27	0.99	<10%	3.17
CF13DE*	2	13	277	1.04	32	0.12	0.98	<10%	3.23
CF13TE	1	13	120	0.97	16	0.14	0.99	<10%	6.04
CF13TE	1	13	277	0.96	16	0.06	0.93	<20%	5.90
CF13TE*	2	13	120	0.92	30	0.25	0.99	<10%	3.10
CF13TE*	2	13	277	0.93	29	0.11	0.97	<10%	3.17
2D16W	1	16	120	0.90	18	0.15	0.99	<10%	5.08
2D16W	1	16	277	0.90	18	0.07	0.94	<20%	5.04

*Primary lamp design

Thousands of Lighting Possibilities!

Howard Lighting manufactures a vast selection of high quality lighting products that are ideal for commercial and residential uses. Featuring Howard's best-in-class ballasts, fixtures, and lamps; we offer over a thousand possible lighting combinations. Our products are easy to install, require minimal maintenance, and are engineered for performance.



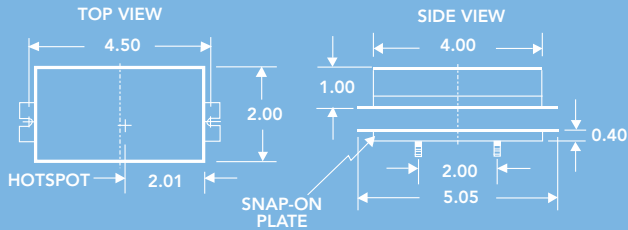
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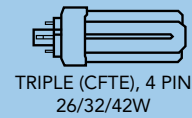
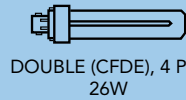
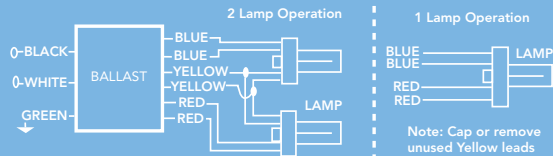
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EP2/18CF/MV/K

Ballast Dimensions



Wiring Diagram



Packaged Kit Includes

- Dual entry poke-in connector ballast
- Snap-on plate
- Wire set
- Wire removing tool
- Mounting hardware – nuts & washers

Lamp Type	No. of Lamps	Lamp Watts	Line Voltage	Ballast Factor	Input Watts	Input Current (Amps)	Power Factor	THD	Ballast Efficacy Factor
2D16W	2	16	120	1.02	38	0.32	0.99	<10%	2.70
2D16W	2	16	277	1.08	38	0.14	0.98	<10%	2.81
CF18DE	1	18	120	1.12	23	0.19	0.99	<10%	4.80
CF18DE	1	18	277	1.13	23	0.09	0.96	<10%	4.83
CF18DE*	2	18	120	1.08	44	0.36	0.99	<10%	2.48
CF18DE*	2	18	277	1.08	42	0.16	0.99	<10%	2.54
CF18TE	1	18	120	1.03	21	0.18	0.99	<10%	4.91
CF18TE	1	18	277	1.04	21	0.08	0.95	<10%	4.88
CF18TE*	2	18	120	0.98	39	0.33	0.99	<10%	2.52
CF18TE*	2	18	277	1.11	39	0.14	0.98	<10%	2.88
2D21W	1	21	120	0.84	20	0.17	0.99	<10%	4.11
2D21W	1	21	277	0.84	21	0.08	0.99	<10%	4.07
2D21W	2	21	120	0.80	38	0.31	0.99	<10%	2.13
2D21W	2	21	277	0.80	37	0.14	0.98	<10%	2.15

*Primary lamp design

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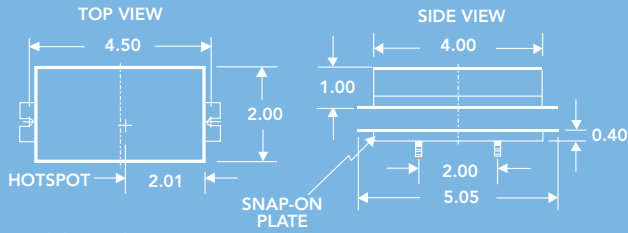
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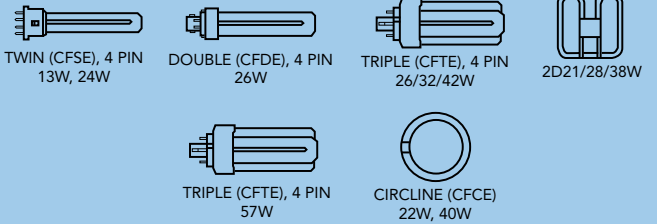
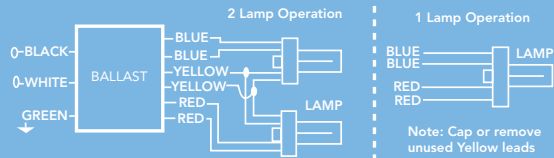


EP2/26CF/MV/K2

Ballast Dimensions



Wiring Diagram



Packaged Kit Includes

- Dual entry poke-in connector ballast
- Snap-on plate
- Wire set
- Wire removing tool
- Mounting hardware – nuts & washers

Lamp Type	No. of Lamps	Lamp Watts	Line Voltage	Ballast Factor	Input Watts	Input Current (Amps)	Power Factor	THD	Ballast Efficacy Factor
CFQ26W/G24q*	2	26	120	1.00	51	0.43	0.99	<10%	1.96
CFQ26W/G24q*	2	26	277	1.00	51	0.19	0.99	<10%	1.96
CFQ26WG24q	1	26	120	1.00	27	0.23	0.98	<10%	3.70
CFQ26WG24q	1	26	277	1.00	27	0.10	0.98	<10%	3.70
CFTR26W/GX24q	2	26	120	1.00	54	0.45	0.99	<10%	1.85
CFTR26W/GX24q	2	26	277	1.00	54	0.20	0.99	<10%	1.85
CFTR26W/GX24q	1	26	120	1.10	29	0.24	0.98	<10%	3.79
CFTR26W/GX24q	1	26	277	1.10	29	0.11	0.98	<10%	3.79
CFTR42W/GX24q	1	42	120	0.98	46	0.38	0.98	<10%	2.13
CFTR42W/GX24q	1	42	277	0.98	46	0.17	0.98	<10%	2.13
CFTR32W/GX24q	1	32	120	0.98	36	0.31	0.98	<10%	2.72
CFTR32W/GX24q	1	32	277	0.98	36	0.13	0.98	<10%	2.72
CFTR57W/GX24q	1	57	120	0.81	52	0.43	0.99	<10%	1.56
CFTR57W/GX24q	1	57	277	0.82	51	0.19	0.99	<10%	1.61
CFQ57W/G24q	1	57	120	0.81	52	0.43	0.99	<10%	1.56
CFQ57W/G24q	1	57	277	0.82	51	0.19	0.99	<10%	1.61
CFS21W/GR10q	2	21	120	1.12	51	0.42	0.99	<10%	2.20
CFS21W/GR10q	2	21	277	1.12	51	0.18	0.99	<10%	2.20
FT24W/2G11	1	24	120	0.93	48	0.41	0.99	<10%	1.94
FT24W/2G11	1	24	277	0.93	48	0.18	0.99	<10%	1.94
FT24W/2G11	2	24	120	0.90	26	0.21	0.99	<10%	3.52
FT24W/2G11	2	24	277	0.89	26	0.10	0.96	<10%	3.46
FT18W/2G11	2	18	120	0.73	33	0.27	0.99	<10%	2.24
FT18W/2G11	2	18	277	0.74	33	0.12	0.98	<10%	2.26
F24T5 HO	2	24	120	1.00	51	0.44	0.99	<10%	1.96
F24T5 HO	2	24	277	1.00	51	0.19	0.98	<10%	1.96
FC16T9 40W	1	40	120	1.00	43	0.36	0.99	<10%	2.33
FC16T9 40W	1	40	277	1.00	43	0.16	0.97	<10%	2.33
FC12T5 40W	1	40	120	0.74	34	0.28	0.99	<10%	2.17
FC12T5 40W	1	40	277	0.75	34	0.13	0.98	<10%	2.18
FC9T5 22W	1	22	120	1.02	27	0.22	0.99	<10%	3.84
FC9T5 22W	1	22	277	1.03	27	0.08	0.97	<10%	3.82

*Primary lamp design



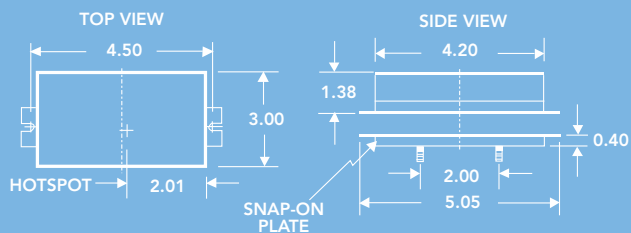
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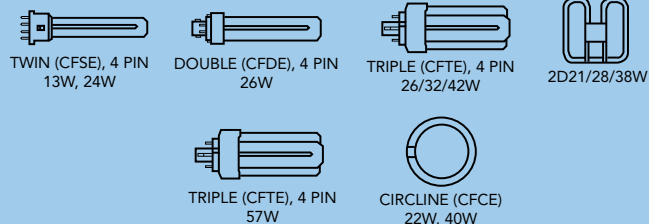
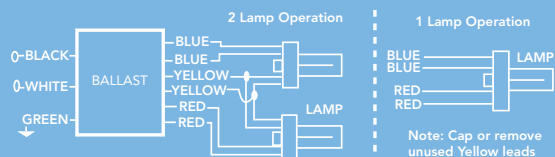
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EP2/42CF/MV/K2

Ballast Dimensions



Wiring Diagram



Packaged Kit Includes

- Dual entry poke-in connector ballast
- Snap-on plate
- Wire set
- Wire removing tool
- Mounting hardware – nuts & washers

Lamp Type	No. of Lamps	Lamp Watts	Line Voltage	Ballast Factor	Input Watts	Input Current (Amps)	Power Factor	THD	Ballast Efficacy Factor
CFM36W/2G10	1	36	120	0.80	33	0.27	0.99	<10%	2.45
CFM36W/2G10	1	36	277	0.80	33	0.13	0.94	<15%	2.44
CFM36W/2G10	2	36	120	0.78	63	0.52	0.99	<10%	1.25
CFM36W/2G10	2	36	277	0.79	62	0.23	0.98	<10%	1.27
CFQ26W/G24q	1	26	120	1.00	32	0.27	0.99	<10%	3.12
CFQ26W/G24q	1	26	277	1.00	32	0.13	0.95	<12%	3.12
CFQ26W/G24q	1	26	120	0.90	54	0.45	0.99	<10%	1.67
CFQ26W/G24q	1	26	277	0.90	54	0.21	0.97	<12%	1.67
CFS28W/GR10q	1	26	120	1.00	34	0.29	0.99	<10%	2.94
CFS28W/GR10q	1	26	277	1.00	34	0.14	0.93	<10%	2.94
CFTR26W/GX24q	1	26	120	1.00	32	0.27	0.99	<10%	3.12
CFTR26W/GX24q	1	26	277	1.00	32	0.13	0.95	<12%	3.12
CFTR26W/GX24q	2	26	120	0.90	54	0.45	0.99	<10%	1.67
CFTR26W/GX24q	2	26	277	0.90	54	0.21	0.97	<12%	1.67
CFTR32W/GX24q	1	32	120	0.96	42	0.35	0.99	<10%	2.29
CFTR32W/GX24q	1	32	277	0.96	42	0.13	0.96	<12%	2.29
CFTR32W/GX24q	2	32	120	0.95	63	0.53	0.99	<10%	1.51
CFTR32W/GX24q	2	32	277	0.95	63	0.23	0.98	<12%	1.51
CFTR42W/GX24q	1	42	120	1.00	47	0.40	0.99	<10%	2.13
CFTR42W/GX24q	1	42	277	1.00	47	0.18	0.96	<10%	2.13
CFTR42W/GX24q*	2	42	120	1.00	94	0.77	0.99	<10%	1.14
CFTR42W/GX24q*	2	42	277	1.00	93	0.38	0.98	<10%	1.08
CFTR57W/GX24q	1	57	120	1.00	58	0.49	0.99	<10%	1.72
CFTR57W/GX24q	1	57	277	1.00	58	0.22	0.97	<12%	1.72
CFTR57W/GX24q	1	57	120	1.00	73	0.61	0.99	<10%	1.37
CFTR57W/GX24q	1	57	277	1.00	73	0.27	0.97	<12%	1.37
FC12T5 40W	1	40	120	0.84	37	0.31	0.99	<10%	2.24
FC12T5 40W	1	40	277	0.84	37	0.14	0.95	<15%	2.24
FC12T5 40W	2	40	120	0.80	70	0.59	0.99	<10%	1.13
FC12T5 40W	2	40	277	0.81	70	0.26	0.98	<10%	1.15
FC9T5 22W	2	22	120	1.10	52	0.44	0.99	<10%	2.11
FC9T5 22W	2	22	277	1.10	52	0.19	0.97	<12%	2.11
FC9T5+FC12T5	1+1	22 40	120	0.90	67	0.55	0.99	<10%	1.34
FC9T5+FC12T5	1+1	22 40	277	0.90	67	0.25	0.98	<10%	1.34

Continued on next page...

*Primary lamp design

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TWIN (CFSE), 4 PIN
13W, 24W



DOUBLE (CFDE), 4 PIN
26W



TRIPLE (CFTE), 4 PIN
26/32/42W



2D21/28/38W



TRIPLE (CFTE), 4 PIN
57W



CIRCLINE (CFCE)
22W, 40W

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Lamp Type	No. of Lamps	Lamp Watts	Line Voltage	Ballast Factor	Input Watts	Input Current (Amps)	Power Factor	THD	Ballast Efficacy Factor
FT24W/2G11	1	24	120	0.92	26	0.22	0.99	<10%	3.56
FT24W/2G11	1	24	277	0.92	27	0.10	0.92	<15%	3.48
FT24W/2G11	2	24	120	1.00	54	0.45	0.99	<10%	1.85
FT24W/2G11	2	24	277	1.00	54	0.20	0.97	<10%	1.85
FT39W/2G11	1	39	120	1.00	45	0.37	0.99	<10%	2.22
FT39W/2G11	1	39	277	1.00	45	0.17	0.96	<12%	2.22
FT39W/2G11	2	39	120	0.95	82	0.69	0.99	<10%	1.16
FT39W/2G11	2	39	277	0.95	82	0.30	0.98	<10%	1.16
FT40W/2G11	1	40	120	1.00	45	0.37	0.99	<10%	2.22
FT40W/2G11	1	40	277	1.00	45	0.17	0.96	<12%	2.22
FT40W/2G11	2	40	120	0.95	82	0.69	0.99	<10%	1.16
FT40W/2G11	2	40	277	0.95	82	0.30	0.98	<10%	1.16
FT56W/2G11	1	55	120	0.71	43	0.36	0.99	<10%	1.65
FT56W/2G11	1	55	277	0.72	44	0.16	0.96	<12%	1.65

*Primary lamp design

Cross-Reference

Howard Industries	Advance	ESI	Fulham	Keystone	Osram	Robertson	Universal/Magnetek
EP2/13CF/MV/K	ICF-2S13	ES-2/1-CFQ-13/10-UNVC/D ES-1-2D-16/10-UNV-D	1 Racehorse 1	KTEB-213-UV-TP-PIC-DW	QTP 1/2x13CF/UNV	PSM213CQMV	C213UNVSE/BE/BES C213UNVME00K
EP2/18CF/MV/K	ICF-2S18 REL-2Q18 VEL-2Q18 R-2Q18-4P-TP V-2Q18-4P-TP	ES-2/1-CFQ-18-UNV-C/D ES-1-2D-21-UNV-D	2 Racehorse 2	KTEB-218-UV-TP-PIC-DW	QTP 1/2x18CF/UNV	PSM218CQMV	C218UNVSE/BE/BES C218UNVME00K
EP2/26CF/MV/K2	ICF-2S26 REL-1T32 VEL-1T32 REL-1T42 VEL-1T42	ES-2/1-CFQ-26-UNV-C/D ES-1-CFH-42/32/26-UNV-C/D ES-1-T5C-40/22-UNV-D	3 Racehorse 3	KTEB-226-UV-TP-PIC-DW	QTP 1/2x26/32/42CF/UNV QTP 2x26/UNV QTP 1/2xCF/UNV	PSM226CQMV	C226UNVSE/BE/BES C226UNVME00K C132SR120BE C132SR277BE C226SR120BE C226SR277BE
EP2/42CF/MV/K2	ICF-2S42	ES-2-CFH-42-UNV-G/H	4 Racehorse 4	KTEB-242T-UV-TP-PIC-DW	M2-CF-263242-M-UNIV	PSG242TRMV PSH242TRMVW	C242UNV



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Nestled within the 504 acre Howard Technology Park, our new corporate headquarters are surrounded and filled with our superior lighting products. From the round back floods and compact fluorescents throughout the approximately 62,000 square feet of office space to the high bays illuminating the roughly 77,000 square foot Howard Technology Solutions and Howard Medical manufacturing facilities, we are your total lighting resource.

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