

COMPACT LAMP CHART 4 PIN ONLY

Naturallighting.com
 www.naturallighting.com
 888.900.6830
 FAX: 281.486.0352
 email: sales@naturallighting.com

1. Find your lamp type.
2. The quantity & wattage of lamps.
3. Look across and find the ballast you need.
4. The colored number represents your wiring diagram



*** NATURALLIGHTING.COM DOES NOT WARRANTY COMPACT 4 PIN, FLAT QUAD, T5 AND BIAX LAMPS WHEN USING WORKHORSE OR INSTANT START BALLASTS.

WORKHORSE

WHAM

LONGHORSE

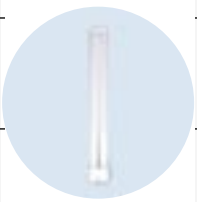
BIAX

	WH 1	WH 2	WH 22	WH 3	WH 33	WH 4	WH 5	WH 6	WH 7	WH 8	WM 1	WM 2	LH 1	LH 2	LH 3	LH 4	LH 5	LH 6	LH 7
1 X 5W	3	2				2					15	2	3	2		2			
2 X 5W		1	1			1		9						1		1			9
3 X 5W								8											8
4 X 5W					7		7	7									7		7
1 X 7W	3	2									15	2	3	2					
2 X 7W		1				1		9				1		1		1			9
3 X 7W								8											8
4 X 7W								7											7
1 X 9W	3	2									15	2	3	2					
2 X 9W		1				1						1		1		1			
3 X 9W								8											8
4 X 9W								7											7
1 X 11W	3										15	2	3						
2 X 11W		1				1						1		1		1			
3 X 11W								8											8
4 X 11W								7											7
1 X 13W		3	2	2		2		14				3		3	2	2			14
2 X 13W			1	1	9		9	11							1		9		11
3 X 13W					8		8										8		
4 X 13W					7		7										7		
1 X 18W		3	2	2	14	2		14				3		3	2	2			14
2 X 18W			1	1	9		9	9							1		9		9
3 X 18W					8		8										8		
4 X 18W							7										7		
1 X 24W		3	2	2	14	3	14	14				3		3	2	3	14		14
2 X 24W				1	9		9	11							1		9		11
3 X 24W							8										8		
1 X 27W		3	2	2	14	3	14	14						3	2	3	14		14
2 X 27W					9		9	11									9		11
4 X 27W									7										
1 X 28W PA			3	3	14		14	10							3		14		10
2 X 28W PA					11		11										11		
3 X 28W PA									8										
4 X 28W PA									7										
1 X 36/39W			2*	2*	14*	3*	14*	10*							2*	3*	14*		10*
2 X 36/39W							9*	11*									9*		11*
3 X 36/39W									8*										22*
4 X 36/39W									7*										25*
5 X 36/39W																			27*
6 X 36/39W																			28*
1 X 40W				2	14	2		14							2	2			14
2 X 40W							9	11									9		11
3 X 40W							8										8		
4 X 40W									7										25
5 X 40W										7									27
1 X 50W				3	14	3	14	10							3	3	14		10
2 X 50W							11	11									11		11
3 X 50W									8										25
4 X 50W									7										27
1 X 55W OS				3	10		10	12							3		10		12
2 X 55W OS							11		9								11		
3 X 55W OS									8										26
1 X 55W PA					10		12	13	14								12		13
2 X 55W PA									11										23
3 X 55W PA																			26
1 X 96W PA							12		14								12		17
2 X 96W PA									11										24

CFT, PS-S/4P,
 PL-L-BX/4P-CFDS/E,
 DL



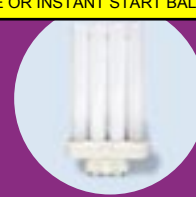
BIAX



PA=Panasonic
 OS=Osram Sylvania
 HO=High Output
 VHO=Very High Output

*Denotes change in catalog application

COMPACT LAMP CHART 4 PIN ONLY



FLAT QUAD
DF, FQL



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WORKHORSE

WHAM

LONGHORSE

	WH 1	WH 2	WH 22	WH 3	WH 33	WH 4	WH 5	WH 6	WH 7	WH 8	WM 1	WM 2	LH 1	LH 2	LH 3	LH 4	LH 5	LH 6	LH 7
--	------	------	-------	------	-------	------	------	------	------	------	------	------	------	------	------	------	------	------	------

FLAT QUAD

1 X 18W OS		3	2	2	14	3	14	14				3		3	2	3	14	14	
2 X 18W OS					9		9	11									9	11	
3 X 18W OS							8										8		
3 X 18W PA									*										
4 X 18W PA									7										
1 X 24W OS		3	2	2	14	3		14				3		3	2	3		14	
2 X 24W OS				1	9		9	11							1		9	11	
3 X 24W OS							8										8		
1 X 28W PA				3	10		10	13							3		10	13	
2 X 28W PA									9										
1 X 36W OS		*		2	14	3	14	10						*	2	3	14	10	
2 X 36W OS					9		9	11									9	11	
4 X 36W OS									7										
1 X 55W PA					10		12	13	14								12	13	
2 X 55W PA									11										
1 X 96W PA							12		14								12		
2 X 96W PA									11										

QUAD

1 X 10W	3	2				2					15	2	3	2		2			
2 X 10W		1	1			1		9						1		1		9	
3 X 10W								8										8	
4 X 10W					7			7										7	
1 X 13W	3	2									15	2	3	2					
2 X 13W		1				1						1				1			
3 X 13W								8										8	
4 X 13W								7										7	
1 X 18W	3	2				2					15	2	3	2		2			
2 X 18W				1		1		9							1	1		9	
3 X 18W					8		8	8									8	8	
4 X 18W							7									7			
1 X 26W		3	2	2	14	3		14				3		3	2	3		14	
2 X 26W				1	9		9	11							1		9	11	
3 X 26W							8										8		
4 X 26W							7										7		
1 X 27W PA					10		10	13	14								10	13	
2 X 27W PA									9										

TRIPLE BIAx

1 X 13W	3	2									15	2	3	2					
2 X 13W		1				1						1				1			
3 X 13W								8										8	
4 X 13W								7										7	
1 X 18W	3	2				2					15	2	3	2		2			
2 X 18W				1				9							1			9	
3 X 18W					8			8										8	
4 X 18W							7									7			
1 X 26W		3	2	2	14	3		14				3		3	2	3		14	
2 X 26W					9		9	11									9	11	
3 X 26W							8										8		
4 X 26W							7										7		
1 X 32W		3	2	2	14	3	14	14					3	2	3	14	14		
2 X 32W					9		9	11								9	11		
3 X 32W							8									8			
1 X 42W				2	14	3	14	14						2	3	14	14		
2 X 42W							9	11								9	11		
3 X 42W							8									8			

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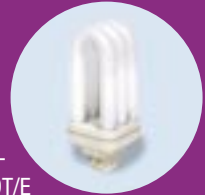
1. Find your lamp type.
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3. Look across and find the ballast you need.
4. The colored number represents your wiring diagram



QUAD
CFQ,
PL-C-DBX/4P-
CFDD/E



TRIPLE BIAX
CFM, PL-T-
TBX/4P-CEFD/T/E



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WORKHORSE

WHAM

LONGHORSE

2D

	WH 1	WH 2	WH 22	WH 3	WH 33	WH 4	WH 5	WH 6	WH 7	WH 8	WM 1	WM 2	LH 1	LH 2	LH 3	LH 4	LH 5	LH 6	LH 7
1 X 10W	3	2									15	2	3	2					
2 X 10W		1				1		9				1				1			9
3 X 10W								8											8
4 X 10W								7											7
1 X 16W	3	2				2					15	2	3	2		2			
2 X 16W			1					9											9
3 X 16W								8											8
4 X 16W					7		7	7									7		7
1 X 21W		2				2							2			2			
2 X 21W				1				9							1				9
3 X 21W					8		8	8									8		8
4 X 21W					*		7										7		
1 X 28W		3	2	2		2		14				3		3	2	2			14
2 X 28W				1	9		9	11							1		9		11
3 X 28W							8										8		
4 X 28W							7										7		
1 X 38W				2	14	3	14	14							2	3	14	14	
2 X 38W							9	11									9	11	
4 X 38W									7										7
1 X 55W					12		12		14								12		
2 X 55W									11										11

CIRCLELINE

1 X 20W		3	2	2	14	3	14	14				3		3	2	3	14	14	
2 X 20W					9		9	11									9	11	
4 X 20W									7										7
1 X 22W		3	2	2	14	3	14	14				3		3	2	3	14	14	
2 X 22W					9		9	11									9	11	
4 X 22W									7										7
1 X 32W			3	3	14		14	10							3		14	10	
2 X 32W					11		11										11		
3 X 32W									8										8
4 X 32W									7										7
1 X 40W				2	14	3	14	10							2	3	14	10	
2 X 40W							9	11									9	11	
4 X 40W									7										7
1 X 22+32				1			9	11							1		9	11	
1 X 32+40							11										11		

T5 CIRCLE

1 X 22W		3	2	2	14	3		14				3		3	2	3			14
2 X 22W					9			9	11									9	11
3 X 22W					8			8										8	
1 X 40W				2	14	3	14	14							2	3	14	14	
2 X 40W							9	11									9	11	
1 X 55W OS				3	10*			12							3			12	
2 X 55W OS							11		9								11		
1 X 22+40				1			9	11							1		9	11	



2D - CFS, 2D/4P

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CIRCLELINE - 1-1/8" dia.



T5 CIRCLELINE - 5/8" dia.

LINEAR & U-SHAPE LAMP CHART

U-SHAPE



LINEAR
LAMPS

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WORKHORSE

WHAM

LONGHORSE

WH 1	WH 2	WH 22	WH 3	WH 33	WH 4	WH 5	WH 6	WH 7	WH 8	WM 1	WM 2	LH 1	LH 2	LH 3	LH 4	LH 5	LH 6	LH 7
------	------	-------	------	-------	------	------	------	------	------	------	------	------	------	------	------	------	------	------

T2

1/4" dia.

1 X F6	2											2						
2 X F6	1											1						
1 X F8	2											2						
2 X F8	1											1						
1 X F11	2											2						
2 X F11	1											1						
1 X F13	2											2						
2 X F13	1											1						

T5

5/8" dia.

1 X F4	3	2										15	2		3	2		
2 X F4	1				1							1	1					
3 X F4							8											8
4 X F4							7											7
1 X F6	3	2										15	2		3	2		
2 X F6	1				1							1	1					
3 X F6							8											8
4 X F6							7											7
1 X F8	2	2										15	2		2	2		
2 X F8	1				1							1	1					
3 X F8							8											8
4 X F8							7											7
1 X F13	3	2										15	2		3	2		
2 X F13	1				1							1	1					
3 X F13							8											8
4 X F13							7											7
1 X F14	3	2										15	2		3	2		
2 X F14	1				1							1	1					
3 X F14							8											8
4 X F14							7											7
1 X F21	3	2										15	2		3	2		
2 X F21	1				1							1	1					
3 X F21							8											8
4 X F21							7											7
1 X F28	3	2										15	2		3	2		
2 X F28					1													1
3 X F28							8											8
4 X F28							7											7
1 X F35		2										15			2			
2 X F35					1													1
3 X F35							8											8
4 X F35							7											7

HO

1 X F24 HO	3	2	2	14	3		14						3	2	3			14
2 X F24 HO			1	9		9	11							1		9		11
3 X F24 HO						8										8		
4 X F24 HO						7			27							7		
5 X F24 HO									28									
6 X F24 HO									29									
1 X F39 HO			2	14	3	14	14							2	3	14		14
2 X F39 HO						9	11									9		11
3 X F39 HO						8			25							8		
4 X F39 HO								7	27									
1 X F54 HO			3	14		14	12							3		14		12
2 X F54 HO						11			16							11		
3 X F54 HO								8	22									25
4 X F54 HO								7	25									
1 X F80 HO						10	12									10		12
2 X F80 HO								9	16									

T6

3/4" dia.

1 X F42	3	2					2						3	2		2		9
2 X F42							1								1	1		8
3 X F42																		8
4 X F42																		7
1 X F64		2					2						2			2		9
2 X F64							1								1			8
3 X F64																		8

T8

1" dia.

1 X F13		3	2	2	14	3		14				3		3	2	3		14
2 X F13				1	9		9	11						1			9	11
3 X F13					8		8									8		
4 X F13									7									
5 X F13									27									28
6 X F13									29									
1 X F14		3	2	2	14	3	14	14				3		3	2	3	14	14
2 X F14					9		9	11								9		11
3 X F14							8									8		
4 X F14									25									
5 X F14									27									28
6 X F14									29									

LINEAR & U-SHAPE LAMP CHART

WORKHORSE

WHAM

LONGHORSE

	WH 1	WH 2	WH 22	WH 3	WH 33	WH 4	WH 5	WH 6	WH 7	WH 8	WM 1	WM 2	LH 1	LH 2	LH 3	LH 4	LH 5	LH 6	LH 7
--	------	------	-------	------	-------	------	------	------	------	------	------	------	------	------	------	------	------	------	------

18
1" dia.

1 X F15		3	2	2		3		14				3		3	2	3			14	
2 X F15			1	1	9		9	11							1		9		11	
3 X F15					8		8										8			
4 X F15					7		7										7			
5 X F15										28										28
6 X F15										29										29
1 X F17		3		2		2						3		3	2	2			9	
2 X F17			1	1				9							1					9
3 X F17					8		8											8		
4 X F17					7		7											7		
6 X F17										16										16
1 X F18		3	2	2	14	3		14				3		3	2	3			14	
2 X F18					9		9	11										9		11
3 X F18							8											8		
4 X F18									7											7
5 X F18										25										25
6 X F18										27										27
1 X F25		3		2		2		9				3		3	2	2			9	
2 X F25				1											1					1
3 X F25							8											8		
4 X F25							7											7		
6 X F25										16										16
1 X F30		3	2	2	14	3		14						3	2	3			14	
2 X F30					9		9	11										9		11
3 X F30							8											8		
4 X F30									7											7
5 X F30										25										25
6 X F30										27										27
1 X F32		3		2		2		9						3	2	2			9	
2 X F32				1											1					1
3 X F32							8											8		
4 X F32							7											7		
6 X F32										16										16
1 X F40				2		2		9							2	2			9	
2 X F40																				
3 X F40							8											8		
1 X F70							10	13										10	13	
2 X F70									9											9
1 X F72		2												2						2
2 X F72						1		9								1			9	
3 X F72								8										8		
4 X F72								7										7		
1 X F48 HO				3	14		14	10							3			14	10	
2 X F48 HO							11											11		
3 X F48 HO									8										8	
4 X F48 HO									7										7	
1 X F60 HO				3	14		14	10							3			14	10	
2 X F60 HO							11											11		
3 X F60 HO									8										8	
4 X F60 HO									7										7	
1 X F72 HO				3	14		14	10							3			14	10	
2 X F72 HO										22										22
3 X F72 HO							11		8									11		8
1 X F40				3	14	3	14	10							3	3	14	10		
2 X F40							11	11									11	11		
3 X F40									8										8	
4 X F40									7										7	
5 X F40										22										22
1 X F48 VHO										12										12
1 X F60 VHO										12										12
1 X F72 VHO										12										12
1 X F96 VHO										12										12

HO

10
1/1/4" dia.

VHO

12
1/1/2" dia.

1 X F14		3	2	2	14	3	14	10				3		3	2	3	14	10		
2 X F14					9		9	11									9		11	
3 X F14										25										25
4 X F14									7										7	
5 X F14										27										27
6 X F14										28										28
1 X F15		3	2	2	14	3		14				3		3	2	3			14	
2 X F15				1	9		9	11							1			9		11
3 X F15					8		8											8		
4 X F15							7											7		
5 X F15										27										27
6 X F15										28										28
1 X F20		3	2	2	14	3	14	14				3		3	2	3	14	14		
2 X F20					9		9	11									9		11	
3 X F20										25										25
4 X F20									7											7
5 X F20										27										27
6 X F20										28										28
1 X F24				3	14	3	14	10								3	14	10		

LINEAR & U-SHAPE LAMP CHART

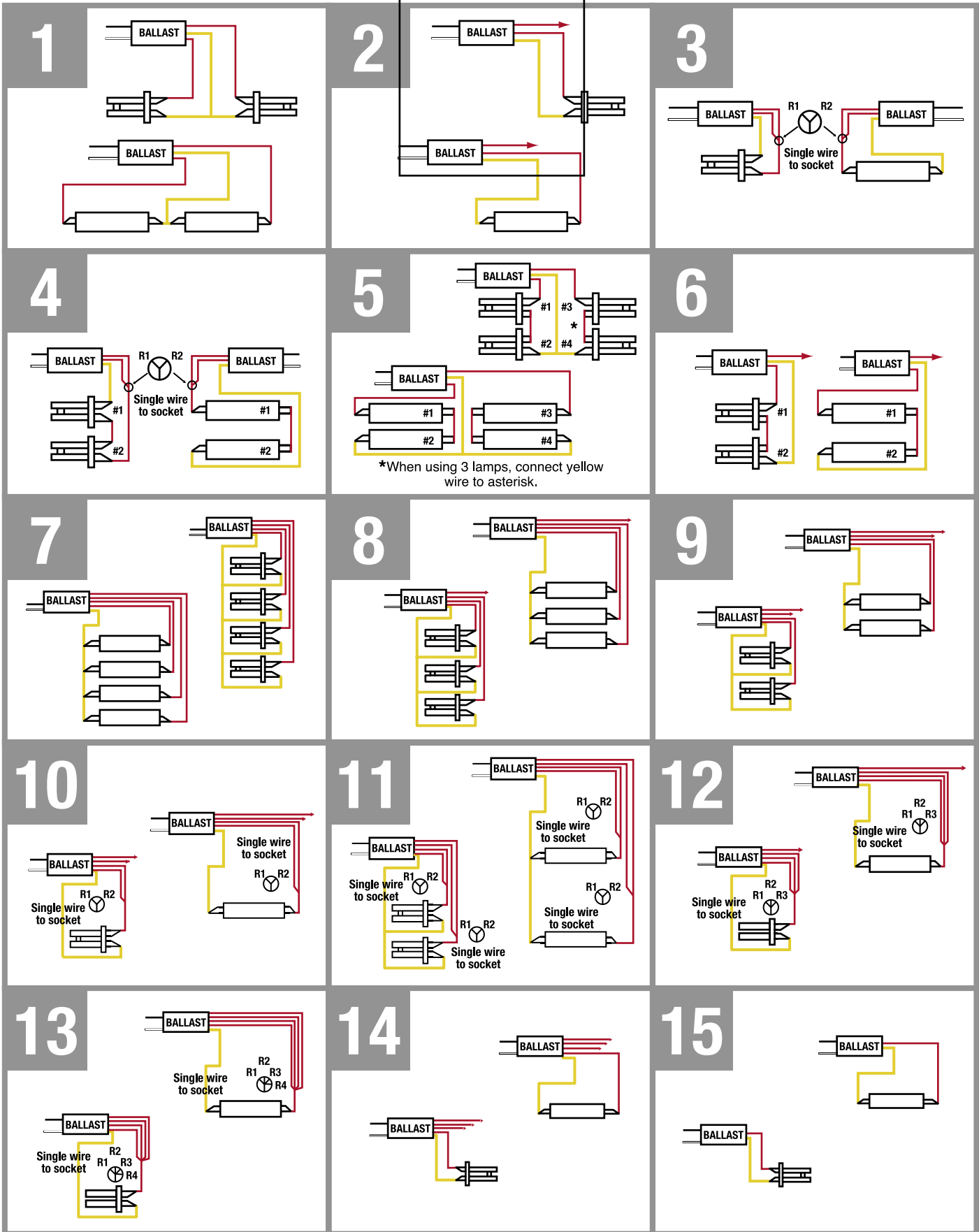
		WORKHORSE								WHAM		LONGHORSE										
		WH 1	WH 2	WH 22	WH 3	WH 33	WH 4	WH 5	WH 6	WH 7	WH 8	WM 1	WM 2	LH 1	LH 2	LH 3	LH 4	LH 5	LH 6	LH 7		
T	2 X F24					11		11	11		22								11	11		
	3 X F24									8	25											
	4 X F24									7	27											
	5 X F24										28											
	1 X F25			3	3	14		14	10								3		14	10		
	2 X F25					11		11			22								14	11		
	3 X F25									8	25											
	4 X F25									7	27											
	1/1/2" dia.	1 X F30			3	3	14	3	14	10								3	3	14	10	
		2 X F30					11		11	11		22								14	11	11
3 X F30										8	25											
4 X F30										7	27											
5 X F30											28											
1 X F36					3	14	3	14	10								3	3	14	10		
2 X F36						11		11	11		22								14	11	11	
3 X F36										8	25											
4 X F36										7	27											
5 X F36											28											
1 X F40				3	14	3	14	10								3	3	14	10			
2 X F40								11	11		22							14	11	11		
3 X F40										8	25											
4 X F40										7	27											
5 X F40											28											
1 X F42				3	14	3	14	10								3	3	14	10			
2 X F42								11	11		22							14	11	11		
3 X F42										8	25											
4 X F42										7	27											
5 X F42											28											
1 X F48				3	14	3	14	10								3	3	14	10			
2 X F48								11	11		22							14	11	11		
3 X F48										8	25											
4 X F48										7	27											
5 X F48											28											
1 X F60				2	14	3	14	10								2	3	14	10			
2 X F60								11	11		22							14	11	11		
3 X F60										8	25											
4 X F60										7	27											
1 X F64				2	14	3	14	10								2	3	14	10			
2 X F64								11	11		22							14	11	11		
3 X F64										8	25											
4 X F64											27											
1 X F72				2	14	3	14	10								2	3	14	10			
2 X F72								11	11		22							14	11	11		
3 X F72										8	25											
4 X F72											27											
1 X F84				2		3	14	10								2	3	14	10			
2 X F84								11	11		22							14	11	11		
3 X F84										8	25											
1 X F96 75W / 60W								14	10		22							14	10			
2 X F96 60W								9	11									9	11			
3 X F96 60W										8												
HO	1 X F18 HO					12		12	13	14								12	13			
	2 X F18 HO									11	23											
	3 X F18 HO										26											
	1 X F24 HO					12		12	13	14								12	13			
	2 X F24 HO									11	23											
	3 X F24 HO										26											
	1 X F30 HO					12		12	13	14								12	13			
	2 X F30 HO									11	23											
	3 X F30 HO										26											
	1 X F36 HO					12		12	13	14								12	13			
2 X F36 HO									11	23												
3 X F36 HO										26												
1 X F42 HO					12		12	13	14								12	13				
2 X F42 HO									11	23												
3 X F42 HO										26												
1 X F48 HO					12		12	13	14								12	13				
2 X F48 HO									11	23												
3 X F48 HO										26												
1 X F60 HO								12	13	14							12	13				
2 X F60 HO									11	23												
3 X F60 HO										26												
1 X F64 HO								12	13	14							12	13				
2 X F64 HO									11	23												
1 X F72 HO								12	13	14							12	13				
2 X F72 HO									11	23												
1 X F84 HO								12	13	14							12	13				
2 X F84 HO									11	23												
1 X F96 HO								12	13	14							12	13				
2 X F96 HO									11	23												
1 X F48 VHO										12	19											
1 X F60 VHO										12	19											
1 X F72 VHO										12	19											
1 X F96 VHO										12	19											

WIRING DIAGRAMS for WORKHORSE, WHAM AND LONGHORSE

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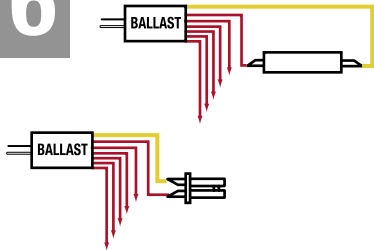
EMAIL: SALES@NATURALLIGHTING.COM
FAX: 281.486.0352



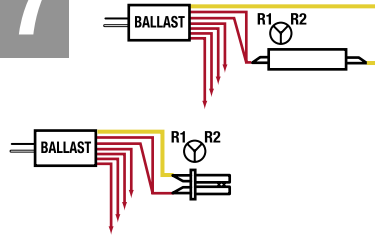
OPERATION & INSTALLATION TIPS

1. Always connect both pin sets of the socket before connecting "RED" and "YELLOW" wires.
2. Ground case in accordance with the "National Electric Code."
3. With Linear lamps, use a starting aid.
4. Ballast case temperature can not exceed 70°C.
5. Remote mounting distance varies with lamp type. Contact customer service.
6. Ballast can not be used with dimmer switch but can be used with Occupancy Sensor. (Note: Sensor will shorten lamp life.)
7. Cap and insulate any unused red power wire.
8. When connecting two red power wires, they must be joined together to make one wire before attaching to the socket.
9. BLS (Back Leads with Studs) Dimensions: Stud Length: 5/8", Stud Size: 8/32, Center to Center: 2"
10. Running lamps in series will reduce the turn-on cycles of both lamps - configuration diagrams 4, 5, 6

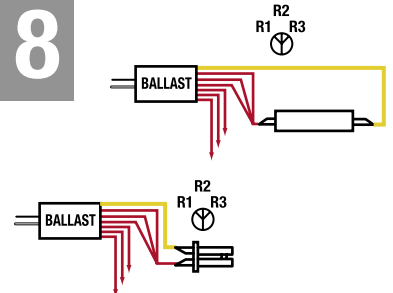
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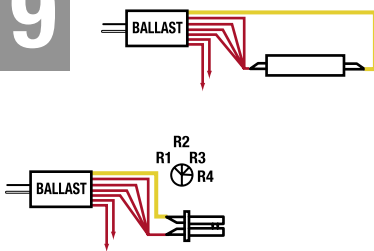
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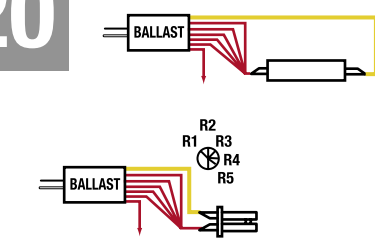
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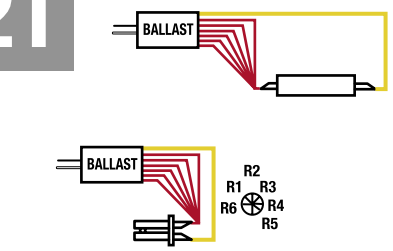
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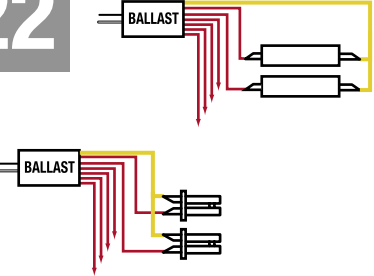
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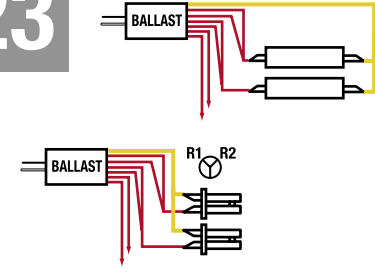
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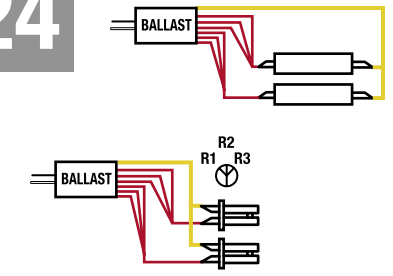
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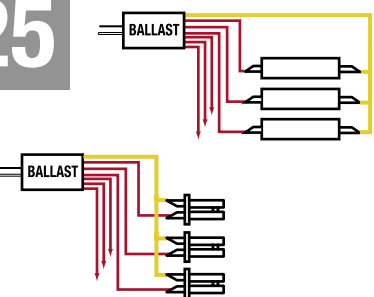
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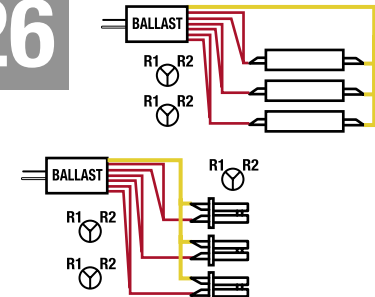
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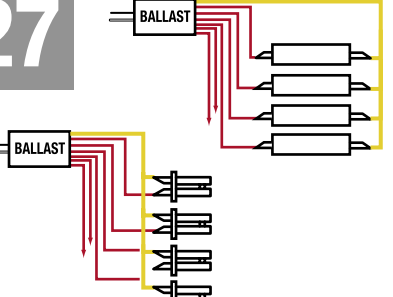
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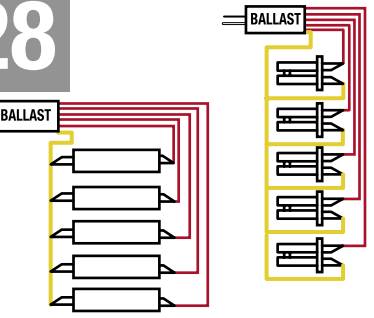
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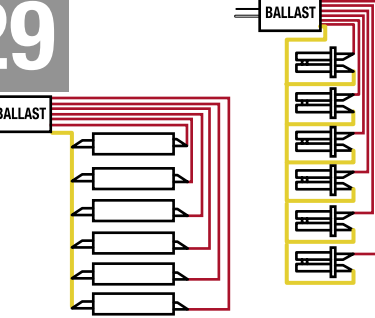
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