

PHILIPS Day-Brite CFI

Recessed

HP90
Fluorescent 2x4

T8, T5, or T5HO



Project: _____
 Location: _____
 Cat.No: _____
 Type: _____
 Lamps: _____ Qty: _____
 Notes: _____

The Philips Day-Brite / Philips CFI HP90 Recessed Fluorescent combines a recessed contoured body with an enclosed linear prismatic translucent lens to create an efficient direct/indirect luminaire suitable for a variety of applications.

Ordering guide

Example: H9S2GLR232UNV-1/2-EB

Family	Air Function	Width	Ceiling Type	Lens Type	Reflector	Lamp Quantity	Lamp Type (by others)	Voltage	Options
<input type="text" value="H9"/>	<input type="text" value="S"/>	<input type="text" value="2"/>	<input type="text"/>	<input type="text" value="L"/>	<input type="text" value="R"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
H9 HP90 Direct/Indirect Recessed	S Static	2 2'	G Fits both standard and slot grid N 9/16" narrow grid	L Acrylic high light transmission linear prismaic lens	R Specular aluminum	1 1 lamp 2 2 lamp	28 28WT5 32 32WT8 54 54WT5HO	UNV 120-277V 120 120V 277 277V 347 347V	1/1 One 1-lamp ballast 1/2 One 2-lamp ballast EB Electronic ballast, <20% THD EB101 T8 electronic ballast, instant start, <10% THD EB10R Elec. ballast, program rapid start, <10% THD EBL T8 elec. ballast, low ballast factor EBLH T8 elec. ballast, high ballast factor EBHE T8 elec. ballast, high efficiency, std. ballast factor EBLHE T8 elec. ballast, high efficiency, low ballast factor EBLHHE T8 elec. ballast, high efficiency, high ballast factor EBD Electronic dimming ballast EBSD T8 elec. ballast, step dimming, std. (.88) ballast factor ESNOLP Elec. ballast for energy saving (25/28/30W) T8 lamps, use when lamps are not specified w/luminaire EB95 28WT5 electronic ballast, .95 ballast factor EB115 28WT5 electronic ballast, 1.15 ballast factor EBSD95 28WT5 electronic step dimming ballast, .95 ballast factor EBSD115 28WT5 electronic step dimming ballast, 1.15 ballast factor EBSD80 54WT5HO electronic step dimming ballast, .80 ballast factor E7LP DEB-7LP emerg. ballast, T8/T5/T5HO, 430-700 lumens E6LP DEB-6LP emerg. ballast, US or Canada market, T8/T5/T5HO, 750-1325 lumens, 120/277V F1 Installed flex, 3/8" diameter, 18 gauge, 3 wire, 6' F2 Installed flex, 3/8" diameter, 18 gauge, 4 wire, 6' GLR# Fusing, fast blow (# = number of ballasts) LPT735 Installed T8 lamps, 70+ CRI, 3500K LPT835 Installed T8/T5/T5HO lamps, 80+ CRI, 3500K LPT835HL Installed T8 or T5 hi lumen lamps, 80+ CRI, 3500K

Accessories (order separately)

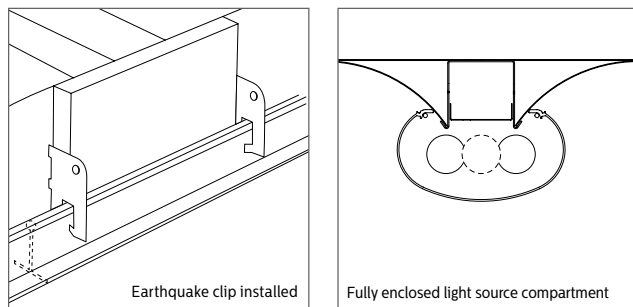
- FMA24 – 2'x4' "F" mounting frame for NEMA "F" mounting
- Electrical wiring options – consult factory

H9S HP90 Fluorescent 2x4

T8, T5, or T5HO

Features

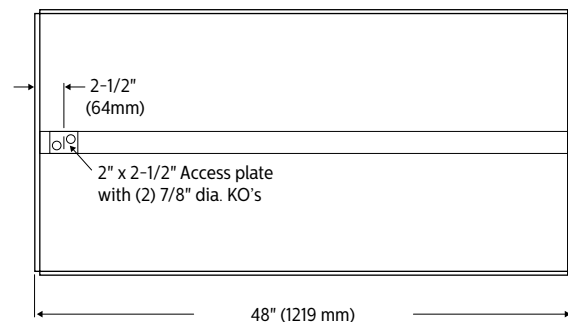
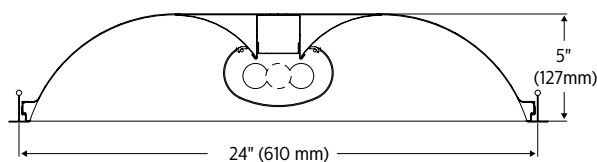
- Direct/indirect appearance with soft contoured interior.
- Translucent DR acrylic high light transmission linear prismatic lens.
- 95% reflective specular aluminum reflector.
- Lens encloses lamp compartment.
- Lamp shield opens from either side.
- Ballast accessible from room side.
- 85.2% efficient (2 lamp, 32WT8), 90.4% efficient (2 lamp, 28WT5), 89.7% efficient (1 lamp, 54WT5HO).
- Tension screws secure ends to body.
- Same fixture fits both standard grid and slot grid ceiling types.
- Fixture fits flush to the face of slot grid ceiling types.
- Order "N" ceiling option for 9/16" narrow grid applications.
- Built-in earthquake clips.
- Can be continuous row mounted.
- Wiring access plate standard.



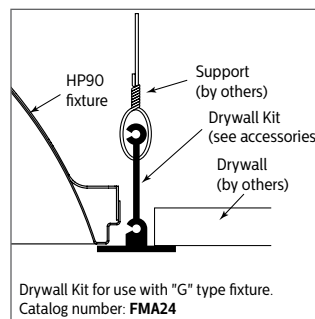
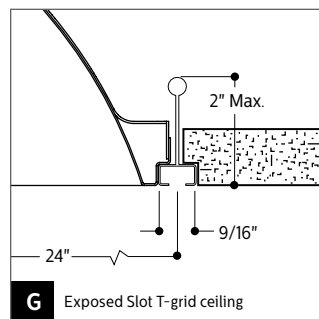
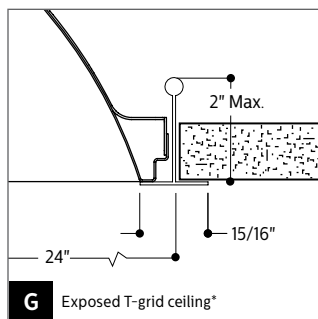
Specifications

- **Performance:** In an installation of 2 lamp 32WT8 luminaires in a room cavity ratio of 1, with reflectance 80% ceiling, 50% wall, 20% floor, the C.U. shall not be less than .88. To reduce glare the average brightness at 65° shall not exceed 3317 candelas per square meter. To control veiling reflections, luminaire output in the 30°-90° zone shall not be less than 76.0%.
In an installation of 2 lamp 28WT5 luminaires in a room cavity ratio of 1, with reflectance 80% ceiling, 50% wall, 20% floor, the C.U. shall not be less than .94. To reduce glare the average brightness at 65° shall not exceed 2574 candelas per square meter. To control veiling reflections, luminaire output in the 30°-90° zone shall not be less than 73.8%.
In an installation of 2 lamp 54WT5HO luminaires in a room cavity ratio of 1, with reflectance 80% ceiling, 50% wall, 20% floor, the C.U. shall not be less than .88. To reduce glare the average brightness at 65° shall not exceed 3776 candelas per square meter. To control veiling reflections, luminaire output in the 30°-90° zone shall not be less than 74.1%.
- **Materials:** Chassis Parts—Die-formed code gauge cold rolled steel.
- **Finish:** Chassis exterior—white baked polyester enamel. Cavity—white baked polyester enamel. Rust preventative undercoating.
- **Lens:** L—Linear prismatic translucent DR acrylic lens.
- **Reflector:** R—Low iridescence specular aluminum with 95% reflectance.
- **Electrical:** Thermally protected class "P" ballast, non PCB. If K.O. is within 3" of ballast, use wire suitable for at least 90°.
- **Labels:** cULus listed. Suitable for damp locations. Models with emergency ballast suitable for dry locations.

Dimensions



Mounting methods



* For flush mounting when using 9/16" exposed t-grid ceiling order "N" ceiling option.

H9S HP90 Fluorescent 2x4

T8, T5, or T5HO

Photometry

Model No. H9S2GLR128UNV-1/1-EB

LER = 75.9 IW = 31.6 BF = 1.0
Comparative yearly lighting energy cost per 1000 lumens = \$3.16

Report Number: G2006156
Catalog Number: H9S2GLR128UNV-1/1-EB
Lamps: (1) F28T5

Luminaire: HP90 2' x 4' with linear prismatic lens.

Ballast: QTP 2X28 T5/UNV-PSN
Report is based on 2750 lumens per lamp.
Efficiency: 87.2%

CIE Type: Direct

Plane: 0-Deg. 90-Deg.
Spacing Criteria: 1.3 1.2
Shielding Angles: 90 90
Plane: 0-Deg. 90-Deg.
Luminous Length: 47.760 23.760

Candela Distribution

Vertical Angle	Horizontal Angle			Zonal Lumens
	0	45	90	
0	877	877	877	
5	868	876	884	84
15	843	860	868	242
25	792	794	785	364
35	713	672	658	424
45	592	528	536	418
55	420	386	424	359
65	239	266	352	280
75	102	183	254	188
85	20	31	28	38
90	0	0	0	

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixt.
0-30	690	25.1	28.8
0-40	1115	40.5	46.5
0-60	1892	68.8	78.9
0-90	2398	87.2	100.0

Coefficients of Utilization

Ceiling	80%			50%			30%			
	70	50	30	50	30	10	50	30	10	
RC	Zonal Cavity Method									
RW	Effective Floor Reflectance = 20%									
Room Cavity Ratio	1	95	91	87	85	82	80	82	79	77
	2	86	79	73	74	70	66	71	68	64
	3	79	70	62	66	60	55	63	58	54
	4	72	62	54	58	52	47	56	51	47
	5	66	55	47	52	46	41	51	45	41
	6	61	50	42	47	41	36	46	40	36
	7	57	45	38	43	37	32	42	36	32
	8	53	41	34	40	33	29	39	33	28
	9	50	38	31	36	30	26	36	30	26
	10	47	35	28	34	28	24	33	27	23

Average Luminance data in candela / sq. meter

Angle	0°	45°	90°
45	1143.	1020.	1035.
55	1000.	919.	1009.
65	772.	859.	1137.
75	538.	965.	1340.
85	313.	486.	439.

Photometry

Model No. H9S2GLR228UNV-1/2-EB

LER = 84.7 IW = 54.6 BF = 0.93
Comparative yearly lighting energy cost per 1000 lumens = \$2.83

Report Number: G2006010
Catalog Number: H9S2GLR228UNV-1/2-EB
Lamps: (2) F28T5

Luminaire: HP90 2' x 4' with linear prismatic lens.

Ballast: WA
Report is based on 2750 lumens per lamp.
Efficiency: 90.4%

CIE Type: Direct

Plane: 0-Deg. 90-Deg.
Spacing Criteria: 1.3 1.4
Shielding Angles: 90 90
Plane: 0-Deg. 90-Deg.
Luminous Length: 47.760 23.760

Candela Distribution

Vertical Angle	Horizontal Angle			Zonal Lumens
	0	45	90	
0	1632	1632	1632	
5	1621	1634	1645	156
15	1561	1598	1621	451
25	1448	1511	1568	697
35	1278	1386	1442	857
45	1048	1169	1202	886
55	778	891	941	789
65	506	642	749	635
75	250	427	478	412
85	51	72	60	88
90	0	0	0	

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixt.
0-30	1305	23.7	26.2
0-40	2162	39.3	43.5
0-60	3837	69.8	77.2
0-90	4972	90.4	100.0

Coefficients of Utilization

Ceiling	80%			50%			30%			
	70	50	30	50	30	10	50	30	10	
RC	Zonal Cavity Method									
RW	Effective Floor Reflectance = 20%									
Room Cavity Ratio	1	98	94	90	88	85	82	84	82	79
	2	89	81	75	76	71	67	73	69	66
	3	81	71	63	67	61	56	64	59	55
	4	74	63	55	59	53	47	57	51	47
	5	68	56	48	53	46	41	51	45	40
	6	63	50	42	48	41	36	46	40	35
	7	58	46	38	43	37	32	42	36	31
	8	54	42	34	40	33	28	39	32	28
	9	50	38	31	37	30	25	36	30	25
	10	47	35	28	34	27	23	33	27	23

Average Luminance data in candela / sq. meter

Angle	0°	45°	90°
45	2152.	2401.	2468.
55	1970.	2256.	2382.
65	1739.	2206.	2574.
75	1403.	2396.	2682.
85	850.	1200.	1000.



Some luminaires use fluorescent or high intensity discharge (HID) lamps that contain small amounts of mercury. Such lamps are labeled, "Contain Mercury" and/or the symbol "HG". Lamps that contain mercury must be disposed of in accordance with local requirements. Information regarding lamp recycling and disposal can be found at www.lamprecycle.org

H9S HP90 Fluorescent 2x4

T8, T5, or T5HO

Model No. H9S2GLR132UNV-1/1-EB

LER = 74.5 IW = 31.2 BF = 0.88
Comparative yearly lighting energy cost per 1000 lumens = \$3.22

Report Number: G2010221

Catalog Number: H9S2GLR132UNV-1/1-EB

Lamps: (1) F32T8

Luminaire: HP90 2' x 4' with linear prismatic lens.

Ballast: QTP1X32T8

Report is based on 3100 lumens per lamp.

Efficiency: 85.2%

CIE Type: Direct

Plane: 0-Deg. 90-Deg.

Spacing Criteria: 1.3 1.4

Shielding Angles: 90 90

Plane: 0-Deg. 90-Deg.

Luminous Length: 47.760 23.760

Photometry

Model No. H9S2GLR232UNV-1/2-EB

LER = 77.9 IW = 59.7 BF = 0.88
Comparative yearly lighting energy cost per 1000 lumens = \$3.08

Report Number: G2010039

Catalog Number: H9S2GLR232UNV-1/2-EB

Lamps: (2) F32T8

Luminaire: HP90 2' x 4' with linear prismatic lens.

Ballast: ICN-2P32-SC

Report is based on 3100 lumens per lamp.

Efficiency: 85.2%

CIE Type: Direct

Plane: 0-Deg. 90-Deg.

Spacing Criteria: 1.3 1.4

Shielding Angles: 90 90

Plane: 0-Deg. 90-Deg.

Luminous Length: 47.760 23.760

Candela Distribution

Vertical Angle	Horizontal Angle			Zonal Lumens
	0	45	90	
0	770	770	770	
5	765	768	771	73
15	736	753	769	213
25	680	720	755	332
35	601	665	723	416
45	499	590	669	454
55	381	497	596	442
65	257	392	514	387
75	136	280	328	266
85	38	47	35	60
90	0	0	0	

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixt.
0-30	619	20.0	23.4
0-40	1034	33.6	39.2
0-60	1930	62.2	73.0
0-90	2642	85.2	100.0

Coefficients of Utilization

Ceiling	80%			50%			30%		
	70	50	30	50	30	10	50	30	10
RC	Zonal Cavity Method								
RW	Effective Floor Reflectance = 20%								
1	92	87	83	82	79	76	78	76	74
2	83	75	69	70	65	61	68	63	60
3	75	65	58	61	55	50	59	54	49
4	68	57	49	54	47	42	52	46	42
5	63	51	43	48	41	36	46	40	36
6	58	46	38	43	36	31	42	36	31
7	53	41	33	39	32	28	38	32	27
8	49	37	30	36	29	24	35	29	24
9	46	34	27	33	26	22	32	26	22
10	43	32	25	30	24	20	29	24	20

Average Luminance data in

candela / sq. meter

Angle	0°	45°	90°
45	1017.	1202.	1363.
55	957.	1248.	1497.
65	876.	1336.	1752.
75	757.	1559.	1826.
85	628.	777.	579.

Candela Distribution

Vertical Angle	Horizontal Angle			Zonal Lumens
	0	45	90	
0	1595	1595	1595	
5	1584	1588	1594	151
15	1525	1550	1576	439
25	1409	1473	1538	681
35	1204	1356	1465	849
45	1028	1198	1343	920
55	783	1000	1172	885
65	523	772	973	754
75	267	523	604	497
85	59	90	62	107
90	0	0	0	

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixt.
0-30	1271	20.5	24.0
0-40	2120	34.2	40.1
0-60	3925	63.3	74.3
0-90	5284	85.2	100.0

Coefficients of Utilization

Ceiling	80%			50%			30%		
	70	50	30	50	30	10	50	30	10
RC	Zonal Cavity Method								
RW	Effective Floor Reflectance = 20%								
1	92	88	84	82	79	76	79	76	74
2	83	76	69	71	66	62	68	64	60
3	75	66	58	62	56	51	59	54	50
4	69	58	50	54	48	43	52	47	42
5	63	51	43	49	42	37	47	41	36
6	58	46	38	44	37	32	42	36	32
7	54	42	34	40	33	28	38	32	28
8	50	38	30	36	30	25	35	29	25
9	46	35	27	33	27	22	32	26	22
10	44	32	25	31	24	20	30	24	20

Average Luminance data in

candela / sq. meter

Angle	0°	45°	90°
45	2095.	2441.	2736.
55	1967.	2512.	2944.
65	1783.	2632.	3317.
75	1486.	2911.	3362.
85	975.	1488.	1025.

H9S HP90 Fluorescent 2x4

T8, T5, or T5HO

Model No. H9S2GLR154UNV-1/1-EB

LER = 66.5 IW = 61.9 BF = 1.02
Comparative yearly lighting energy cost per 1000 lumens = \$3.61

Report Number: G2010216

Catalog Number: H9S2GLR154UNV-1/1-EB

Lamps: (1) 54W T5HO

Luminaire: HP90 2' x 4' with linear prismatic lens.

Ballast: ICN-2S54

Report is based on 4500 lumens per lamp.

Efficiency: 89.7%

CIE Type: Direct

Plane: 0-Deg. 90-Deg.

Spacing Criteria: 1.2 1.4

Shielding Angles: 90 90

Plane: 0-Deg. 90-Deg.

Luminous Length: 47.760 23.760

Candela Distribution

Vertical Angle	Horizontal Angle			Zonal Lumens
	0	45	90	
0	1234	1235	1235	
5	1226	1231	1237	117
15	1179	1208	1233	342
25	1088	1151	1202	530
35	957	1051	1121	655
45	791	913	998	698
55	601	750	852	661
65	402	576	713	564
75	207	402	474	384
85	49	68	44	85
90	0	0	0	

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixt.
0-30	989	22.0	24.5
0-40	1644	36.5	40.7
0-60	3002	66.7	74.4
0-90	4036	89.7	100.0

Coefficients of Utilization

Ceiling	80%			50%			30%			
	70	50	30	50	30	10	50	30	10	
RC	Zonal Cavity Method									
RW	Effective Floor Reflectance = 20%									
Room Cavity Ratio	1	92	92	88	86	83	80	83	80	78
	2	87	80	73	75	69	65	72	67	64
	3	79	69	62	65	59	54	63	57	53
	4	72	61	53	57	51	45	55	49	45
	5	66	54	46	51	44	39	49	43	38
	6	61	49	40	46	39	34	45	38	34
	7	57	44	36	42	35	30	41	34	30
	8	53	40	33	38	31	27	37	31	26
	9	49	37	29	35	28	24	34	28	24
	10	46	34	27	32	26	22	32	26	21

Average Luminance data in

candela / sq. meter

Angle	0°	45°	90°
45	1612.	1860.	2034.
55	1510.	1884.	2140.
65	1371.	1964.	2431.
75	1152.	2238.	2639.
85	810.	1124.	727.

Photometry

Model No. H9S2GLR254UNV-1/2-EB

LER = 67.7 IW = 112.4 BF = 1.0
Comparative yearly lighting energy cost per 1000 lumens = \$3.55

Report Number: G2006118

Catalog Number: H9S2GLR254UNV-1/2-EB

Lamps: (2) 54W T5HO

Luminaire: HP90 2' x 4' with linear prismatic lens.

Ballast: B254UNV-E

Report is based on 4500 lumens per lamp.

Efficiency: 84.6%

CIE Type: Direct

Plane: 0-Deg. 90-Deg.

Spacing Criteria: 1.3 1.4

Shielding Angles: 90 90

Plane: 0-Deg. 90-Deg.

Luminous Length: 47.760 23.760

Candela Distribution

Vertical Angle	Horizontal Angle			Zonal Lumens
	0	45	90	
0	2340	2340	2340	
5	2320	2339	2354	223
15	2228	2326	2406	658
25	2079	2280	2417	1044
35	1851	2134	2220	1303
45	1548	1790	1827	1348
55	1173	1345	1428	1197
65	771	963	1099	950
75	383	625	665	597
85	75	95	60	125
90	0	0	0	

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixt.
0-30	1926	21.9	25.9
0-40	3229	36.7	43.4
0-60	5774	65.6	77.5
0-90	7446	84.6	100.0

Coefficients of Utilization

Ceiling	80%			50%			30%			
	70	50	30	50	30	10	50	30	10	
RC	Zonal Cavity Method									
RW	Effective Floor Reflectance = 20%									
Room Cavity Ratio	1	92	88	84	82	79	77	79	77	74
	2	83	76	70	71	67	63	69	65	61
	3	76	67	59	63	57	52	60	56	51
	4	69	59	51	56	49	44	54	48	44
	5	64	52	45	50	43	38	48	42	38
	6	59	47	39	45	38	33	43	37	33
	7	54	43	35	41	34	29	39	34	29
	8	50	39	32	37	31	26	36	30	26
	9	47	36	29	34	28	24	33	27	23
	10	44	33	26	31	25	21	31	25	21

Average Luminance data in

candela / sq. meter

Angle	0°	45°	90°
45	3179.	3676.	3752.
55	2970.	3405.	3615.
65	2649.	3309.	3776.
75	2149.	3507.	3731.
85	1250.	1583.	1000.

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HP90_2x4_T8_T5_T5HO 12/14 page 5 of 5



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