PHILIPS

Day-Brite

CFI

Recessed

HP90 Air Fluorescent 2x2

T8, T5, T5HO, or TT5

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: H9A2GLR217UNV-1/2-EB

Family	Air Function	Width	Ceiling Type	Lens Type	Reflector	Lamp Quantity	Lamp Type (by others)	Voltage	Options
H9	A	2	G	L	R			–	
H9 HP90 Direct/ Indirect Recessed	**A** Air supply or return	**2** 2'	**G** 15/16" standard grid or 9/16" narrow grid	**L** Acrylic high light transmission linear prismaic lens	**R** Specular aluminum	**1** 1 lamp **2**[1] 2 lamp	**FT**[1] 40WTT5 **14** 14WT5 **17** 17WT8 **24** 24WT5HO	**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 **EB10I** T8 or CF40 electronic ballast, instant start, <10% THD **EB10R** Elec. ballast, program rapid start, <10% THD **EBL** T8 elec. ballast, low ballast factor **EBH** T8 elec. ballast, high ballast factor **EBHE** T8 elec. ballast, high efficiency, std. ballast factor **EBLHE** T8 elec. ballast, high efficiency, low ballast factor **EBHHE** 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 **EB115** 14WT5 electronic ballast, 1.15 ballast factor **EBSD95** 14WT5 electronic step dimming ballast, .95 ballast factor **EBSD115** 14WT5 electronic step dimming ballast, 1.15 ballast factor **E7LP**[2] DEB-7LP emerg. ballast, T8/T5/T5HO/CF40, 430-700 lumens **E6LP**[2] DEB-6LP emerg. ballast, US or Canada market, T8/T5/T5HO/CF40, 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/CF40 lamps, 80+ CRI, 3500K **LPT835HL** Installed T8 hi lumen lamps, 80+ CRI, 3500K

Footnotes

1 TT5 available in 1 lamp only.
2 Emergency pack compartment on side of luminaire will cover air slots.

Accessories (order separately)

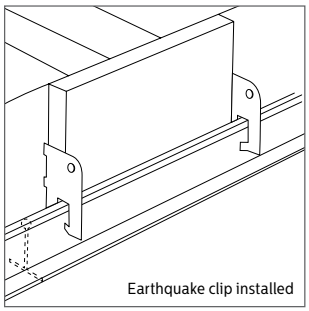
- **FMA22 –** 2'x2' "F" mount frame for NEMA "F" mounting
- **Electrical wiring options –** consult factory

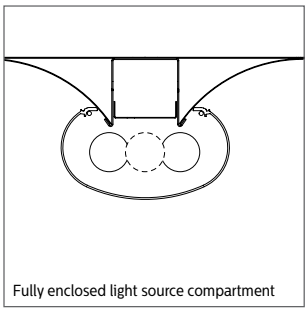
H9A HP90 Air Fluorescent 2x2

T8, T5, T5HO, or TT5

Features

- Direct/indirect appearance with soft contoured interior.
- Translucent DR acrylic high light transmission linear prismatic lens.
- 95% reflective specular aluminum reflector.
- Air supply or return.
- Lens encloses lamp compartment.
- Lamp shield opens from either side.
- Ballast accessible from room side (if emergency pack or second ballast are used, access is gained through the adjacent ceiling tile).
- 80.3% efficient (2 lamp, 17WT8), 83.2% efficient (2 lamp, 14WT5), 72.9% efficient (1 lamp, 40WTT5), 80.3% efficient (1 lamp, 24WT5HO).
- Tension screws secure ends to body.
- Fixture fits flush to the face of standard and narrow grid ceiling types.
- Built-in earthquake clips.
- Can be continuous row mounted.
- Wiring access plate standard.

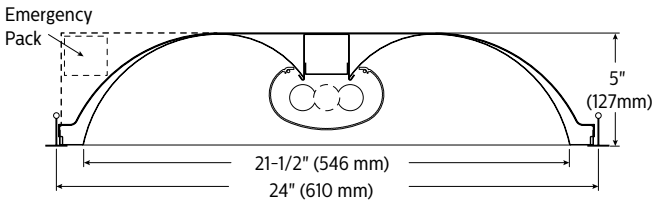

Earthquake clip installed

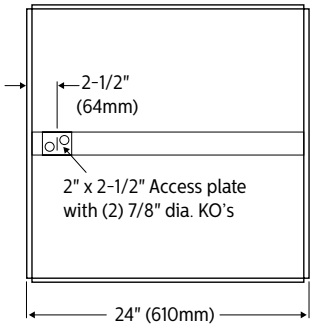

Fully enclosed light source compartment

Specifications

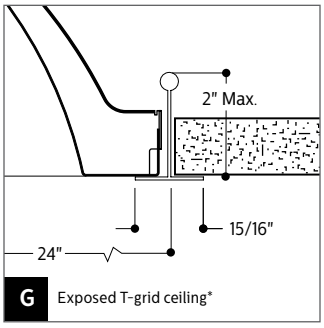
- **Performance:** In an installation of 2 lamp 17WT8 luminaires in a room cavity ratio of 1, with reflectance 80% ceiling, 50% wall, 20% floor, the C.U. shall not be less than .83. To reduce glare the average brightness at 65° shall not exceed 2849 candelas per square meter. To control veiling reflections, luminaire output in the 30°-90° zone shall not be less than 75.3%.
  In an installation of 2 lamp 14WT5 luminaires in a room cavity ratio of 1, with reflectance 80% ceiling, 50% wall, 20% floor, the C.U. shall not be less than .86. To reduce glare the average brightness at 65° shall not exceed 2540 candelas per square meter. To control veiling reflections, luminaire output in the 30°-90° zone shall not be less than 75.3%.
  In an installation of 1 lamp 40WTT5 luminaires in a room cavity ratio of 1, with reflectance 80% ceiling, 50% wall, 20% floor, the C.U. shall not be less than .76. To reduce glare the average brightness at 65° shall not exceed 2065 candelas per square meter. To control veiling reflections, luminaire output in the 30°-90° zone shall not be less than 70.5%.
- **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.

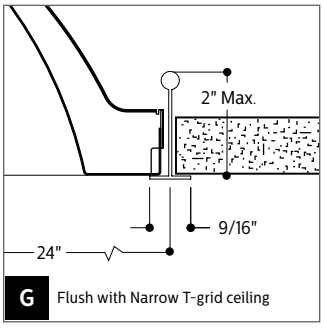
Dimensions

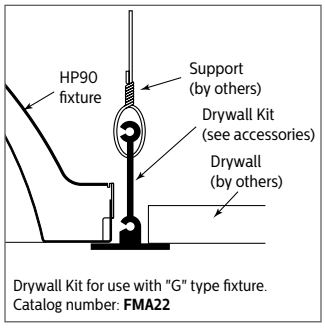




Mounting methods







HP90 Air Fluorescent Recessed 2x2

T8, T5, T5HO, or TT5

Photometry

Model No. H9A2GLR214UNV-1/2-EB

LER = 68.1 IW = 31.1 BF = 1.06
Comparative yearly lighting energy cost per 1000 lumens = $3.53

Report Number: G2010021
Catalog Number: H9A2GLR214UNV-1/2-EB
Lamps: (2) F14T5
Luminaire: HP90 Air 2' x 2' with linear prismatic lens.
Ballast: ICN-2S28
Report is based on 1200 lumens per lamp.
Efficiency: 83.2%
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:	22.800	22.800

Candela Distribution

Vertical Angle	Horizontal Angle 0	45	90	Zonal Lumens
0	622	622	622	
5	620	620	623	59
15	595	605	614	171
25	548	572	593	264
35	481	521	559	326
45	397	456	507	351
55	299	375	440	333
65	198	184	364	280
75	100	180	226	178
85	21	27	20	35
90	0	0	0	

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixt.
0- 30	494	20.6	24.7
0- 40	820	34.2	41.1
0- 60	1504	62.7	75.3
0- 90	1997	83.2	100.0

Coefficients of Utilization

Ceiling	80%			50%			30%		
Wall	70	50	30	50	30	10	50	30	10
RC / RW	Zonal Cavity Method Effective Floor Reflectance = 20%								
1	90	86	82	80	78	75	77	75	73
2	81	74	68	70	65	61	67	63	59
3	74	65	57	61	55	50	58	54	50
4	67	57	49	54	47	43	52	46	42
5	62	51	43	48	41	36	46	41	36
6	57	45	38	43	37	32	42	36	31
7	53	41	34	39	33	28	38	32	28
8	49	37	30	36	29	25	35	29	25
9	46	34	27	33	27	22	32	26	22
10	43	32	25	30	24	20	29	24	20

Room Cavity Ratio

Average Luminance data in candela / sq. meter

Angle	0°	45°	90°
45	1656.	1902.	2115.
55	1538.	1928.	2263.
65	1382.	1982.	2540.
75	1140.	2051.	2575.
85	711.	917.	677.

Model No. H9A2GLR224UNV-1/2-EB

LER = 57.2 IW = 49.4 BF = 1.0
Comparative yearly lighting energy cost per 1000 lumens = $4.19

Report Number: G2007082
Catalog Number: H9A2GLR224UNV-1/2-EB
Lamps: (2) F24T5HO
Luminaire: HP90 Air 2' x 2' with linear prismatic lens.
Ballast: QTP2X39-24T5HO/UNV
Report is based on 1760 lumens per lamp.
Efficiency: 80.3%
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:	22.800	22.800

Candela Distribution

Vertical Angle	Horizontal Angle 0	45	90	Zonal Lumens
0	894	894	894	
5	889	890	893	85
15	852	867	880	245
25	781	818	848	377
35	687	744	800	465
45	547	651	732	499
55	397	538	642	473
65	246	406	527	393
75	114	253	326	246
85	26	37	29	47
90	0	0	0	

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixt.
0- 30	706	20.1	25.0
0- 40	1171	33.3	41.4
0- 60	2143	60.9	75.8
0- 90	2828	80.3	100.0

Coefficients of Utilization

Ceiling	80%			50%			30%		
Wall	70	50	30	50	30	10	50	30	10
RC / RW	Zonal Cavity Method Effective Floor Reflectance = 20%								
1	87	83	79	78	75	73	75	72	70
2	79	72	66	67	63	59	65	61	58
3	71	63	56	59	53	49	57	52	48
4	65	55	48	52	46	41	50	45	41
5	60	49	42	46	40	35	45	39	35
6	55	44	37	42	36	31	40	35	31
7	51	40	33	38	32	27	37	31	27
8	47	36	29	35	29	24	34	28	24
9	44	33	26	32	26	22	31	25	22
10	41	31	24	29	24	20	29	23	20

Room Cavity Ratio

Average Luminance data in candela / sq. meter

Angle	0°	45°	90°
45	2081.	2477.	2785.
55	1862.	2523.	3011.
65	1566.	2584.	3354.
75	1185.	2630.	3388.
85	802.	1142.	895.

Hg

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

H9A HP90 Air Fluorescent 2x2

T8, T5, T5HO, or TT5

Model No. H9A2GLR117UNV-1/1-EB

LER = 60.9 IW = 16.7 BF = 0.88
Comparative yearly lighting energy cost per 1000 lumens = $3.94

Report Number: G2010176

Catalog Number: H9A2GLR117UNV-1/1-EB

Lamps: (1) F17T8

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

Ballast: QTP1X32T8UNV ISN-SC

Report is based on 1400 lumens per lamp.

Efficiency: 82.4%

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:	22.800	22.800

Candela Distribution

Vertical Angle	Horizontal Angle 0	45	90	Zonal Lumens
0	335	335	335	
5	334	335	336	32
15	321	328	334	93
25	297	313	327	144
35	262	289	313	181
45	218	276	291	197
55	167	215	260	192
65	114	169	225	168
75	64	117	152	117
85	22	25	21	30
90	0	0	0	

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixt.
0- 30	269	19.2	23.3
0- 40	450	32.1	39.0
0- 60	839	59.9	72.7
0- 90	1155	82.5	100.0

Coefficients of Utilization

Ceiling	80%			50%			30%		
Wall	70	50	30	50	30	10	50	30	10
RC / RW	Zonal Cavity Method Effective Floor Reflectance = 20%								
1	89	84	80	79	76	73	76	73	71
2	80	72	66	68	63	59	65	61	58
3	72	63	56	59	53	49	57	52	48
4	66	55	48	52	46	41	50	45	40
5	60	49	41	46	40	35	45	39	34
6	56	44	36	42	35	30	40	34	30
7	51	40	32	38	31	27	37	31	26
8	48	36	29	34	28	24	33	28	23
9	45	33	26	32	25	21	31	25	21
10	42	30	24	29	23	19	28	23	19

Room Cavity Ratio

Average Luminance data in candela / sq. meter

Angle	0°	45°	90°
45	900.	1057.	1201.
55	850.	1094.	1323.
65	787.	1167.	1554.
75	722.	1319.	1714.
85	737.	837.	703.

Model No. H9A2GLR217UNV-1/2-EB

LER = 64.7 IW = 30.6 BF = 0.88
Comparative yearly lighting energy cost per 1000 lumens = $3.71

Report Number: G2010106

Catalog Number: H9A2GLR217UNV-1/2-EB

Lamps: (2) F17T8

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

Ballast: ICN-2P32-SC

Report is based on 1400 lumens per lamp.

Efficiency: 80.3%

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:	22.800	22.800

Candela Distribution

Vertical Angle	Horizontal Angle 0	45	90	Zonal Lumens
0	700	700	700	
5	697	698	701	67
15	669	681	691	192
25	617	643	668	297
35	540	587	629	367
45	446	512	568	394
55	337	420	492	374
65	224	318	404	314
75	115	204	249	202
85	26	35	26	43
90	0	0	0	

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixt.
0- 30	556	19.9	24.7
0- 40	923	33.0	41.0
0- 60	1691	60.4	75.2
0- 90	2249	80.3	100.0

Coefficients of Utilization

Ceiling	80%			50%			30%		
Wall	70	50	30	50	30	10	50	30	10
RC / RW	Zonal Cavity Method Effective Floor Reflectance = 20%								
1	87	83	79	78	75	72	74	72	70
2	79	72	66	67	63	59	64	61	57
3	71	62	55	59	53	49	56	52	48
4	65	55	48	52	46	41	50	45	40
5	60	49	41	46	40	35	45	39	35
6	55	44	36	42	35	31	40	35	30
7	51	40	32	38	31	27	37	31	27
8	47	36	29	34	28	24	33	28	24
9	44	33	26	32	26	22	31	25	21
10	41	30	24	29	23	19	28	23	19

Room Cavity Ratio

Average Luminance data in candela / sq. meter

Angle	0°	45°	90°
45	1880.	2158.	2394.
55	1751.	2183.	2557.
65	1580.	2243.	2849.
75	1324.	2349.	2868.
85	889.	1197.	889.

H9A HP90 Air Fluorescent 2x2

T8, T5, T5HO, or TT5

Model No. H9A2GLR1FTUNV-1/1-EB

LER = 61.2 IW = 37.6 BF = 1.0
Comparative yearly lighting energy cost per 1000 lumens = $3.92

Report Number: G20A6149

Catalog Number: H9A2GLR1FTUNV-1/1-EB

Lamps: (1) F40BX/SPX30/IS

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

Ballast: C240PUNVHP-B/UNV

Report is based on 3150 lumens per lamp.

Efficiency: 72.9%

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:	22.800	22.800

Candela Distribution

Vertical Angle	Horizontal Angle 0	45	90	Zonal Lumens
0	876	876	876	
5	868	872	876	83
15	836	841	845	238
25	776	776	772	357
35	685	665	646	416
45	560	518	528	410
55	400	373	413	348
65	230	248	318	260
75	97	149	195	155
85	19	24	19	31
90	0	0	0	

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixt.
0- 30	678	21.5	29.5
0- 40	1093	34.7	47.6
0- 60	1851	58.8	80.6
0- 90	2296	72.9	100.0

Coefficients of Utilization

Ceiling	80%			50%			30%		
Wall	70	50	30	50	30	10	50	30	10
RC / RW	Zonal Cavity Method Effective Floor Reflectance = 20%								
1	80	76	73	71	69	67	69	67	65
2	73	67	62	63	59	56	60	57	54
3	66	59	53	55	51	47	53	49	46
4	61	52	46	49	44	40	48	43	40
5	56	47	40	44	39	35	43	38	40
6	52	42	36	40	35	31	39	34	30
7	48	38	32	37	31	27	36	31	27
8	45	35	29	34	28	24	33	28	24
9	42	32	26	31	26	22	30	25	22
10	39	30	24	29	24	20	28	23	20

Room Cavity Ratio

Average Luminance data in candela / sq. meter

Angle	0°	45°	90°
45	2174.	2011.	2049.
55	1914.	1789.	1976.
65	1494.	1611.	2065.
75	1029.	1580.	2068.
85	598.	765.	598.

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