

PHILIPS

Day-Brite

CFI

Recessed

HP90 air 2x4

T8, T5, or T5HO



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

The Philips Day-Brite / Philips CFI HP90 recessed 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: H9A2GLR232UNV-1/2-EB

Family	Air Function	Width	Ceiling Type	Diffuser	Reflector	No. of Lamps	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 2 lamp	28 28WT5 32 32WT8 54 54WT5HO	UNV Universal voltage, 120-277V 120 120V 277 277V 347 347V	1/1 One 1-lamp ballast 1/2 One 2-lamp ballast EB Electronic ballast, <10% THD std. ballast factor EB10R T8 electronic ballast, <10% THD, program rapid start EBHE T8 electronic ballast, high efficiency std. ballast factor EBLHE T8 electronic ballast, high efficiency low ballast factor EBHHE T8 electronic ballast, high efficiency high ballast factor EBSO T8 electronic step dimming ballast, .88 ballast factor EBD7 Advance Mark 7 dimming ballast, 0-10V (low voltage) control EBDX Advance Mark 10 dimming ballast, phase control EBD Electronic dimming ballast, customer specified E1 B100 emerg. ballast, T8, 350-450 lumens, 120/277V E1CAN B100-CAN emerg. ballast, Canada market, T8, 350-450 lumens, 120/347V E7 B60 emerg. ballast, T8, 600-700 lumens, 120/277V E5 B50 emerg. ballast, U.S. or Canada market, T8, 1100-1400 lumens, UNV ESCAN B50-CAN emerg. ballast, Canada market, T8, 1100-1400 lumens, 120/347V E5ST B50ST emerg. ballast w/self test, U.S. or Canada market, T8, 1100-1400 lumens, UNV E7LP LP550 emerg. ballast, T5/T5HO, 430-700 lumens, 120/277V E6LP LP600 emerg. ballast U.S. or Canada market, T5/T5HO, 750-1325 lumens, 120/277V F1 3/8" flex, 3 wire 18 gauge 6' F2 3/8" flex, 4 wire 18 gauge 6' F2/5W 3/8" flex, 5 wire 18 gauge 6' GLR Fusing, fast blow LPT830 Installed T8/T5/T5HO lamps, 80+ CRI, 3000K LPT835 Installed T8/T5/T5HO lamps, 80+ CRI, 3500K LPT841 Installed T8/T5/T5HO lamps, 80+ CRI, 4100K LPT830HL Installed T8/T5 hi lumen lamps, 80+ CRI, 3000K LPT835HL Installed T8/T5 hi lumen lamps, 80+ CRI, 3500K LPT841HL Installed T8/T5 hi lumen lamps, 80+ CRI, 4100K

Accessories (order separately)

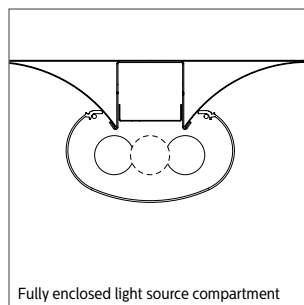
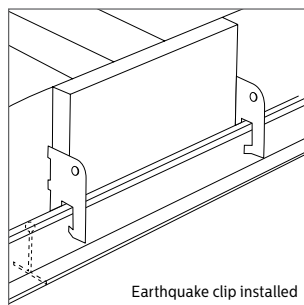
- FMA24 – 2'x4' "F" mounting frame for NEMA "F" mounting

H9A HP90 air recessed 2x4

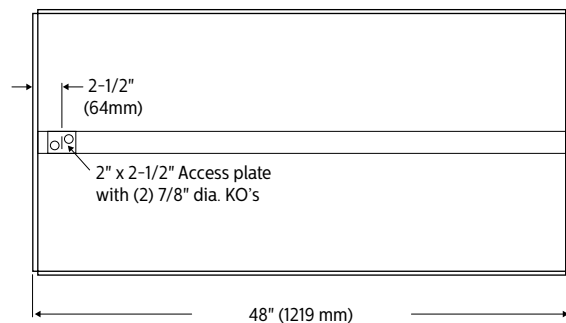
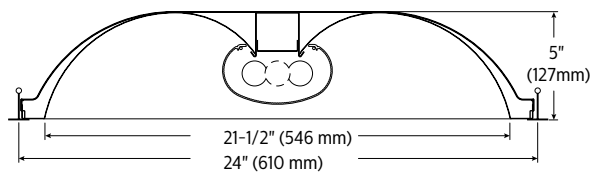
T8, T5, or T5HO

Features

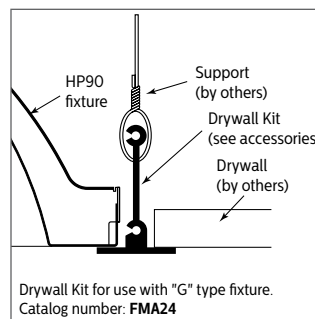
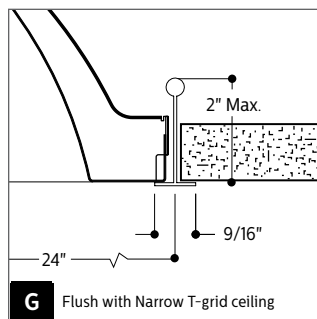
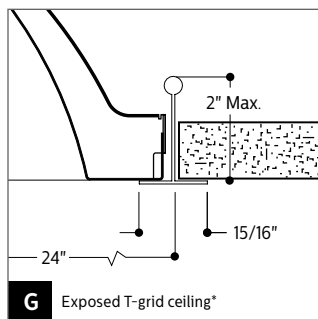
- Direct/indirect appearance with soft contoured interior.
- Translucent DR acrylic high light transmission linear prismatic lens.
- 95% reflective specular aluminum reflector.
- Air supply or return.
- Lens encloses lamp compartment.
- Lamp shield opens from either side.
- Ballast accessible from room 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.
- 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.



Dimensions



Mounting methods



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.

H9A HP90 air recessed 2x4

T8, T5, or T5HO

Photometry

Model No. H9A2GLR128UNV-1/1-EB

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

Report Number: G20A6156

Catalog Number: H9A2GLR128UNV-1/1-EB

Lamps: (1) F28T5

Luminaire: HP90 Air 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 Wall RC RW	80%			50%			30%		
	70	50	30	50	30	10	50	30	10
Zonal Cavity Method Effective Floor Reflectance = 20%									
Room Cavity Ratio	1	95	91	87	85	82	80	82	79
	2	86	79	73	74	70	66	71	68
	3	79	70	62	66	60	55	63	58
	4	72	62	54	58	52	47	56	51
	5	66	55	47	52	46	41	51	45
	6	61	50	42	47	41	36	46	40
	7	57	45	38	43	37	32	42	36
	8	53	41	34	40	33	29	39	33
	9	50	38	31	36	30	26	36	30
	10	47	35	28	34	28	24	33	27

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. H9A2GLR228UNV-1/2-EB

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

Report Number: G20A6110

Catalog Number: H9A2GLR228UNV-1/2-EB

Lamps: (2) F28T5

Luminaire: HP90 Air 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

Coefficients of Utilization

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

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

H9A HP90 air recessed 2x4

T8, T5, or T5HO

Model No. H9A2GLR132UNV-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: H9A2GLR132UNV-1/1-EB

Lamps: (1) F32T8

Luminaire: HP90 Air 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

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

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.

Photometry

Model No. H9A2GLR232UNV-1/2-EB

LER = 77.9 IW = 59.7 BF = 0.88
Comparative yearly lighting energy cost per 1000 lumens = \$3.18

Report Number: G20A0039

Catalog Number: H9A2GLR232UNV-1/2-EB

Lamps: (2) F32T8

Luminaire: HP90 Air 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 1.5

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

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.

H9A HP90 air recessed 2x4

T8, T5, or T5HO

Model No. H9A2GLR154UNV-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: H9A2GLR154UNV-1/1-EB

Lamps: (1) 54W T5HO

Luminaire: HP90 Air 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	1237	
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
	2	87	80	73	75	69	65	72	67
	3	79	69	62	65	59	54	63	57
	4	72	61	53	57	51	45	55	49
	5	66	54	46	51	44	39	49	43
	6	61	49	40	46	39	34	45	38
	7	57	44	36	42	35	30	41	34
	8	53	40	33	38	31	27	37	31
	9	49	37	29	35	28	24	34	28
	10	46	34	27	32	26	22	32	26

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. H9A2GLR254UNV-1/2-EB

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

Report Number: G20A6118

Catalog Number: H9A2GLR254UNV-1/2-EB

Lamps: (2) 54W T5HO

Luminaire: HP90 Air 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 1.5

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
	2	83	76	70	71	67	63	69	65
	3	76	67	59	63	57	52	60	56
	4	69	59	51	56	49	44	54	48
	5	64	52	45	50	43	38	48	42
	6	59	47	39	45	38	33	43	37
	7	54	43	35	41	34	29	39	34
	8	50	39	32	37	31	26	36	30
	9	47	36	29	34	28	24	33	27
	10	44	33	26	31	25	21	31	25

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.

