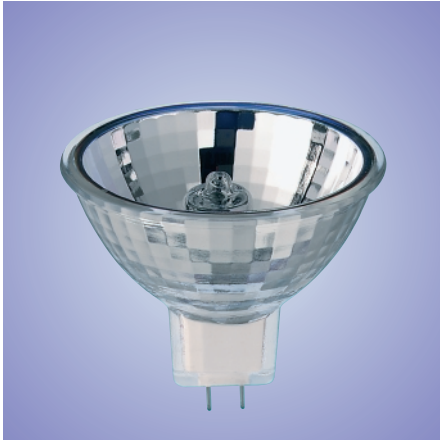




GX5.3 specular 50 mm



GX5.3 faceted 50 mm



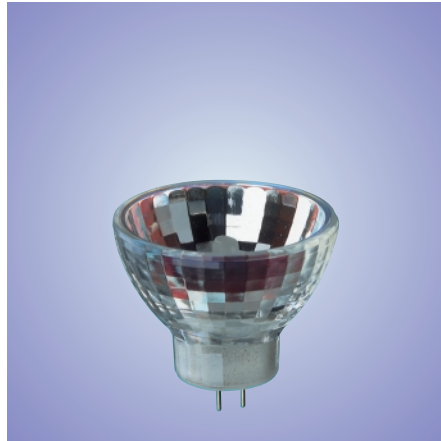
GY5.3 faceted 50 mm



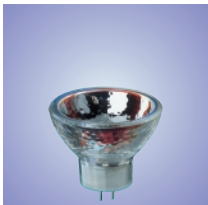
GZ6.35 specular 50 mm



GZ4 specular 35 mm



GZ4 faceted 35 mm



GZ4 stippled 35 mm



GX5.3 faceted 42 mm



GX7.9 smooth 57 mm



GX7.9 smooth 44.5 mm

**Features**

Quartz halogen lamps for optical applications with an integral reflector which serves as an efficient mirror condenser system. Their glass reflectors have a dichroic coating which reflects the light forward. But radiates about 75% of the generated heat backwards, keeping temperatures within safe limits. The halogen burner is precisely aligned using an optical system so that no re-alignment is necessary when relamping. They offer negligible light output depreciation and high efficacy.

Low voltage halogen lamps should not be dimmed by more than 10% of their rated voltage since this will result in a reduction in life.

Standard tungsten filament lamps (with no halogen filling), can be dimmed to zero volts, resulting in virtually endless life. However if low voltage tungsten halogen lamps are dimmed by more than 10%, the lamp will be operating at a too low temperature and the free halogens in the gas fill, will attack the cooler parts of the tungsten filament i.e. where enters the quartz or glass envelope. The wire at that point will then be eroded and eventually will fail.

So if dimmed by 10% or more, low voltage tungsten halogen lamps will not have an extended life but are unlikely even to reach their rated life.

**Applications**

- 8/16 mm film projection.
- Slide projection.
- Enlargers.
- Minilabs / Colour printers.
- Overhead projection.
- Medical equipment.
- Solar simulation.
- Measuring equipment.
- Fiber optical applications.



FH

Type	ANSI Code	LIF Code	J Code	Fig.	Burning position	Lamp life h	Maximum permissible pinch temp. degr.C	Maximum permissible bulb temp. degr.C	Ordering number
-	EKZ	-	-	1	S90	200	400	900	9247 938 16600
-	EPN	-	-	1	S90	50	400	900	9248 036 17100
-	EPT	-	-	1	S90	8000	350	900	9248 037 16600
-	EFN	-	-	1	S90	50	400	900	9248 001 17100
13139	-	-	-	1	S105	25	400	900	9238 968 17100
6853	EFN	A1/230	-	1	S105	50	400	900	9239 166 17100
-	DDM	-	-	1	S90	50	350	900	9240 412 19500
-	EKE/ENA	-	-	1	S90	25	350	900	9248 022 22100
-	EJY	-	-	1	S90	25	400	900	9248 016 19500
-	ESJ	-	JER 82-85	1	S90	40	400	900	9248 046 28800
6834	EFP	-	-	1	S90	50	400	900	9248 002 17100
13117	-	-	-	1	UNIVERSAL	1000	350	900	9239 158 19100
6423	EFR	A1/232	-	1	S105	50	400	900	9239 168 18500
-	-	-	JCR 20-150 H5	1	S90	500	350	900	9248 123 19700
14527	EJA	-	-	1	S90	40	400	900	9239 411 19800
13629	EKE	-	-	1	S90	200	400	900	9240 103 19800
5995	EJM	-	-	1	S90	40	400	900	9239 210 19800
-	EJV	-	-	1	S90	40	400	900	9247 937 19800
14529	DNF	-	-	2	P4	25	400	900	9240 413 19800
-	ELZ	-	-	2	P4	60	400	900	9247 940 19800
-	DNE	-	-	2	P4	12	400	900	9247 927 36300
-	ESD	-	-	1	S90	12	400	900	9248 044 36300
13164	EJL	A1/252	-	1	S90	50	400	900	9239 211 20500
13630	EWV	-	-	1	S90	50	400	900	9248 052 20577
-	EMM	-	-	2	P4	50	400	900	9248 033 20500
-	-	-	JER 24-250	1	S90	50	400	900	9248 139 20577
13163	ELC	A1/259	-	1	S105	35	400	900	9239 197 20500
-	ELC	A1/259	-	1	S90	50	400	900	9248 025 20577
13631	ELC/FA	A1/259	ELC 24-250/FA	1	S90	50	400	900	9240 105 20500
-	ELC/5H	-	JCR 24-250 5H	1	S90	500	350	900	9248 627 20500
13830	EVV	-	-	1	S90	50	400	900	9240 060 28800
13632	EXY	-	-	1	S90	250	350	900	9240 106 28800
-	ETJ	-	-	1	S90	175	400	900	9247 949 36300
13095	ENH	-	-	1	S90	175	400	900	9239 215 36300
-	ENH-5	-	-	1	S90	175	400	900	9247 942 35500
13633	EXW	-	-	1	S90	15	400	900	9240 107 28800
13634	FHS	-	-	1	S90	70	400	900	9240 108 28800
14502	EXR	-	-	1	S90	35	400	900	9240 109 28800
-	EXR-5	-	-	1	S90	35	400	900	9247 950 35500
-	FHS-5	-	-	1	S90	70	400	900	9247 959 35500
-	-	-	JCR 100-300 X1	1	S90	50	400	900	9248 119 30900
-	-	-	JCR 100-300	1	S90	50	400	900	9248 117 30900
13096	ELH	-	-	1	S90	35	400	900	9239 209 36300
-	ENG	-	-	1	S90	15	400	900	9247 941 36300
-	ELH-5	-	-	1	S90	35	400	900	9239 209 35500
13098	ERV	-	-	1	S90	75	400	900	9248 040 23300
13824	ENX	-	-	1	S90	75	400	900	9240 058 28800
-	ENX-5	-	-	1	S90	75	400	900	9247 943 35500
14526	FXL	-	-	1	S90	50	400	900	9240 410 28800

Type	ANSI Code	LIF Code	J Code	Cap/ Base	Lamp voltage	Lamp wattage	Colour temperature	Reflector diameter in mm	Reflector surface
					V	W	K		
-	EKZ	-	-	GX5.3	10.8	30	3100	50	Smooth
-	EPN	-	-	GX5.3	12	35	3300	50	Smooth
-	EPT	-	-	GX5.3	10.8	42	2900	50	Faceted
-	EFN	-	-	GZ6.35	12	75	3400	50	Smooth
13139	-	-	-	GZ6.35	12	75	3400	50	Smooth
6853	EFN	A1/230	-	GZ6.35	12	75	3400	50	Smooth
-	DDM	-	-	GX5.3	19	80	3350	50	Faceted
-	EKE/ENA	-	-	GX5.3	30	80	3400	50	Faceted
-	EJY	-	-	GX5.3	19	80	3400	50	Smooth
-	ESJ	-	JER 82-85	GX5.3	82	85	-	50	Smooth
6834	EFP	-	-	GZ6.35	12	100	3400	50	Smooth
13117	-	-	-	GX5.3	17	150	3200	50	Smooth
6423	EFR	A1/232	-	GZ6.35	15	150	3350	50	Smooth
-	-	-	JCR 20-150 H5	GX5.3	20	150	3150	50	Smooth
14527	EJA	-	-	GX5.3	21	150	3400	50	Smooth
13629	EKE	-	-	GX5.3	21	150	3400	50	Smooth
5995	EJM	-	-	GX5.3	21	150	3400	50	Smooth
-	EJV	-	-	GX5.3	21	150	3400	50	Smooth
14529	DNF	-	-	GX7.9	21	150	3400	57	Smooth
-	ELZ	-	-	GX7.9	21	150	3350	57	Smooth
-	DNE	-	-	GX7.9	120	150	3350	57	Smooth
-	ESD	-	-	GY5.3	120	150	-	50	Stippled
13164	EJL	A1/252	-	GX5.3	24	200	3400	50	Smooth
13630	EVWF	-	-	GX5.3	24	200	3350	50	Faceted
-	EMM	-	-	GX7.9	24	250	3400	44.5	Smooth
-	-	-	JER 24-250	GX5.3	24	250	-	50	Smooth
13163	ELC	A1/259	-	GX5.3	24	250	3400	50	Smooth
-	ELC	A1/259	-	GX5.3	24	250	3400	50	Smooth
13631	ELC/FA	A1/259	ELC 24-250/FA	GX5.3	24	250	3400	50	Faceted
-	ELC/5H	-	JCR 24-250 5H	GX5.3	24	250	3400	50	Smooth
13830	EVW	-	-	GY5.3	82	250	3300	50	Faceted
13632	EXY	-	-	GX5.3	82	250	3200	50	Faceted
-	ETJ	-	-	GY5.3	120	250	3200	50	Smooth
13095	ENH	-	-	GY5.3	120	250	3250	50	Faceted
-	ENH-5	-	-	GY5.3	125	250	3250	50	Faceted
13633	EXW	-	-	GX5.3	82	300	3400	42	Faceted
13634	FHS	-	-	GX5.3	82	300	3300	42	Faceted
14502	EXR	-	-	GX5.3	82	300	3350	42	Faceted
-	EXR-5	-	-	GX5.3	86	300	3350	42	Faceted
-	FHS-5	-	-	GX5.3	86	300	3300	42	Faceted
-	-	-	JCR 100-300 X1	GY5.3	100	300	3200	50	Faceted
-	-	-	JCR 100-300	GY5.3	100	300	3300	50	Smooth
13096	ELH	-	-	GY5.3	120	300	3350	50	Faceted
-	ENG	-	-	GY5.3	120	300	3450	50	Stippled
-	ELH-5	-	-	GY5.3	125	300	3350	50	Faceted
13098	ERV	-	-	GX5.3	36	340	3300	50	Faceted
13824	ENX	-	-	GY5.3	82	360	3300	50	Faceted
-	ENX-5	-	-	GY5.3	86	360	3300	50	Faceted
14526	FXL	-	-	GY5.3	82	410	3300	50	Faceted

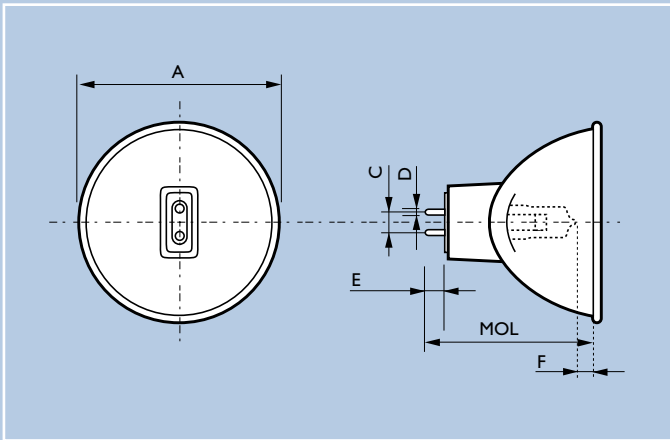


Fig. 1

Dimensions in mm

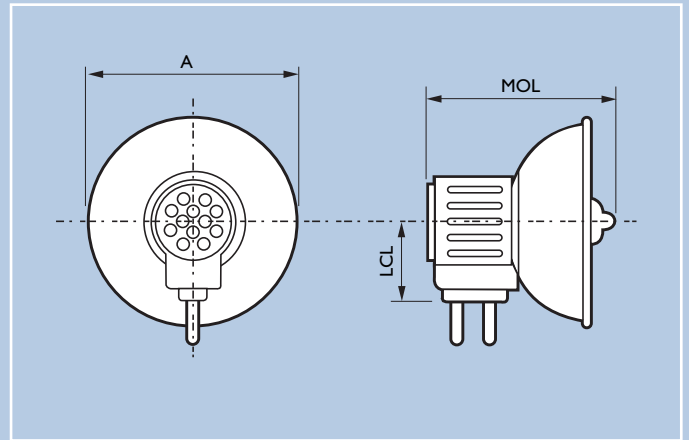
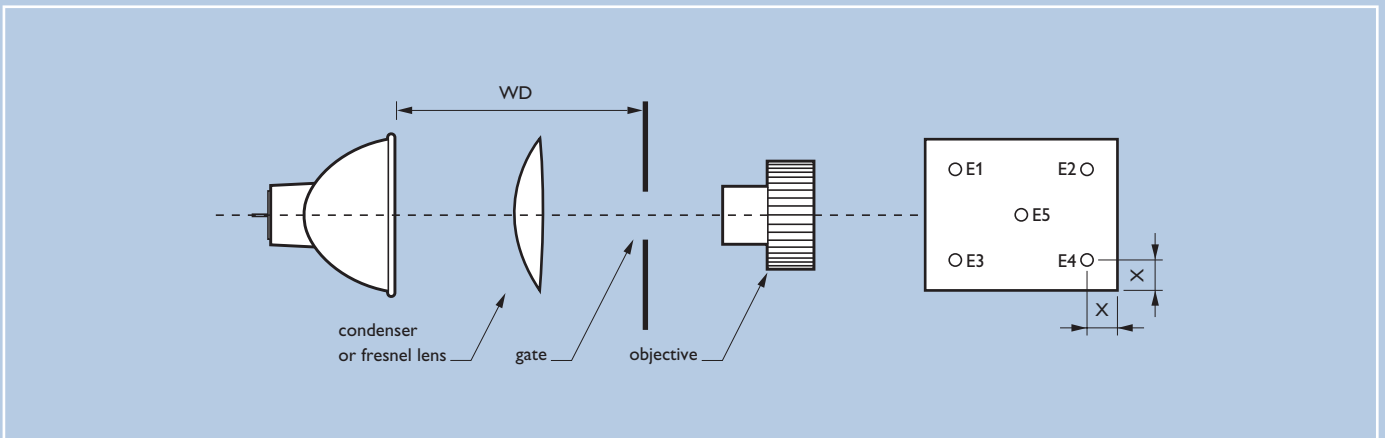


Fig. 2



Optical system

Type	ANSI Code	LIF Code	J Code	Fig.	MOL	A	LCL max.	C pins centre to centre	D pin diameter	E min. pin length	F max. protruding
-	EKZ	-	-	1	44.5	50.7	-	5.3	1.5	4.9 min	< 0
-	EPN	-	-	1	44.5	50.7	-	5.3	1.5	4.9 min	< 0
-	EPT	-	-	1	44.5	50.7	-	5.3	1.5	4.9 min	< 0
-	EFN	-	-	1	44.5	50.7	-	5.3	1.5	4.9 min	< 0
13139	-	-	-	1	44	50	-	6.35	1 ± 0.05	6	< 0
6853	EFN	A1/230	-	1	42	50	-	6.35	1 ± 0.05	6	< 0
-	DDM	-	-	1	44.5	50.7	-	5.3	1.5	4.9 min	< 0
-	EKE/ENA	-	-	1	44.5	50.7	-	5.3	1.5	4.9 min	< 0
-	EJY	-	-	1	44.5	50.7	-	5.3	1.5	4.9 min	< 0
-	ESJ	-	JER 82-85	1	44.5	50.7	-	5.3	0.7 × 2.0	-	< 0
6834	EFP	-	-	1	42	50.7	-	6.35	1 ± 0.05	6	< 0
13117	-	-	-	1	47	50	-	5.3	1.5	4.9 min	< 0
6423	EFR	A1/232	-	1	42	50	-	6.35	1 ± 0.05	6	< 0
14527	EJA	-	-	1	44.5	50.7	-	5.3	1.5	4.9 min	< 0
13629	EKE	-	-	1	44.5	50.7	-	5.3	1.5	4.9 min	< 0
5995	EJM	-	-	1	44.5	50.7	-	5.3	1.5	4.9 min	< 0
-	EJV	-	-	1	44.5	50.7	-	5.3	1.5	4.9 min	< 0
14529	DNF	-	-	2	45.1	57.2	15.9	-	-	-	-
-	ELZ	-	-	2	45.1	57.2	15.9	-	-	-	-
-	DNE	-	-	2	49.2	57.2	15.9	-	-	-	-
-	ESD	-	-	1	44.5	50.7	-	5.3	0.7 × 2.0	-	< 0
13164	EJL	A1/252	-	1	44.5	50.7	-	5.3	1.5	4.9 min	< 0
13630	EWJ	-	-	1	44.5	50.7	-	5.3	1.5	4.9 min	< 0
-	EMM	-	-	2	47.5	44.5	15.9	-	-	-	-
-	-	-	JER 24-250	1	44.5	50.7	-	5.3	1.5	4.9 min	< 0
13163	ELC	A1/259	-	1	45	50	-	5.3	1.5	4.9 min	< 0
-	ELC	A1/259	-	1	44.5	50.7	-	5.3	1.5	4.9 min	< 0
13631	ELC/FA	A1/259	ELC 24-250/FA	1	44.5	50.7	-	5.3	1.5	4.9 min	< 0
-	ELC/5H	-	JCR 24-250 5H	1	44.5	50.7	-	5.3	1.5	4.9 min	< 0
13830	EVW	-	-	1	44.5	50.7	-	5.3	0.7 × 2.0	-	< 0
13632	EXY	-	-	1	44.5	42	-	5.3	1.5	4.9 min	< 0
-	ETJ	-	-	1	44.5	50.7	-	5.3	0.7 × 2.0	-	< 0
13095	ENH	-	-	1	44.5	50.7	-	5.3	0.7 × 2.0	-	< 0
-	ENH-5	-	-	1	44.5	50.7	-	5.3	0.7 × 2.0	-	< 0
13633	EXW	-	-	1	44.5	42	-	5.3	1.5	4.9 min	< 0
13634	FHS	-	-	1	44.5	42	-	5.3	1.5	4.9 min	< 0
14502	EXR	-	-	1	44.5	42	-	5.3	1.5	4.9 min	< 0
-	EXR-5	-	-	1	44.5	42	-	5.3	1.5	4.9 min	< 0
-	FHS-5	-	-	1	44.5	42	-	5.3	1.5	4.9 min	< 0
-	-	-	JCR 100-300 X1	1	44.5	50.7	-	5.3	0.7 × 2.0	-	< 0
-	-	-	JCR 100-300	1	44.5	50.7	-	5.3	0.7 × 2.0	-	< 0
13096	ELH	-	-	1	44.5	50.7	-	5.3	0.7 × 2.0	-	< 0
-	ENG	-	-	1	44.5	50.7	-	5.3	0.7 × 2.0	-	< 0
-	ELH-5	-	-	1	44.5	50.7	-	5.3	0.7 × 2.0	-	< 0
13098	ERV	-	-	1	44.5	50.7	-	5.3	0.7 × 2.0	-	< 0
13824	ENX	-	-	1	44.5	50.7	-	5.3	0.7 × 2.0	-	< 0
-	ENX-5	-	-	1	44.5	50.7	-	5.3	0.7 × 2.0	-	< 0
14526	FXL	-	-	1	44.5	50.7	-	5.3	0.7 × 2.0	-	< 0

Type	ANSI Code	LIF Code	J Code	Candle power max. cd	Beam spread degrees full beam	WD in mm	Dimensions gate	Condensor	Objective f mm	Objective	Screen size mm	X mm	Min centre intensity lux	Corner centre ratio %
-	EKZ	-	-	-	-	38.1	5.36 x 4.01	yes	19	1.3	500 x 375	50 x 50	400	-
-	EPN	-	-	-	-	29	5.36 x 4.01	yes	19	1.3	500 x 375	50 x 50	350	40
-	EPT	-	-	-	-	29	5.36 x 4.01	yes	19	1.3	500 x 375	50 x 50	250	20
-	EFN	-	-	-	-	32	5.36 x 4.01	yes	19	1.3	500 x 375	50 x 50	950	50
13139	-	-	-	-	-	-	in adapted colour enlarger	-	-	-	-	4500	-	-
6853	EFN	A1/230	-	-	-	32	5.2 x 3.9	-	11	1.1	1200 x 900	40 x 40	250 slm	60
-	DDM	-	-	-	-	154.2	40.9 ø	yes	100	2.9	1113 x 835	58 x 59	680	15
-	EKE/ENA	-	-	-	-	44.5	5.41 x 4.04	yes	19	1.3	500 x 375	50 x 50	750	40
-	EJY	-	-	-	-	38.1	5.36 x 4.01	yes	19	1.3	500 x 375	50 x 50	900	40
-	ESJ	-	JER 82-85	-	-	32	12 ø	yes	50	1.4	1000 x 750	52 x 52	300	35
6834	EFP	-	-	-	-	32	5.2 x 3.9	-	11	1.1	1200 x 900	40 x 40	300	62
13117	-	-	-	23000	24	-	-	-	-	-	-	-	-	-
6423	EFR	A1/232	-	-	-	32	5.2 x 3.9	-	11	1.1	1200 x 900	40 x 40	300	62
14527	EJA	-	-	-	-	28	5.36 x 4.01	yes	19	1.3	500 x 375	50 x 50	1200	50
13629	EKE	-	-	-	-	44.5	5.36 x 4.01	yes	19	1.3	500 x 375	50 x 50	900	45
5995	EJM	-	-	-	-	38.1	5.36 x 4.01	yes	19	1.3	500 x 375	50 x 50	1200	50
-	EJV	-	-	-	-	44.5	5.36 x 4.01	yes	19	1.3	500 x 375	50 x 50	1500	40
14529	DNF	-	-	-	-	69.1	6.6 ø	no	25	1.0	500 x 375	50 x 50	2100	50
-	ELZ	-	-	-	-	69.1	6.6 ø	no	25	1.0	500 x 375	50 x 50	1600	50
-	DNE	-	-	-	-	69.1	5.36 x 4.01	no	15-25	1.3	500 x 375	50 x 50	900	40
-	ESD	-	-	-	-	44.5	12 ø	yes	50	1.4	1000 x 750	52 x 52	350	20
13164	EJL	A1/252	-	-	-	31.7	12 ø	yes	50	1.4	1000 x 750	52 x 52	1100	50
13630	EWV	-	-	-	-	298.5	no gate	fresnel	in 3M	OHP	1500 x 1500	250 x 250	800	32
-	EMM	-	-	-	-	65.8	12 ø	no	50	1.2	1113 x 835	58 x 58	750	55
-	-	-	JER 24-250	-	-	31.8	12 ø	yes	50	1.4	1000 x 750	50 x 50	900	60
13163	ELC	A1/259	-	-	-	32	7.05 x 9.65	no	35	1.3	900 x 1200	40 x 40	850 slm	60
-	ELC	A1/259	-	-	-	31.7	12 ø	yes	50	1.2	1000 x 750	52 x 52	1500	50
13631	ELC/FA	A1/259	ELC 24-250/FA	-	-	31.7	12 ø	yes	50	1.2	1000 x 750	52 x 52	1500	50
-	ELC/SH	-	JCR 24-250 SH	-	-	31.8	12 ø	yes	50	1.2	1000 x 750	52 x 52	960	50
13830	EVV	-	-	-	-	298.5	no gate	fresnel	in Sankosya	OHP	1500 x 1500	250 x 250	1250	40
13632	EXY	-	-	-	-	152.4	no gate	yes	100	2.9	1113 x 835	58 x 58	610	46
-	ETJ	-	-	-	-	36.5	12 ø	yes	50	1.2	1000 x 750	52 x 52	800	25
13095	ENH	-	-	-	-	152.4	no gate	yes	100	2.9	1113 x 835	58 x 58	800	40
-	ENH-5	-	-	-	-	152.4	no gate	yes	100	2.9	1113 x 835	58 x 58	700	40
13633	EXW	-	-	-	-	152.4	no gate	yes	100	2.9	1113 x 835	58 x 58	1200	46
13634	FHS	-	-	-	-	152.4	no gate	yes	100	2.9	1113 x 835	58 x 58	1000	46
14502	EXR	-	-	-	-	152.4	no gate	yes	100	2.9	1113 x 835	58 x 58	1100	46
-	EXR-5	-	-	-	-	152.4	no gate	yes	100	2.9	1113 x 835	58 x 58	1100	46
-	FHS-5	-	-	-	-	152.4	40.9 ø	yes	100	2.9	1113 x 835	58 x 58	1000	46
-	-	-	JCR 100-300 X1	-	-	298.5	no gate	fresnel	in Sankosya	OHP	1500 x 1500	250 x 250	1380	40
-	-	-	JCR 100-300	-	-	31.7	no gate	yes	50	1.2	1000 x 750	52 x 52	1200	55
13096	ELH	-	-	-	-	152.4	no gate	yes	85	2.8	1000 x 1000	125 x 125	850	45
-	ENG	-	-	-	-	152.4	no gate	yes	100	2.9	1113 x 835	58 x 58	1350	35
-	ELH-5	-	-	-	-	152.4	no gate	yes	85	2.8	1000 x 1000	125 x 125	1350	40
13098	ERV	-	-	-	-	298.5	no gate	fresnel	in 3M	OHP	1500 x 1500	250 x 250	1050	27
13824	ENX	-	-	-	-	298.5	no gate	fresnel	in ELMO	OHP	1250 x 1250	210 x 210	4300	25
-	ENX-5	-	-	-	-	298.5	no gate	fresnel	in ELMO	OHP	1250 x 1250	210 x 210	4300	25
14526	FXL	-	-	-	-	298.5	no gate	fresnel	in ELMO	OHP	1250 x 1250	210 x 210	4700	34