

## 编译者说明

由于电子工业和电影、电视事业的飞速发展，近年来，我国在光学镜头设计及加工方面取得了很大进展，成系列的各类镜头已被设计和试制出来，有些并已进入成批生产阶段。但在品种、数量和质量方面，跟世界先进水平相比，差距还是比较大。

近年来，我们收集了美、英、德、日等国从 1811 年到现在的光学镜头资料共 3000 多种。现挑选其中的一部分经补充整理之后，将其出版，以供我国从事光学镜头设计的人员参考。

我们准备分成“大相对孔径物镜”，“中等视场中等孔径物镜”，“广角物镜”，“制版及投影物镜”，“显微物镜”，“变焦距物镜”，“目镜”，“非球面系统”和其它等九类进行整理，预计分成十册，陆续出版。

原资料中，大多没有给出象差曲线图，我们均重新计算给予补上。但本册中有少部分镜头（03-02-092~03-02-100）因我单位计算机无法计算，故未能给出象差曲线。此外，由于原资料的光阑位置大多没有给出，我们计算时只能根据我们主观给定的光阑位置进行计算，因此相应的象差曲线图仅供参考。

本册的内容为广角物镜。

由于我们水平有限，时间仓促，力量不足，所以只能一部分一部分地整理出版，而且在整理过程中一定会存在不少缺点和错误，分类也可能不完全合理，望读者批评指正。

参加本册编译工作的有林茂智、杨颀田、叶恩霖、刘淑栓等四位同志。

编译者

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## 符号说明

1. 凡数据后有符号“\*”，表示光栏位置或其值间有光栏。有符号“\*\*”，表示参考数据。

2. 凡没有注明数值单位的，均以毫米为单位；若注明以英寸为单位，则在该镜头资料中均以英寸为单位。

3. 常用符号：

$\Sigma S_1$	球差系数和；
$\Sigma S_2$	彗差系数和；
$\Sigma S_3$	象散系数和；
$\Sigma S_4$	场曲系数和；
$\Sigma S_5$	畸变系数和；
$LA'$	球差；
$\Delta H'$	绝对畸变；
$x'_t$	细光束子午场曲；
$x'_s$	细光束弧矢场曲；
$x'_t - x'_s$	象散；
$K'_{T1}$	全口径的子午彗差；
$K'_{T0.7}$	0.707口径的子午彗差；
QP	相对畸变；
HI	理想象高；
E. F. L	焦距；
B. F. L	后截距；
F No.	相对孔径倒数；
F. A.	视场角；
$L'_p$	入瞳距离或光栏距 $L'_p$ 下标所示面的距离；
$\eta$	物高；
$\omega$	镜头视场。

编号: 03-02-001

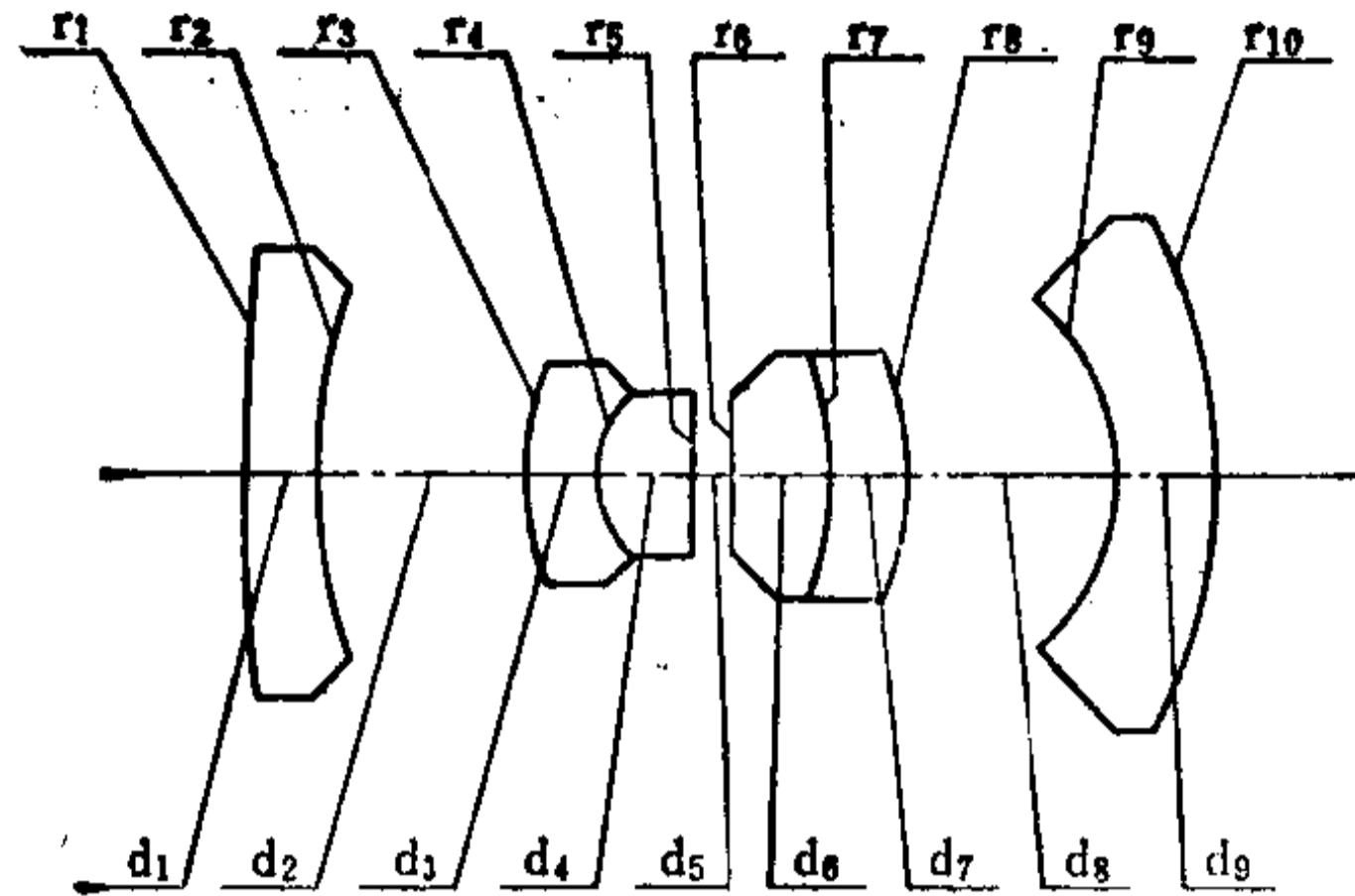
# 广 角 镜 头

E.F.L=100

B.F.L=53.35

FNo.=11

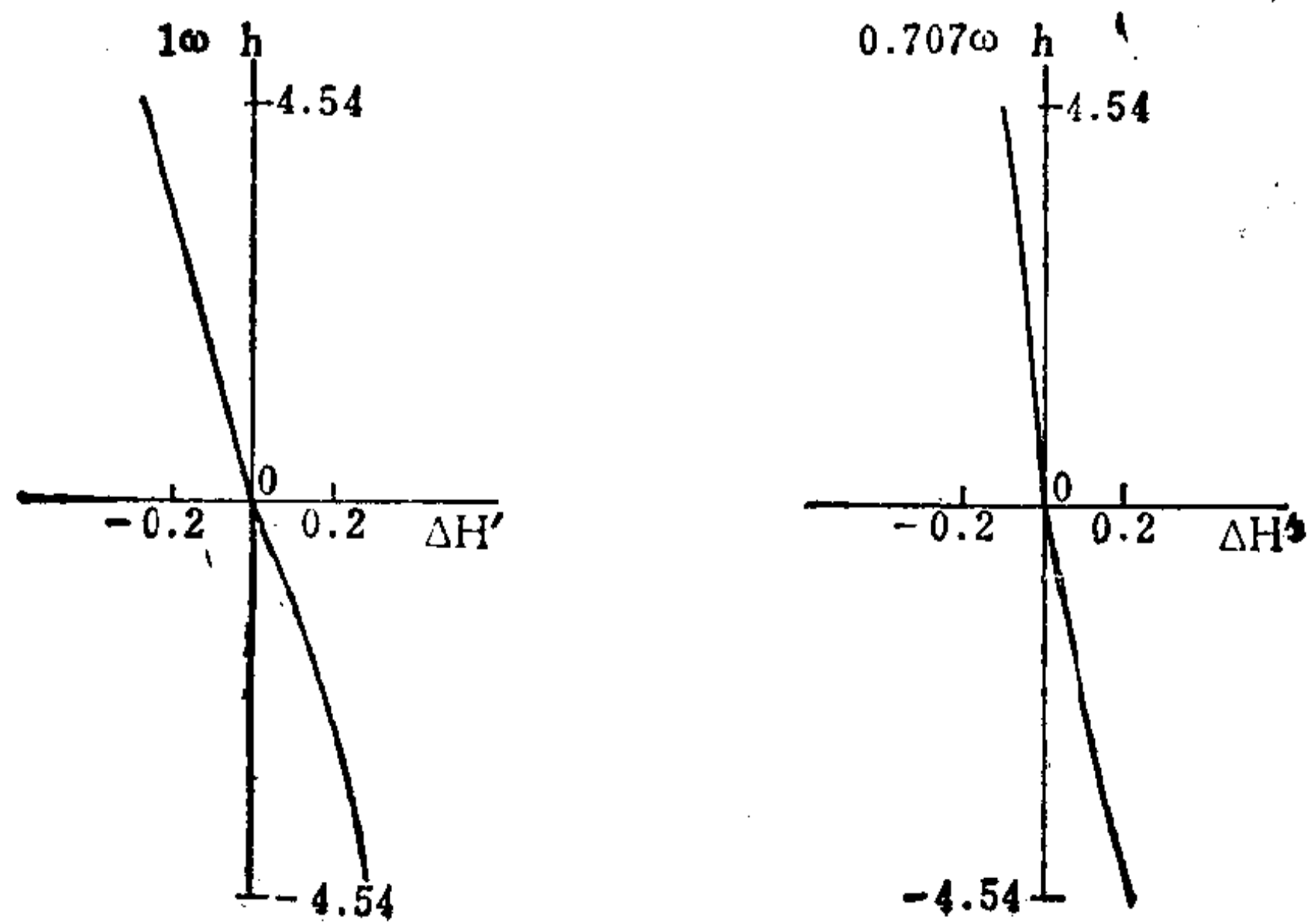
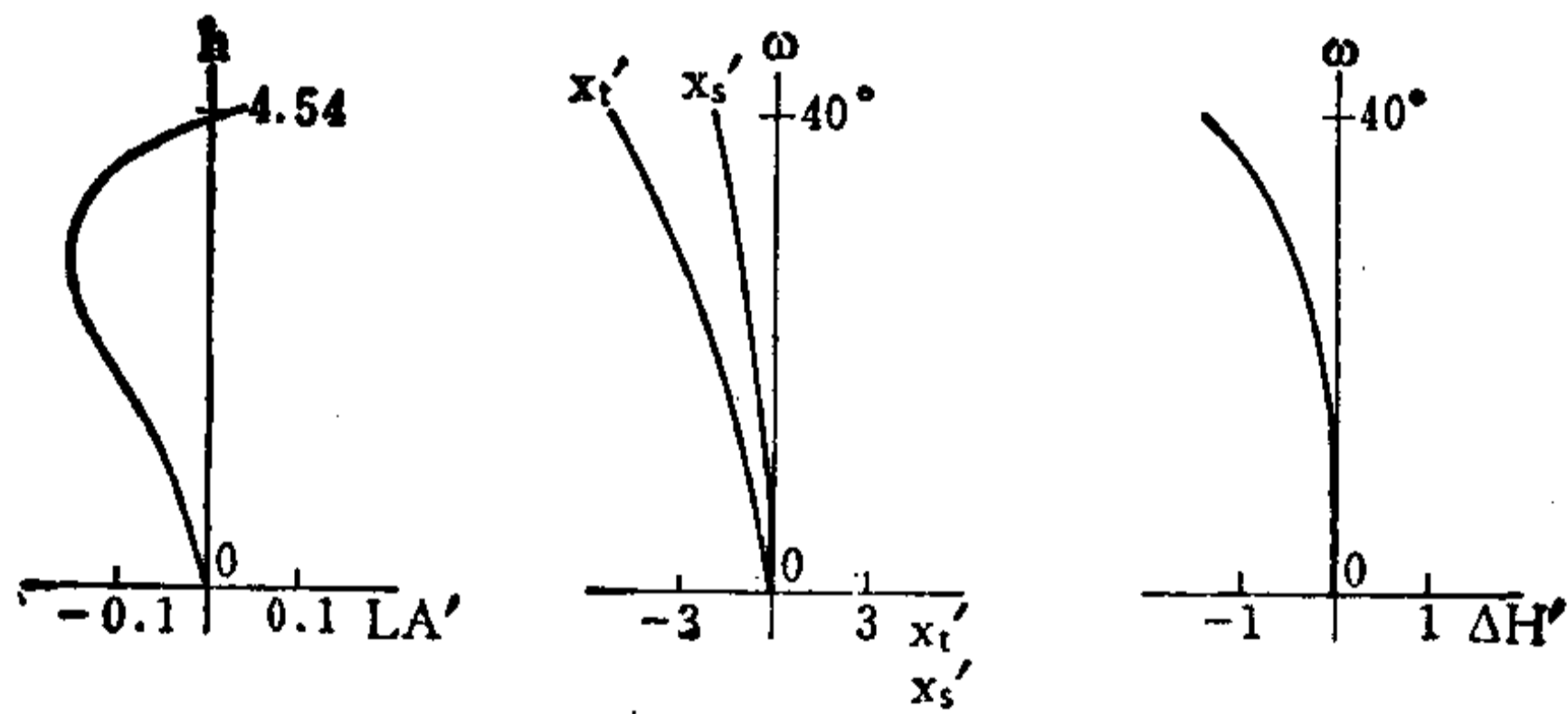
F.A.=±40°



序号	r	d	n <sub>d</sub>	v	序号	r	d	n <sub>d</sub>	v
1	585.51	7.69	1.61375	56.4	6	-64.54	10.77	1.81600	46.8
2	52.68	23.08			7	-39.80	8.46	1.80518	25.4
3	26.50	7.69	1.74400	44.8	8	-41.68	23.08		
4	12.27	10.77	1.60729	59.4	9	-25.89	10.77	1.72825	28.5
5	-869.76	4.62*			10	-62.57			

4.62\* = 2.31 + 2.31

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.00244	0.00293	-0.00338	-0.00229	-0.06040	84.6	-1.7%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{T1}$	$K'_{T0.7}$
100	0.031	-1.406	-5.336	-1.940	-3.395	0.008	0.015
70	-0.158	-0.356	-3.103	-1.308	-1.795	0.074	0.044



编号: 03-02-002

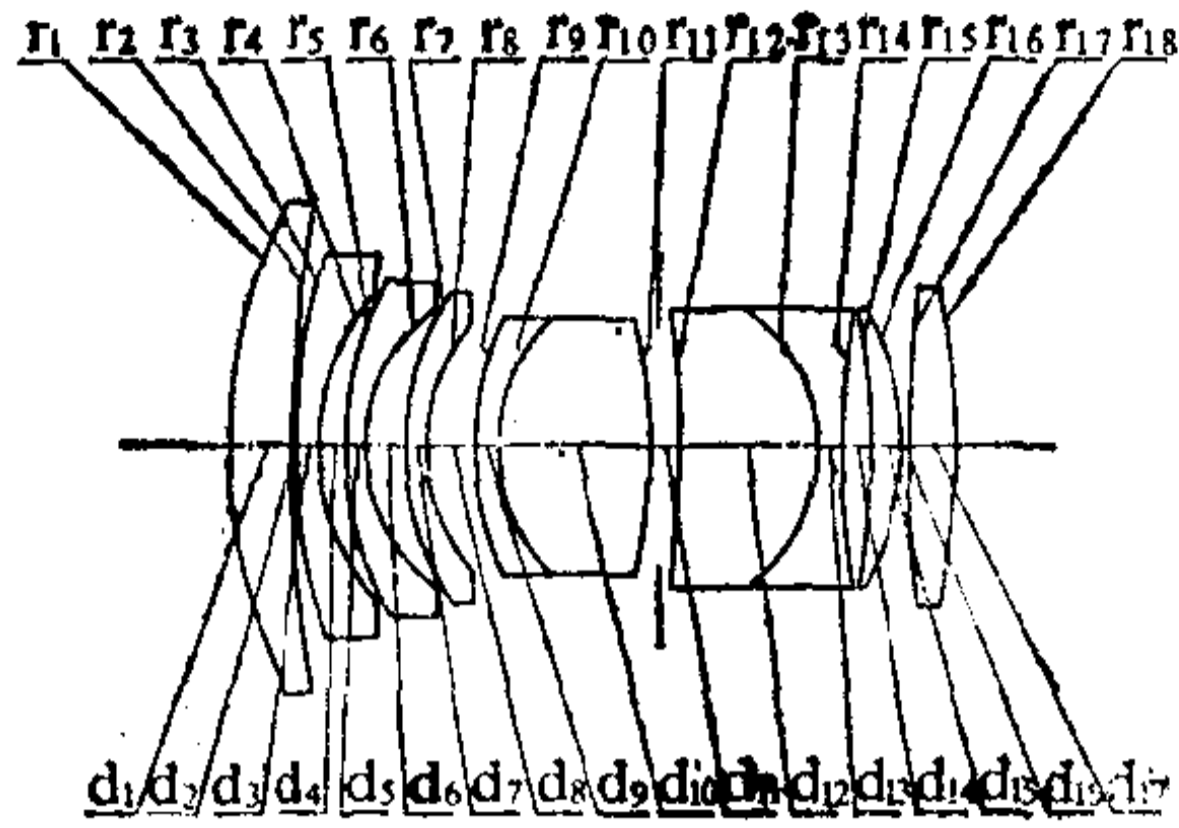
# 超 广 角 摄 影 镜 头

E.F.L=106

B.F.L=168.07

FNo.=2

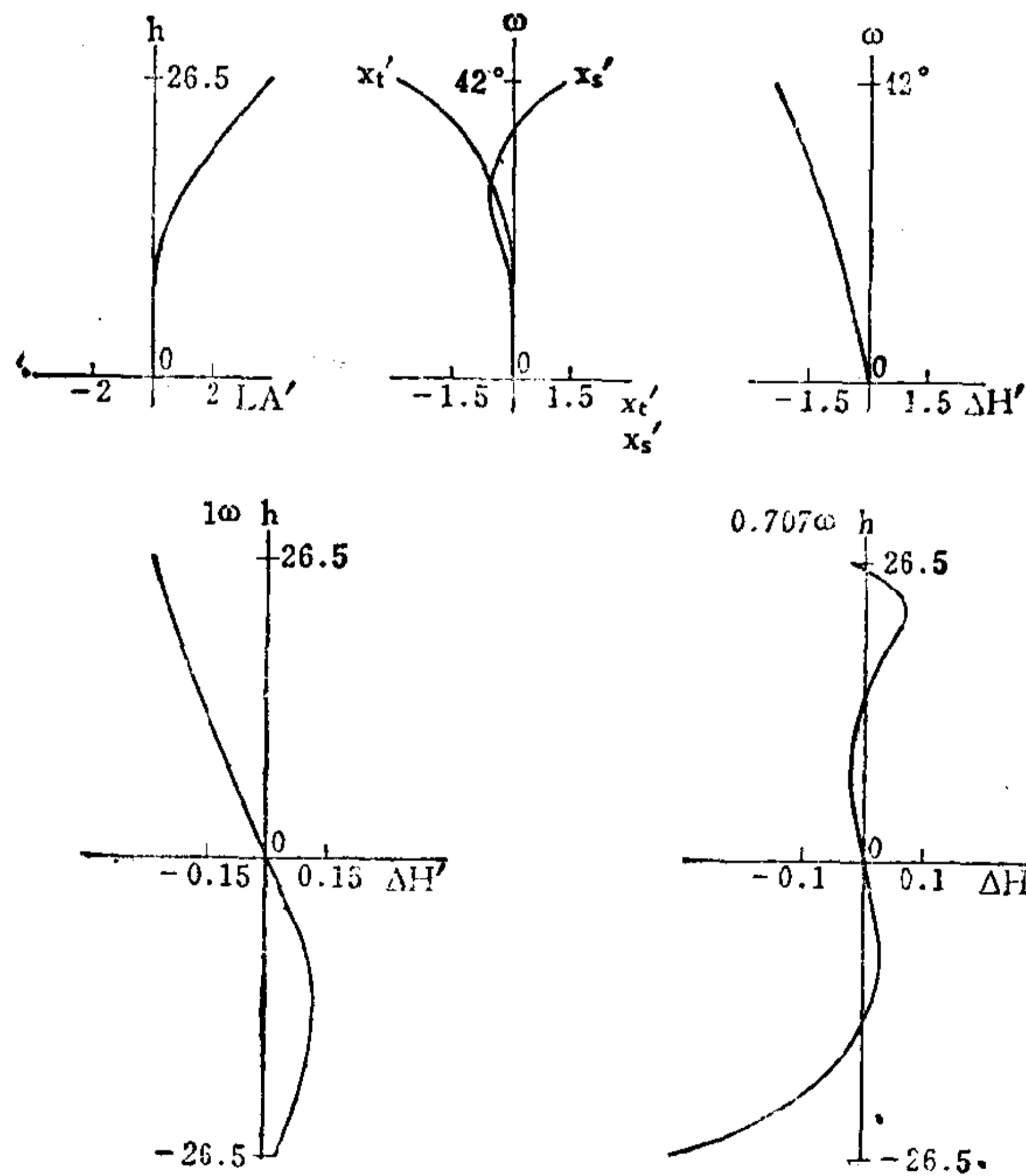
F.A.=±42°



序号	r	d	n	v	序号	r	d	n	v
1	171.815	20.41	1.757	47.9	10	56.518	46.94	1.596	39.2
2	529.953	0.82			11	-237.280	9.80*		
3	206.162	7.35	1.620	60.3	12	-442.731	42.86	1.773	49.6
4	73.791	8.16			13	-51.983	6.53	1.689	31.1
5	119.366	6.12	1.620	60.3	14	229.59	9.18		
6	54.314	11.84			15	-238.402	11.22	1.697	55.6
7	91.723	6.12	1.670	57.3	16	-88.571	0.82		
8	60.836	14.29			17	374.903	15.51	1.697	55.6
9	96.534	6.12	1.773	49.6	18	-229.223			

9.80\* = 4.90 + 4.90

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	0.0643	-0.0228	0.0509	-0.2725	-1.8404	96.0	-2.6%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_i$	$x'_s$	$x'_i - x'_s$	$K'_{11}$	$K'_{f0.7}$
100	3.845	-2.489	-2.939	1.328	-4.267	-0.143	-0.063
70	1.430	-1.612	-0.584	-0.699	0.115	-0.178	-0.007



编号: 03-02-003

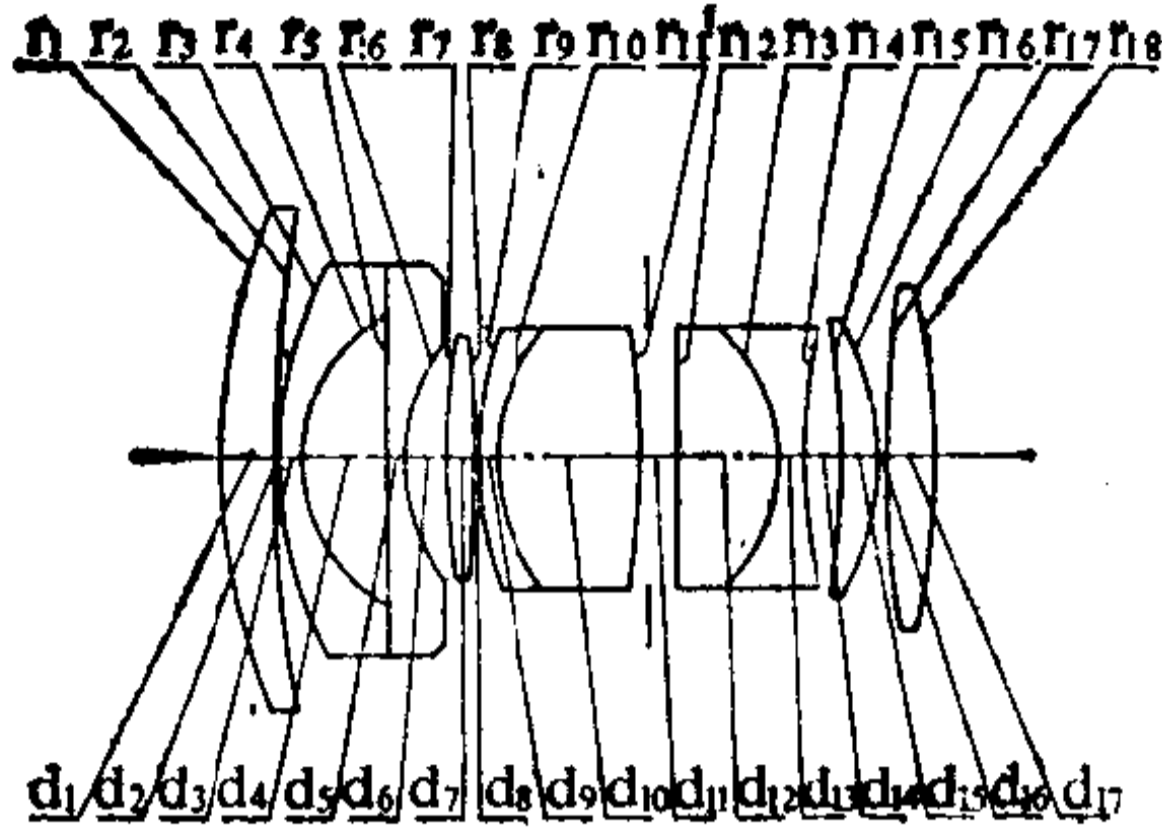
# 超 广 角 摄 影 镜 头

E.F.L=97.4

B.F.L=150.7

FNo. = 2

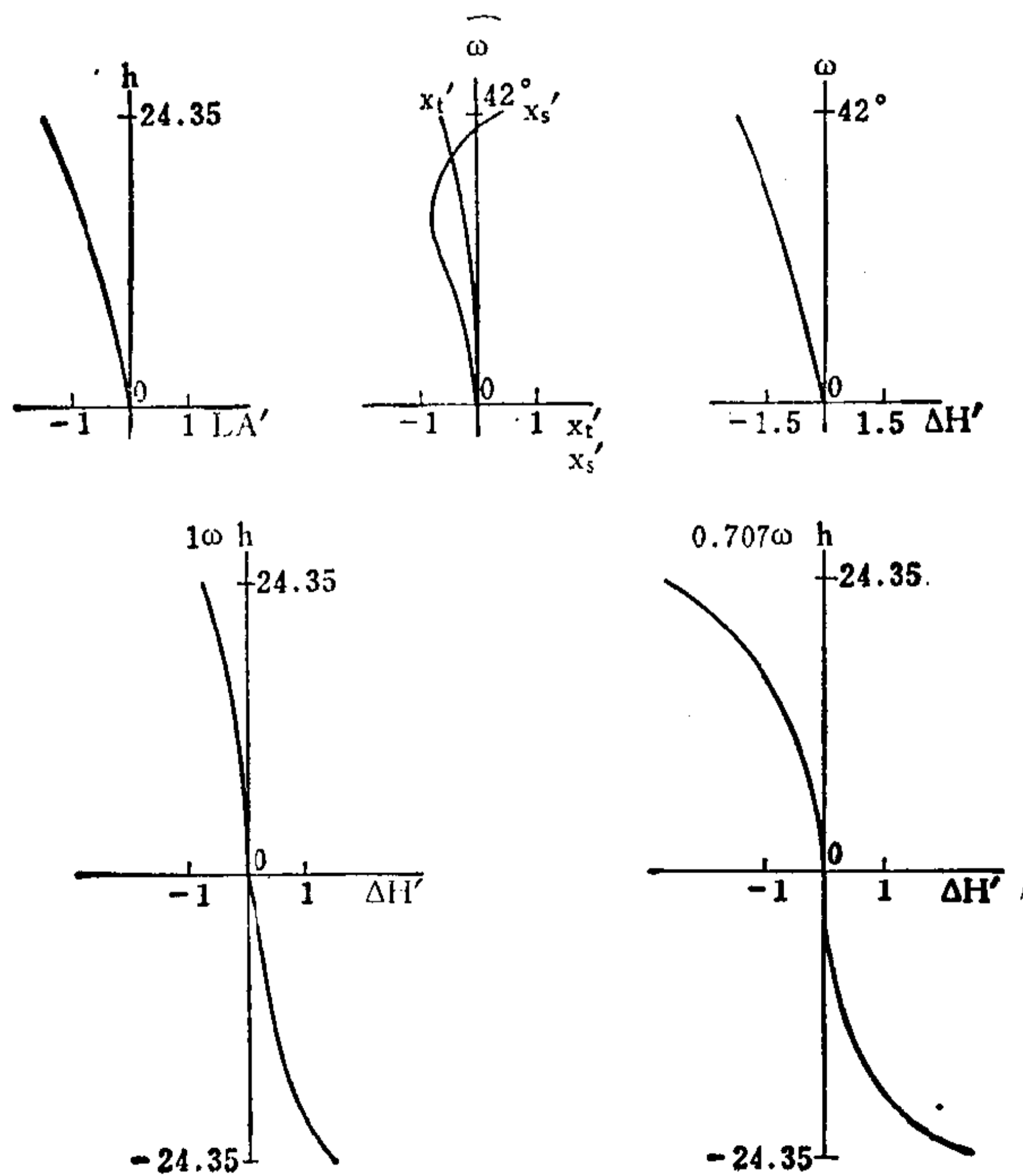
F.A. = ±42°



序号	r	d	n	v	序号	r	d	n	v
1	204.057	18.27	1.744	44.8	10	64.249	44.08	1.603	38.0
2	626.767	0.82			11	-316.204	10.61*		
3	138.494	7.35	1.603	60.7	12	-2779.380	32.23	1.773	49.6
4	52.127	26.12			13	-55.363	8.16	1.699	30.1
5	∞	6.12	1.603	60.7	14	175.571	12.25		
6	67.098	12.24			15	-264.812	12.25	1.697	55.6
7	233.682	9.80	1.516	56.8	16	-88.820	0.82		
8	-633.159	0.82			17	339.233	15.51	1.67	57.3
9	111.159	6.12	1.773	49.6	18	-239.616			

10.61\* = 5.31 + 5.30

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.3630	0.0881	0.0914	-0.3589	-1.6816	87.7	-2.5%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{r1}$	$K'_{r0.7}$
100	-1.556	-2.234	-0.642	0.323	-0.965	0.040	0.014
70	-1.088	-1.425	-0.299	-0.936	0.646	-0.008	-0.009





编号: 03-02-004

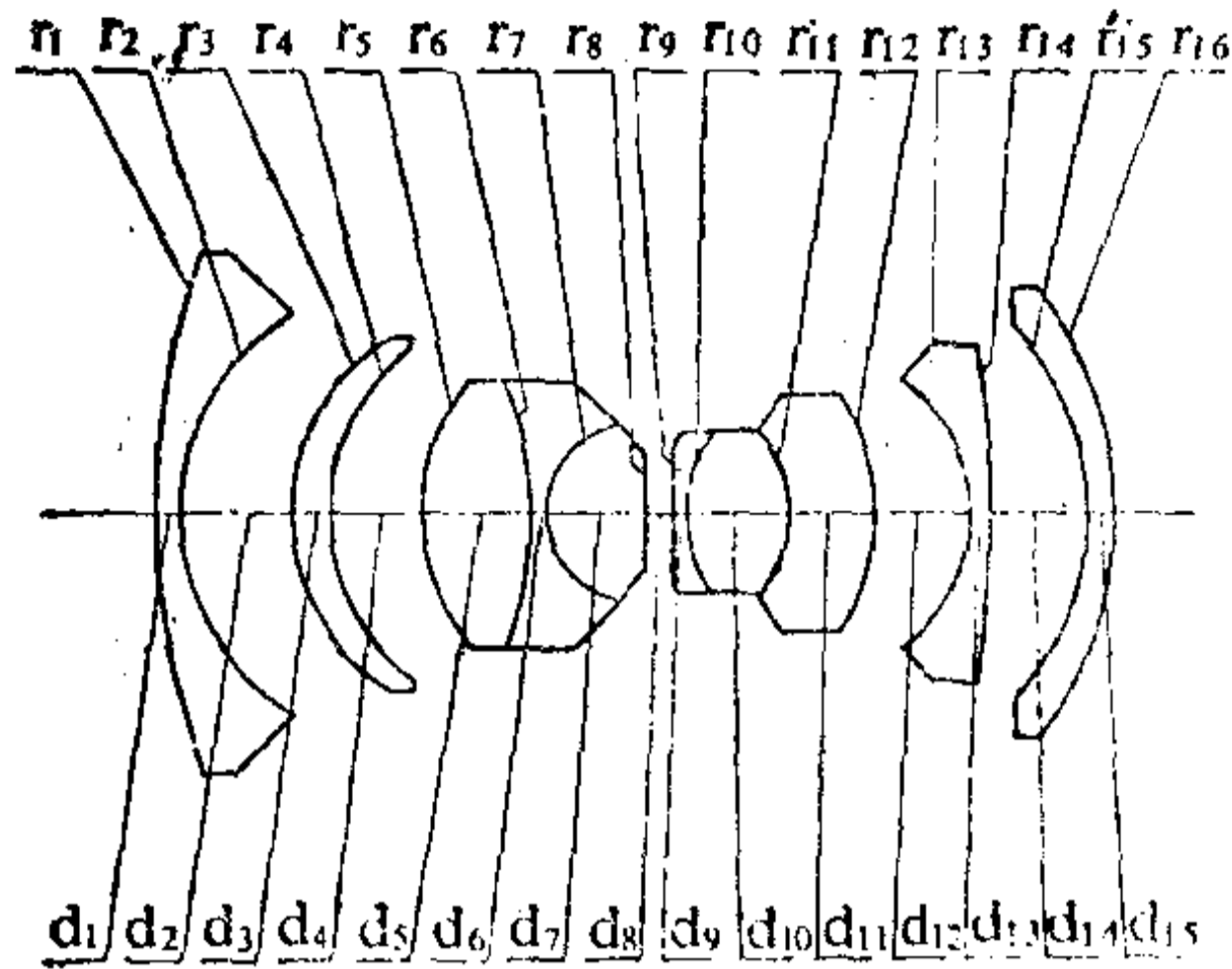
# 广 角 镜 头

E.F.L=100

B.F.L=34.416

FNo.= 8

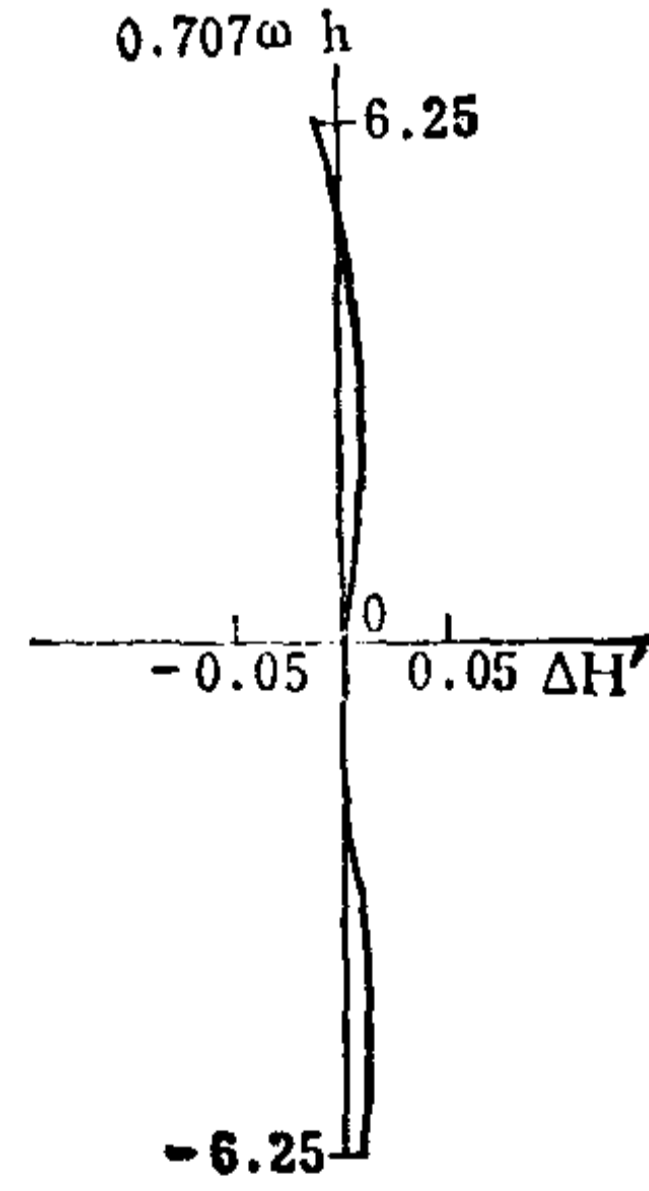
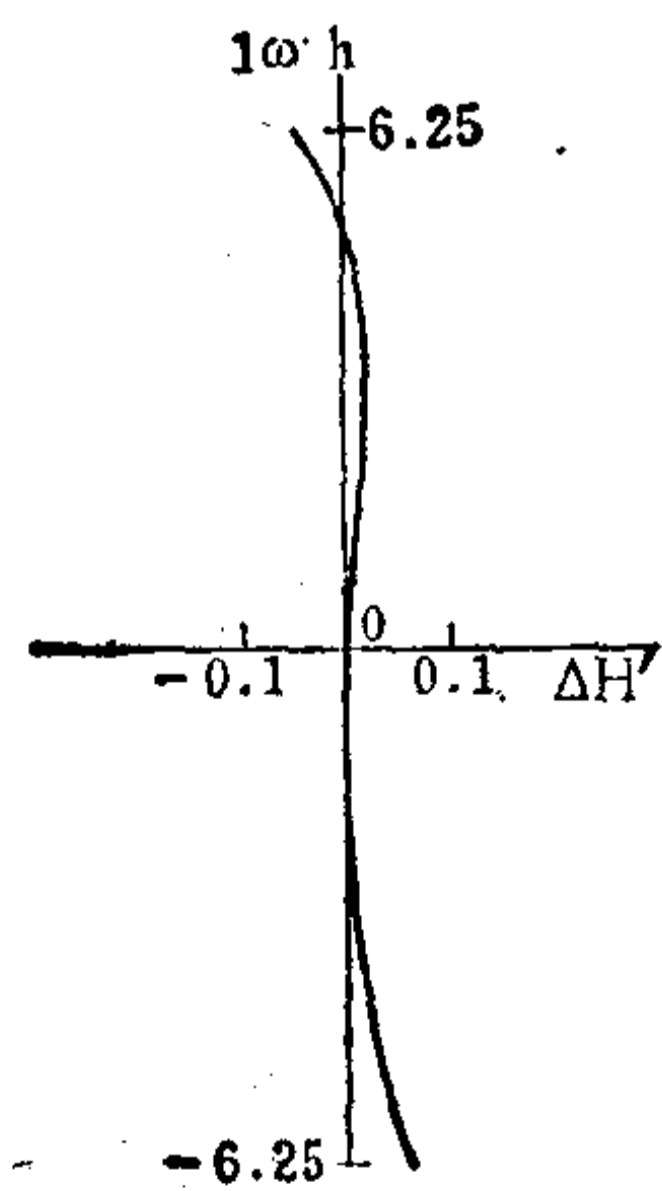
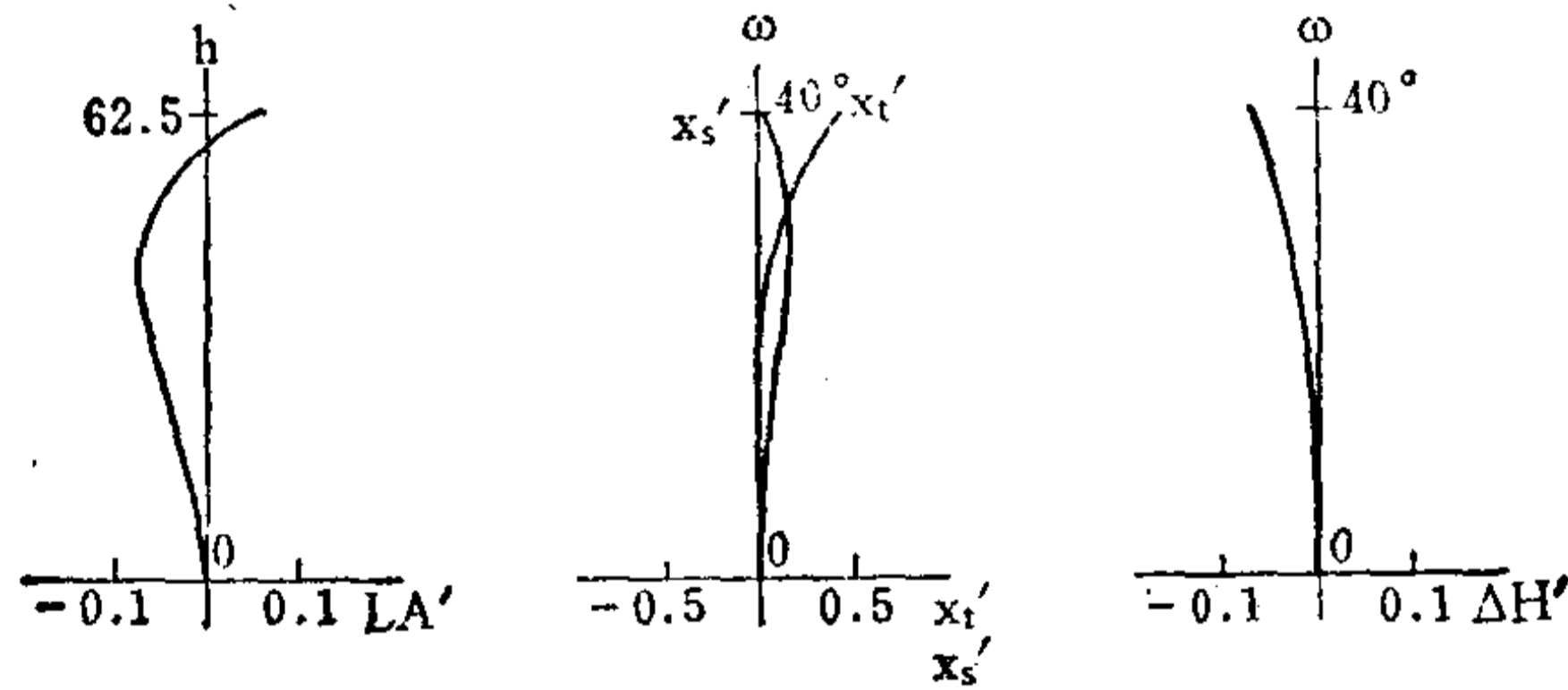
F.A.= ±40°



序号	r	d	n	v	序号	r	d	n	v
1	170.00	4.53	1.51633	64.1	9	738.87	3.08	1.57135	52.9
2	46.44	21.54			10	30.50	20.00	1.69350	53.3
3	39.80	7.69	1.51633	64.1	11	-22.85	16.92	1.80518	25.4
4	40.72	18.77			12	-41.76	18.46		
5	44.48	20.00	1.69700	48.5	13	-32.43	4.15	1.51633	64.1
6	-70.42	3.08	1.72000	43.7	14	-257.17	18.46		
7	17.44	20.00	1.58215	42.1	15	-53.93	4.95	1.51633	64.1
8	215.37	4.62*			16	-73.63			

4.62\* = 2.31 + 2.31

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.00230	-0.00144	-0.00294	0.00666	-0.00602	83.9	-0.077%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_1$	$x'_s$	$x'_1 - x'_s$	$K'_{11}$	$K'_{10.7}$
100	0.047	-0.065	0.436	-0.021	0.457	-0.004	0.003
70	-0.069	-0.017	0.069	0.170	-0.078	-0.006	0.004



编号: 03-02-005

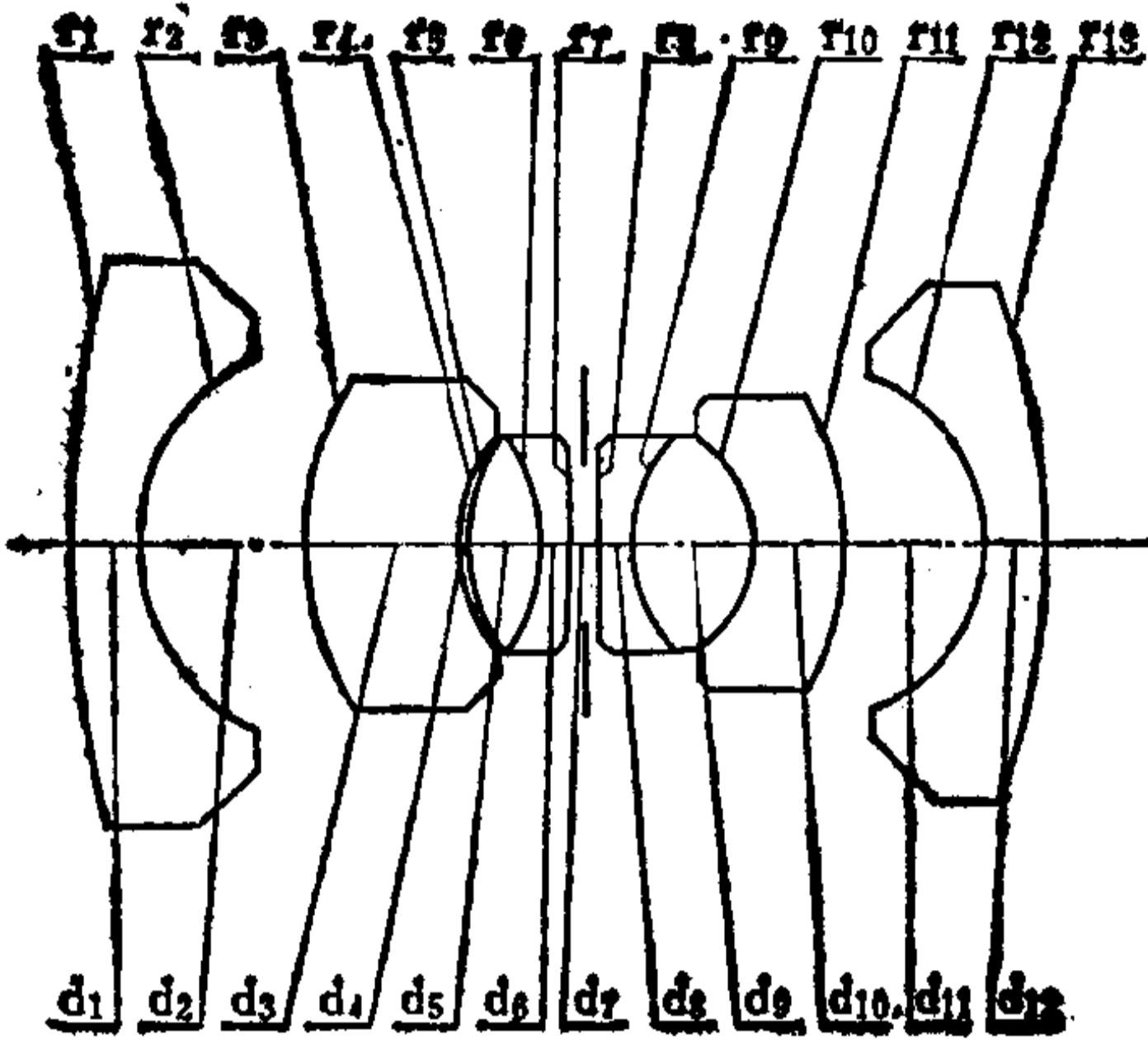
# 超 广 角 镜 头

E.F.L=100

B.F.L=28.9

FNo.=2.8

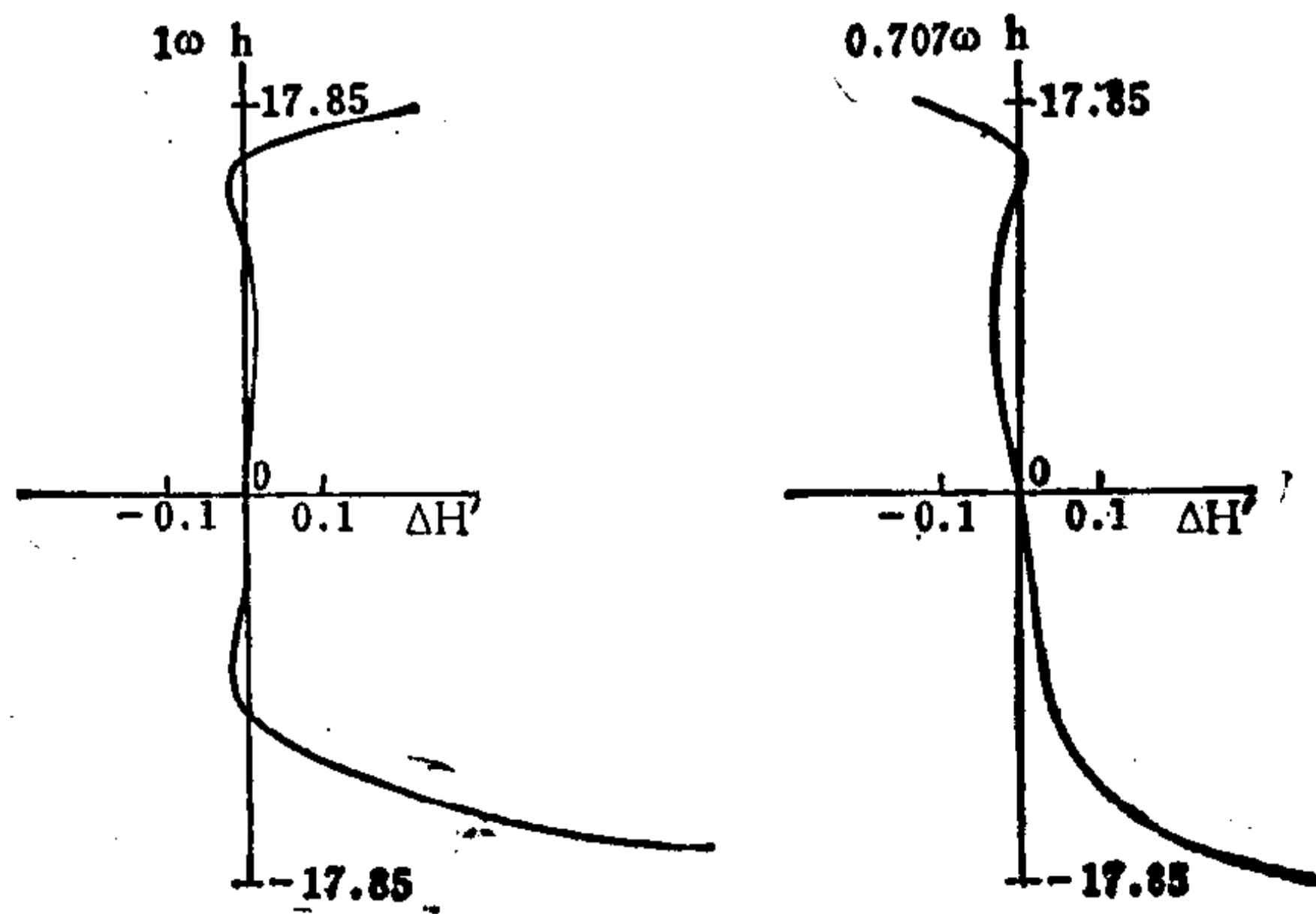
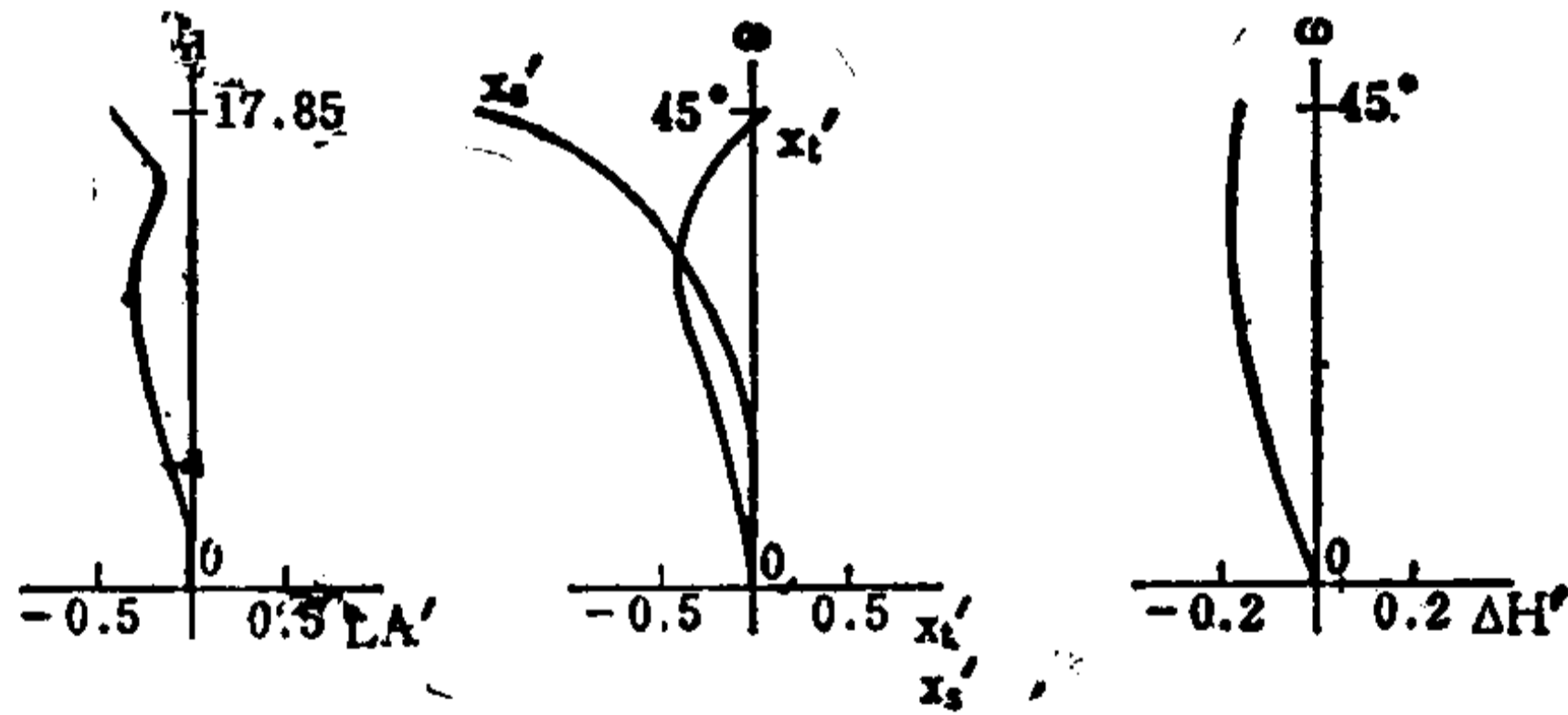
F.A.=±45°



序号	r	d	na	v	序号	r	d	na	v
1	270.70	17.00	1.49388	66.1	8	1225.00	8.30	1.52015	63.6
2	47.95	38.55			9	35.85	29.20	1.62041	60.3
3	68.00	36.28	1.72340	38.0	10	-29.79	20.40	1.80802	40.7
4	39.72	2.20			11	-74.73	34.50		
5	43.14	16.90	1.67790	55.5	12	-42.06	14.00	1.50463	64.7
6	-45.35	6.80	1.57501	41.3	13	-176.70			
7	-792.80	6.00*							

6.00\* = 3.00 + 3.00

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.0867	-0.0257	-0.0534	0.0342	-0.1992	100	-0.18%
h 或 $\omega$ %	LA'	$\Delta H'$	$x_t$	$x_s'$	$x_t - x_s'$	$K_{T1}'$	$K_{T0.7}'$
100	-0.437	-0.176	0.048	-1.570	1.617	1.577	0.062
70	-0.295	-0.185	-0.426	-0.392	-0.034	0.181	0.035



编号: 03-02-006

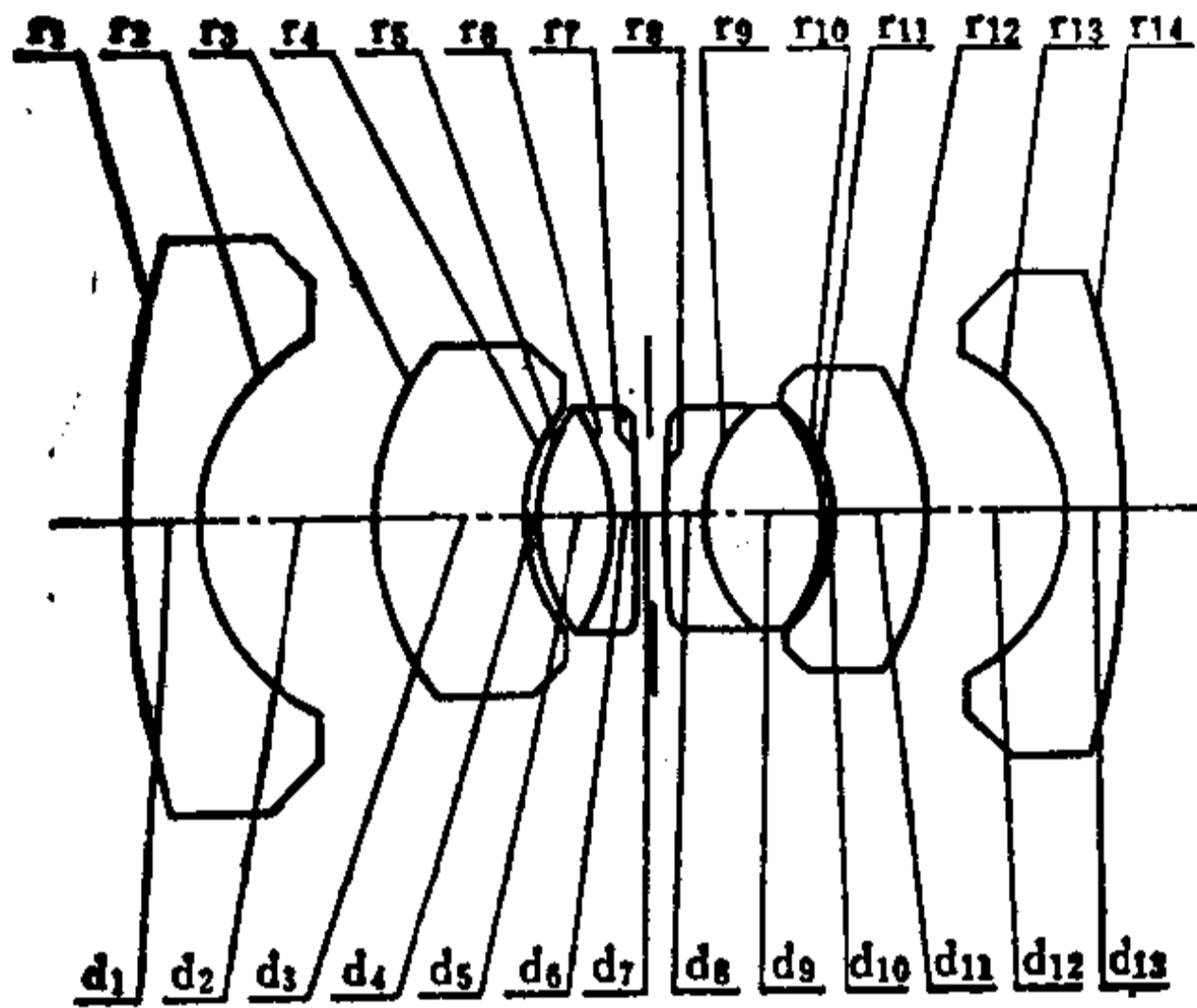
# 超 广 角 镜 头

E.F.L=100

B.F.L=32.71

FNo.=2.8

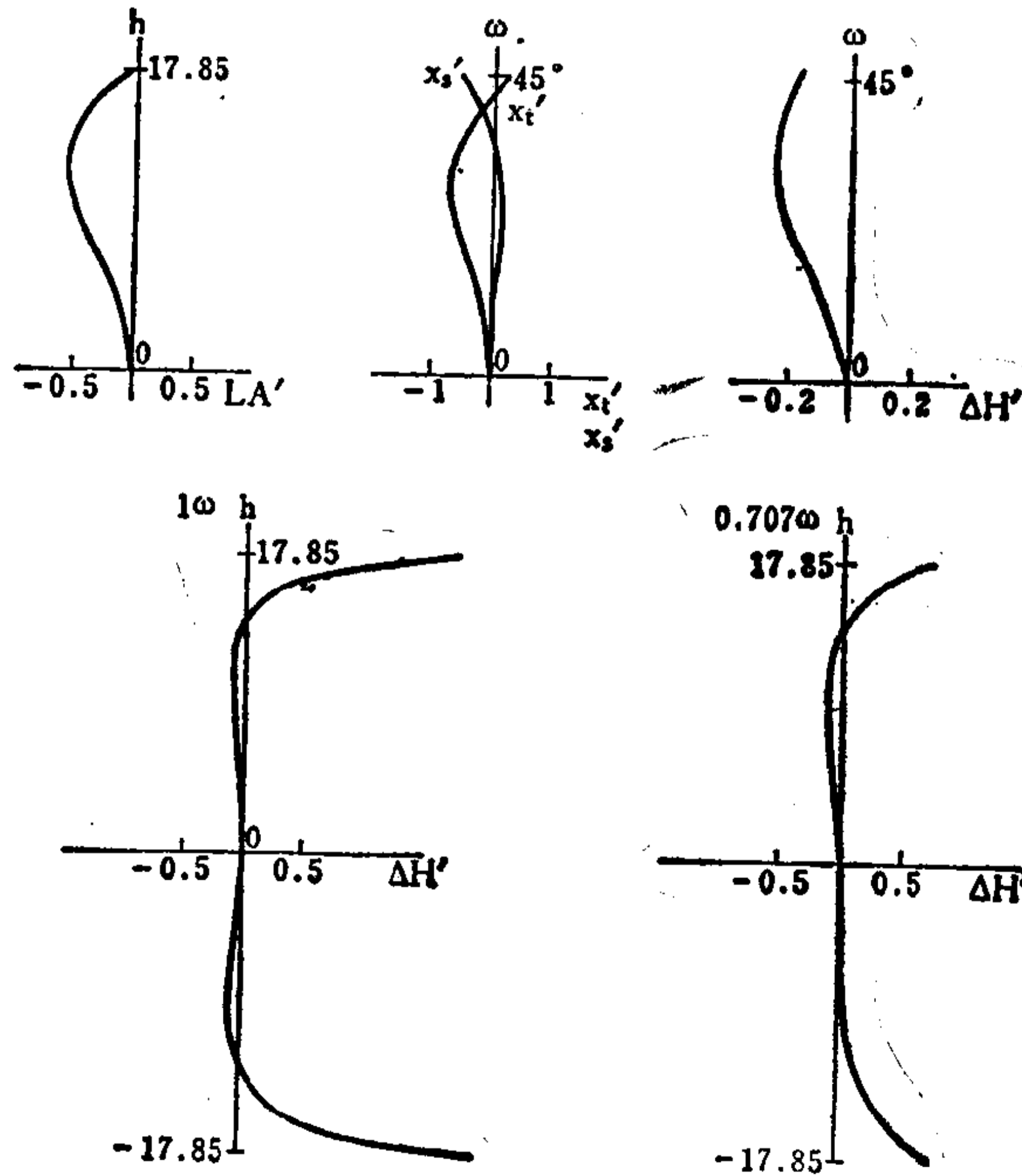
F.A.=±45°



序号	r	d	n <sub>d</sub>	v	序号	r	d	n <sub>d</sub>	v
1	267.00	17.00	1.49388	66.1	8	893.84	9.55	1.47069	67.3
2	48.21	40.80			9	34.85	27.00	1.55753	67.3
3	67.64	35.16	1.66998	39.2	10	-41.50	0.70		
4	40.75	3.04			11	-36.87	24.10	1.85000	29.0
5	45.25	16.90	1.67790	55.5	12	-63.54	32.00		
6	-48.00	6.80	1.56138	45.3	13	-42.55	12.50	1.51823	59.0
7	-715.00	5.76*			14	-199.70			

5.76\* = 3.00 + 2.76

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.127	-0.064	-0.110	0.103	-0.298	100	-0.17%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_i$	$x_o$	$x'_i - x'_o$	$K'_{T1}$	$K'_{T0.7}$
100	-0.024	-0.172	0.188	-0.527	0.715	1.855	-0.065
70	-0.579	-0.268	-0.714	0.010	-0.724	0.829	0.015



编号: 03-02-007

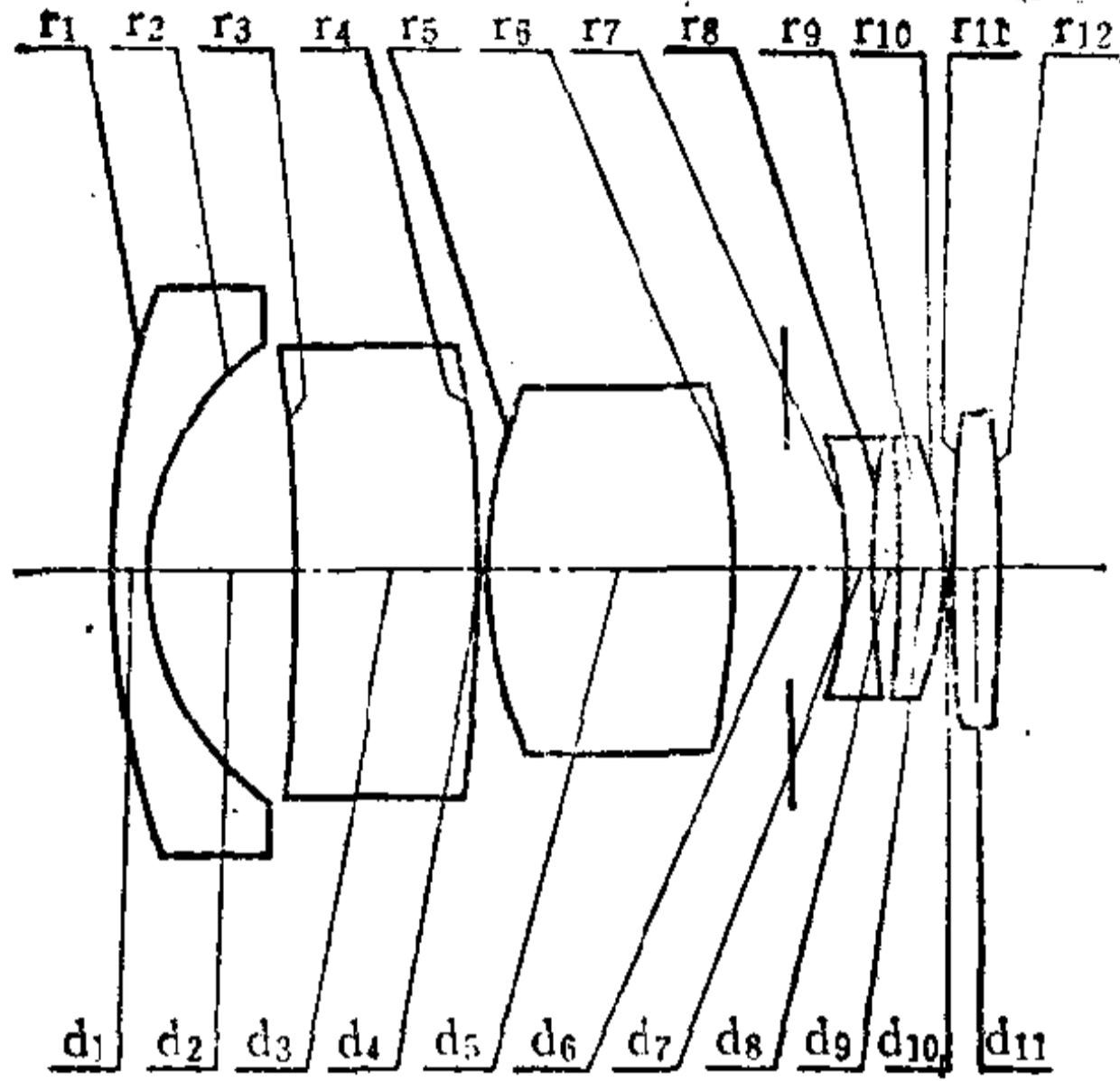
# 反远距型广角摄影镜头

E.F.L = 100

B.F.L = 107.292

FNo. = 2.8

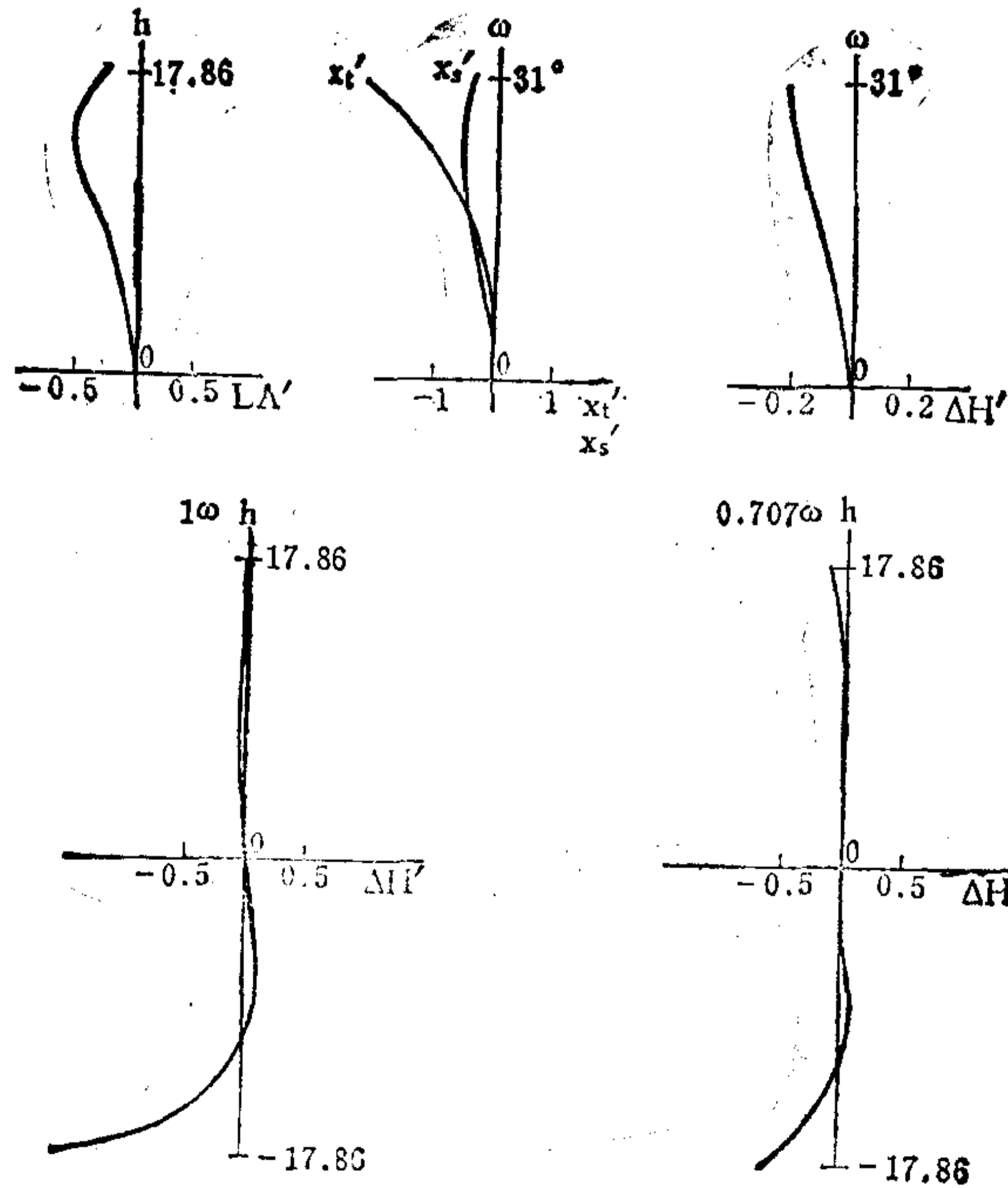
F.A. = ± 31°



序号	r	d	n	v <sub>d</sub>	序号	r	d	n	v <sub>d</sub>
1	133.333	5.556	1.51454	54.6	7	-59.023	4.167	1.71736	29.5
2	42.083	22.222			8	118.667	3.750		
3	-258.333	27.778	1.51680	64.2	9	-123.611	7.500	1.74413	19.4
4	-233.333	0.278			10	-49.167	0.278		
5	73.056	37.500	1.71300	53.9	11	277.778	6.944	1.62041	60.3
6	-133.889	17.222*			12	-188.669			

17.222\* = 8.611 + 8.611

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.0892	0.0238	0.0129	-0.1185	-0.2212	60.1	-0.39%
h 或 $\omega$ %	LA'	$\Delta H'$	$x_t$	$x'_s$	$x'_t - x'_s$	$K'_{f1}$	$K'_{f0.7}$
100	-0.317	-0.234	-2.251	-0.365	-1.886	-0.836	-0.110
70	-0.486	-0.191	-0.772	-0.655	-0.117	-0.386	-0.049



编号: 03-02-008

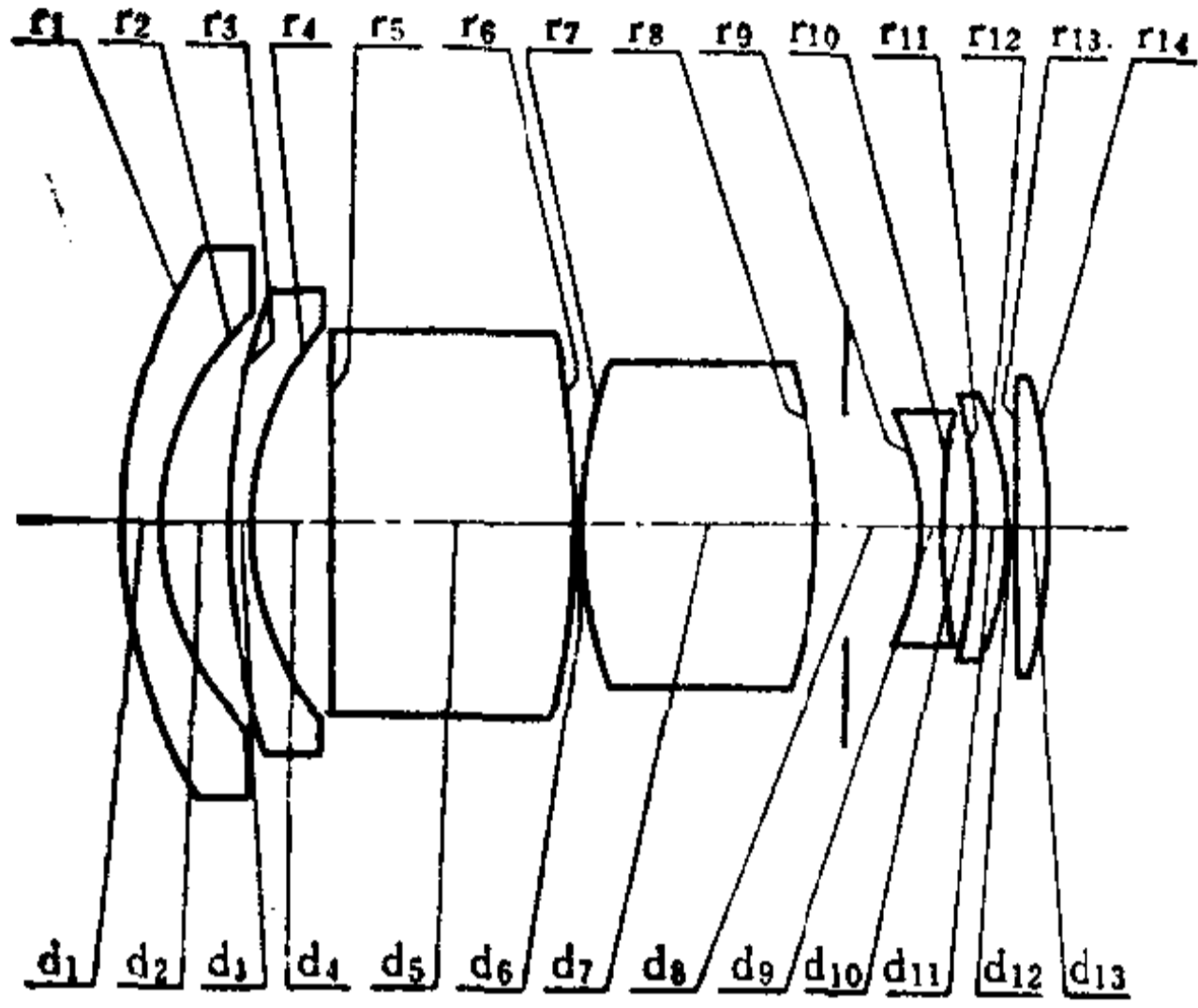
# 反远距型广角摄影镜头

E.F.L=100

B.F.L=131.5

FNo.=2.8

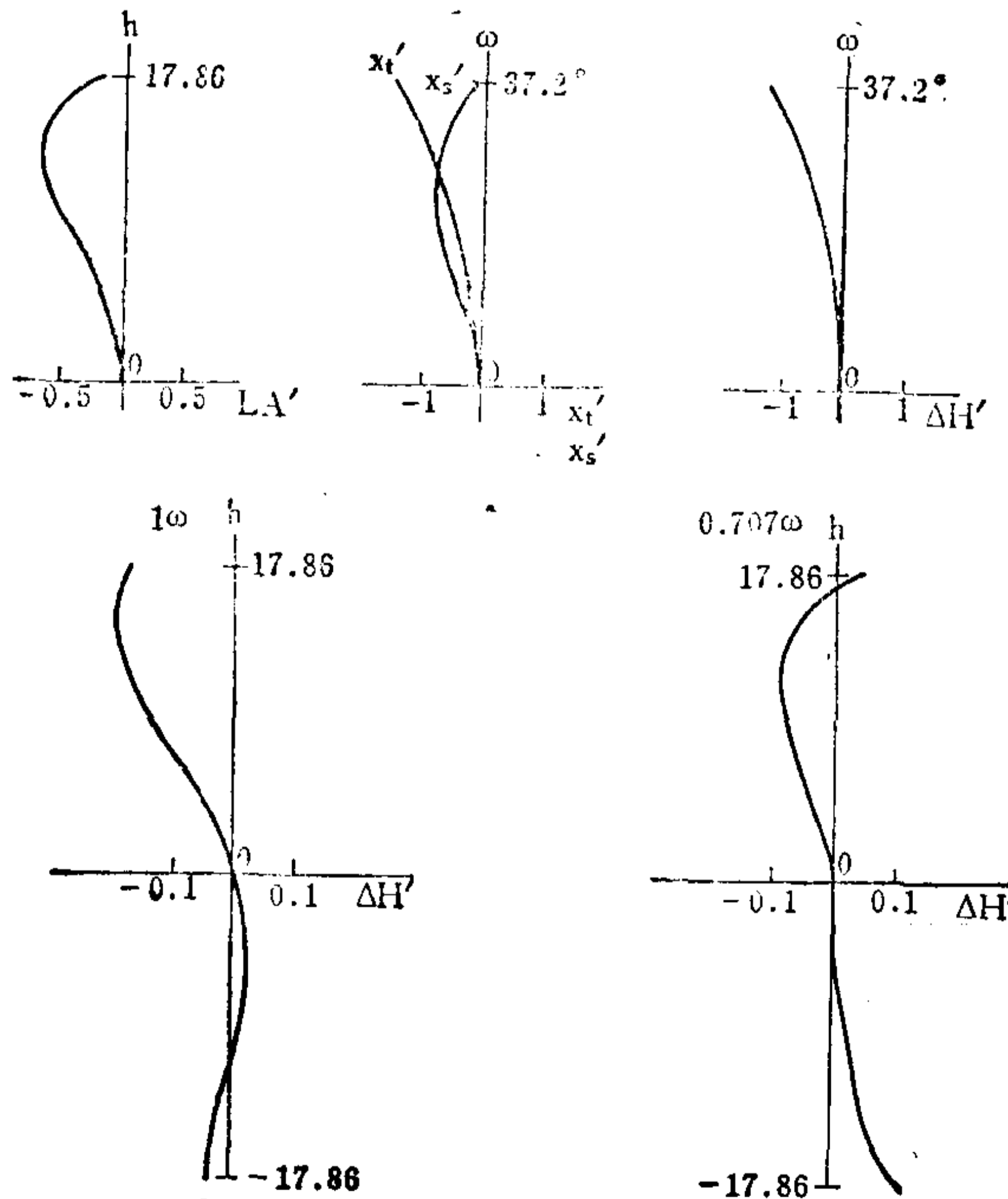
F.A.=±37.2°



序号	r	d	n	vd	序号	r	d	n	vd
1	125.874	9.090	1.62280	56.9	8	-150.350	24.126*		
2	64.685	15.035			9	-65.909	6.294	1.72825	28.3
3	150.350	6.294	1.62280	56.9	10	186.713	5.245		
4	70.979	18.182			11	-174.825	9.441	1.62041	60.3
5	-2814.060	56.643	1.51680	64.2	12	-64.685	0.350		
6	-258.741	0.350			13	1748.252	7.343	1.62041	60.3
7	113.986	54.195	1.71700	47.9	14	-91.928			

24.126\* = 12.000 + 12.126

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.1297	0.0087	0.0249	-0.1574	-0.5513	75.4	-1.7%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{T1}$	$K'_{T0.7}$
100	-0.205	-1.291	-1.819	-0.094	-1.516	-0.107	-0.098
70	-0.679	-0.619	-0.628	-0.833	0.206	0.068	-0.028



编号: 03-02-009

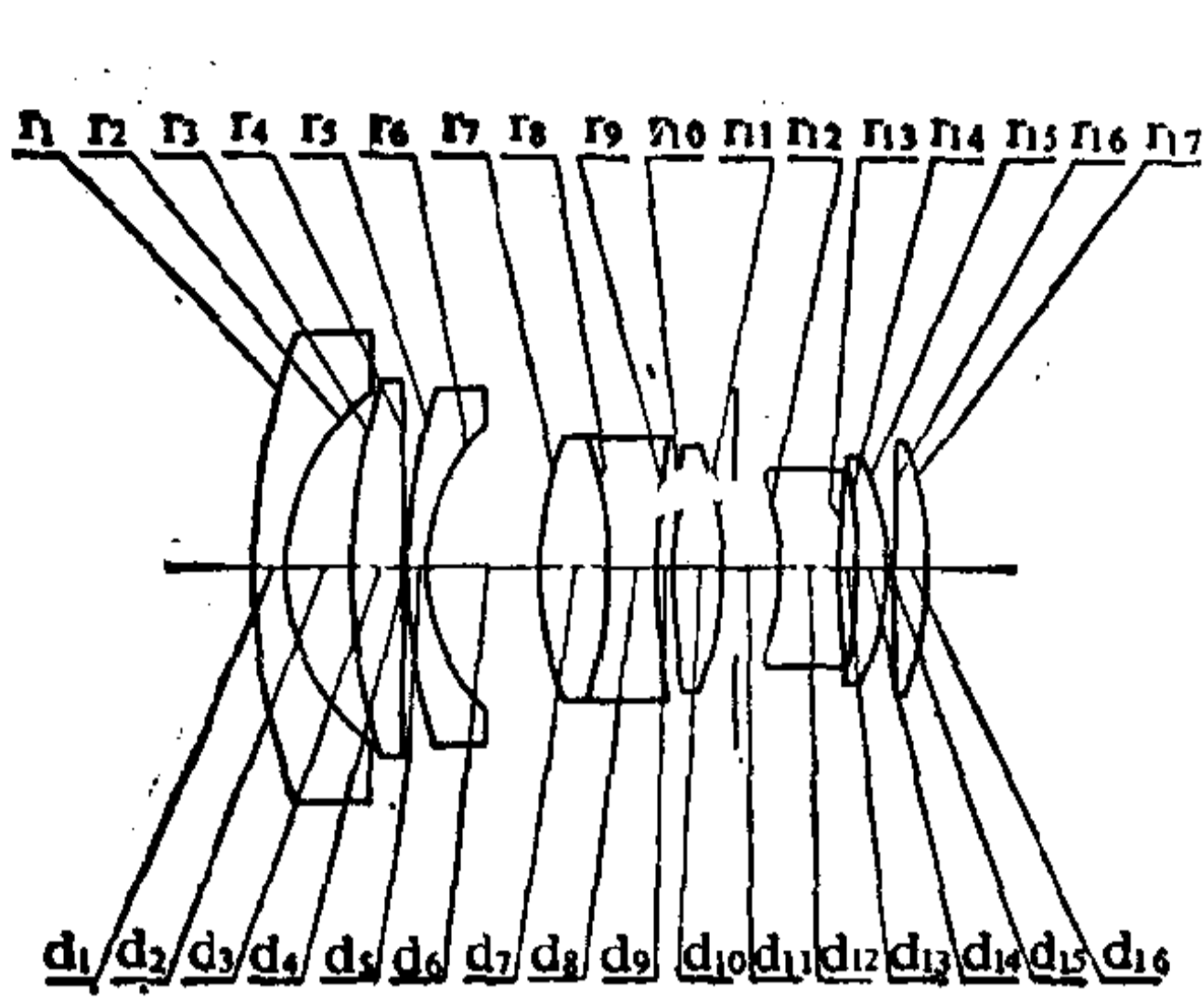
# 广角摄影镜头

E.F.L=99.3

B.F.L=133.4

FNo.=2

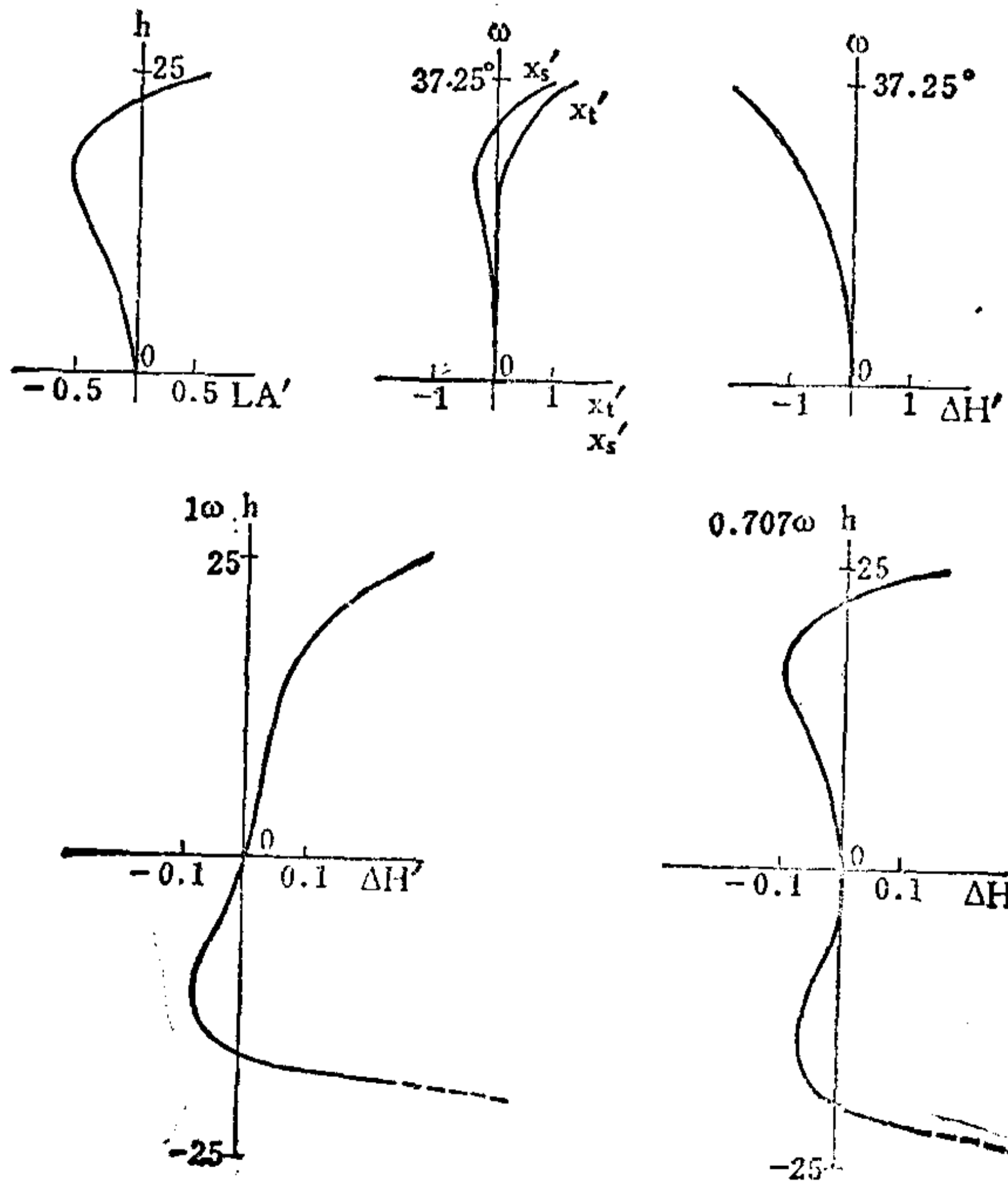
F.A.=±37.25°



序号	r	d	nd	v	序号	r	d	nd	v
1	227.238	11.189	1.62299	58.1	10	297.203	17.483	1.51680	64.2
2	76.224	22.727			11	-106.388	20.280*		
3	237.762	16.434	1.74400	44.9	12	-67.133	18.881	1.78470	26.1
4	5956.748	0.350			13	253.497	4.895		
5	213.252	6.993	1.62299	58.1	14	-244.755	11.888	1.74443	47.9
6	63.986	38.461			15	-76.923	0.350		
7	117.098	23.427	1.77250	49.5	16	875.524	12.238	1.71300	53.9
8	-134.266	15.743	1.51680	64.2	17	-127.295			
9	321.241	5.245							

20.280\* = 8.000 + 12.280

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.316	-0.092	0.074	-0.266	-1.026	75.5	-2.8%
h 或 $\omega$ %	LA'	$\Delta H'$	$x_t'$	$x_s'$	$x_t' - x_s'$	$K_{T1}$	$K_{T0.7}$
100	0.587	-2.119	1.249	0.983	0.266	1.450	0.109
70	-0.591	-0.863	0.032	-0.444	0.476	0.694	-0.081





编号: 03-02-010

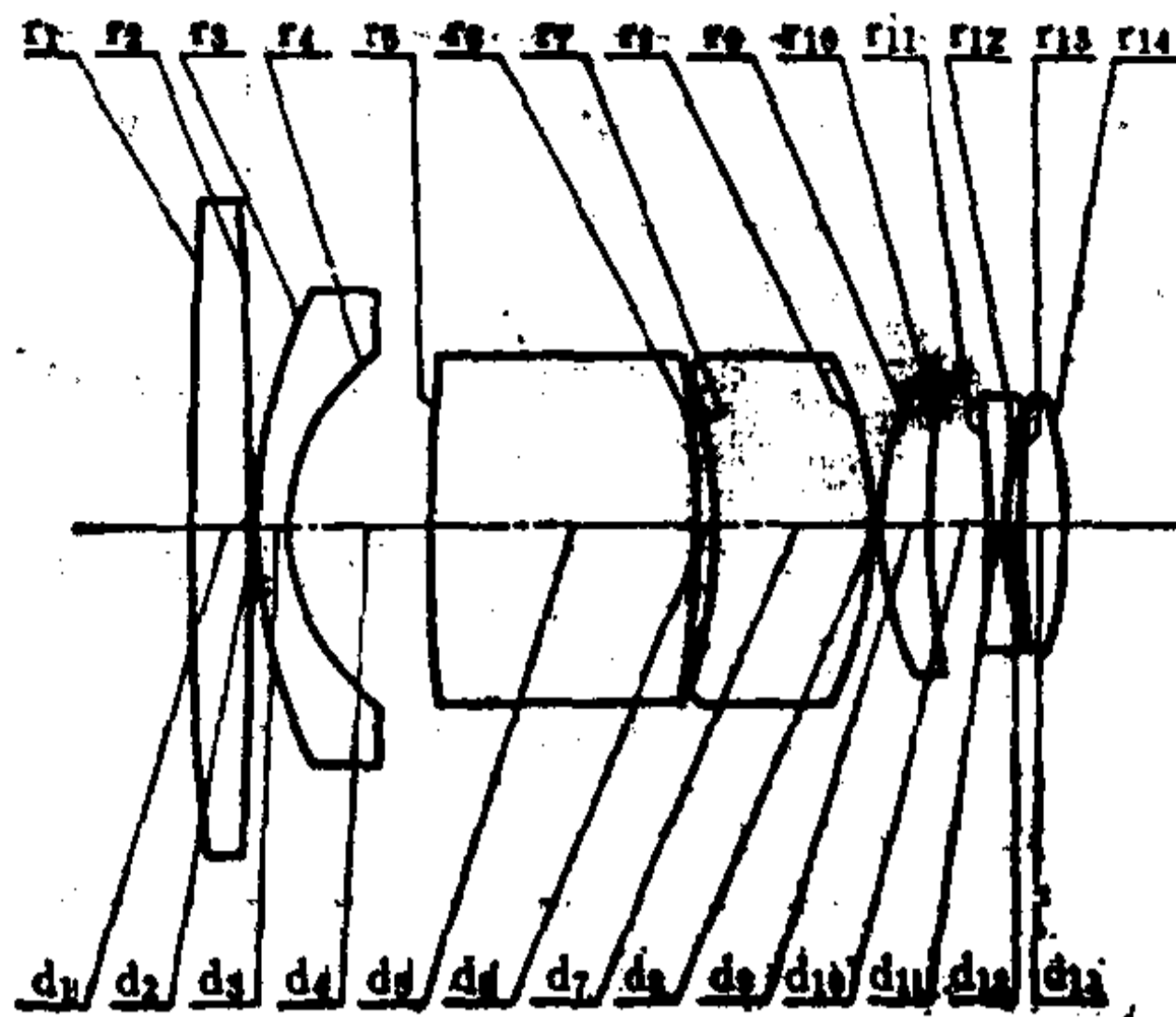
### 反远距型广角照相机镜头

E.F.L=100

B.F.L=136

FNo.=3.5

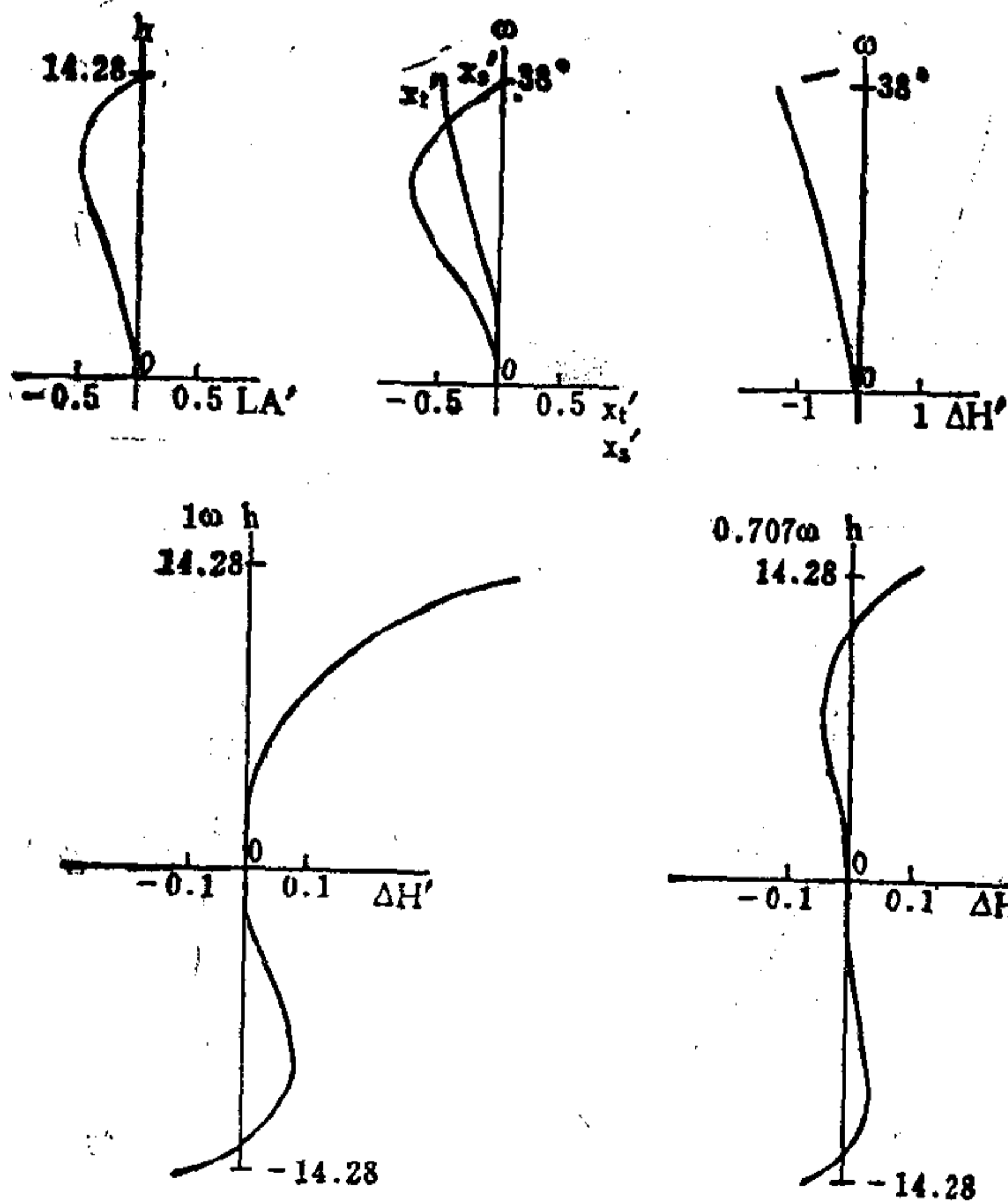
F.A.=±38°



序号	r	d	n	v	序号	r	d	n	v
1	1931.008	10.04	1.66672	48.3	8	-71.029	0.71		
2	-1186.038	0.71			9	58.017	10.11	1.66672	48.3
3	96.327	5.89	1.62041	60.2	10	123.080	10.36*		
4	40.104	25.58			11	-166.131	3.11	1.71736	29.5
5	364.602	47.27	1.51633	64.0	12	70.417	2.32		
6	-207.110	2.50			13	256.417	8.04	1.71300	53.9
7	-85.754	27.78	1.71300	53.9	14	-73.019			

10.36\* = 5.18 + 5.18

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.0643	0.0023	0.0029	-0.0833	-0.6349	78.3	-2%
h 或 $\omega$ %	LA'	$\Delta H'$	$x_1'$	$x_2'$	$x_2' - x_1'$	$K_{T1}^0$	$K_{T0.7}^0$
100	0.039	-1.535	-0.513	0.018	-0.531	0.156	0.111
70	-0.479	-0.902	-0.362	-0.730	0.368	0.011	0.004



编号: 03-02-011

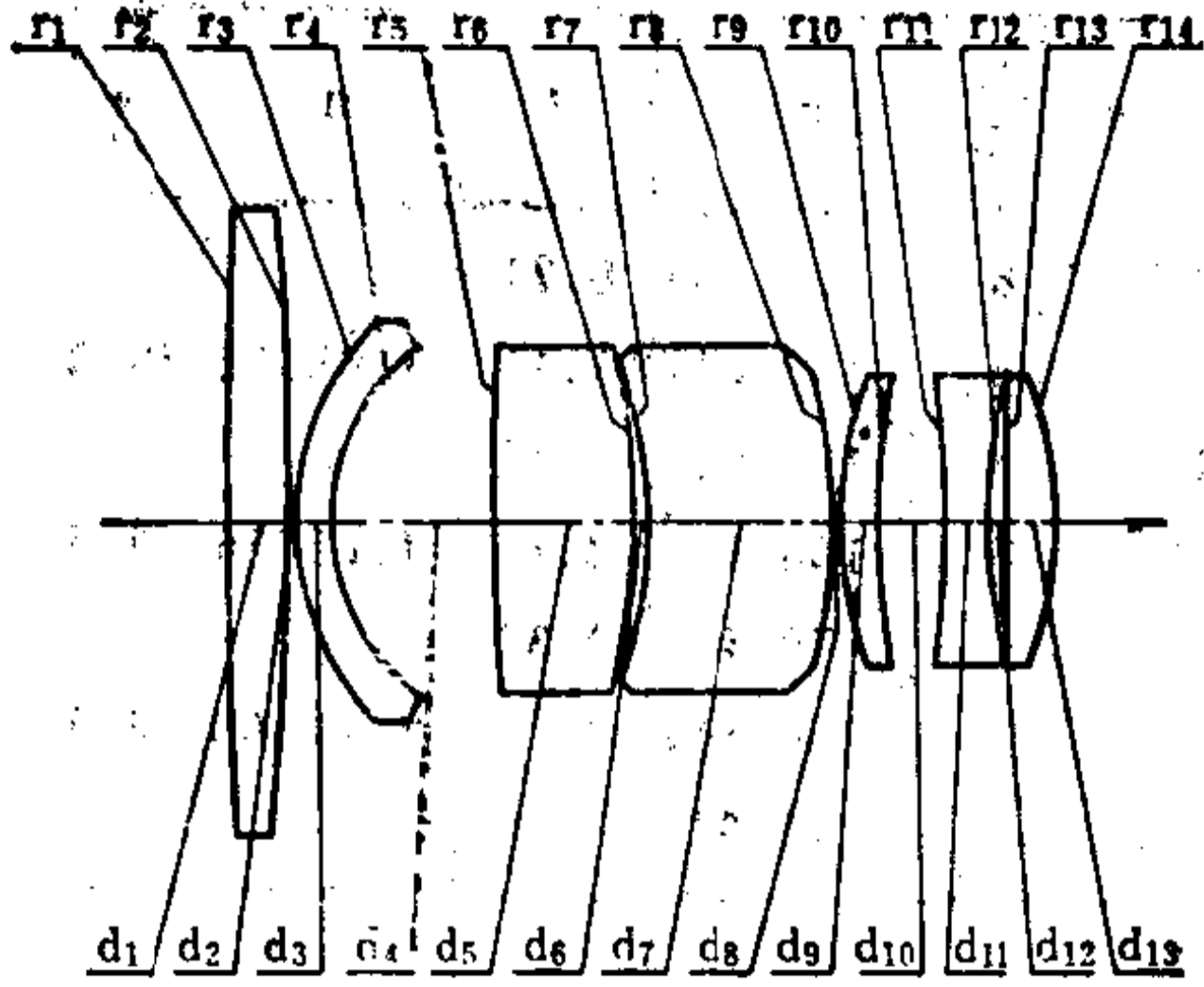
# 反远距型广角照相机镜头

E.F.L = 100

B.F.L = 133.9

FNo. = 8.5

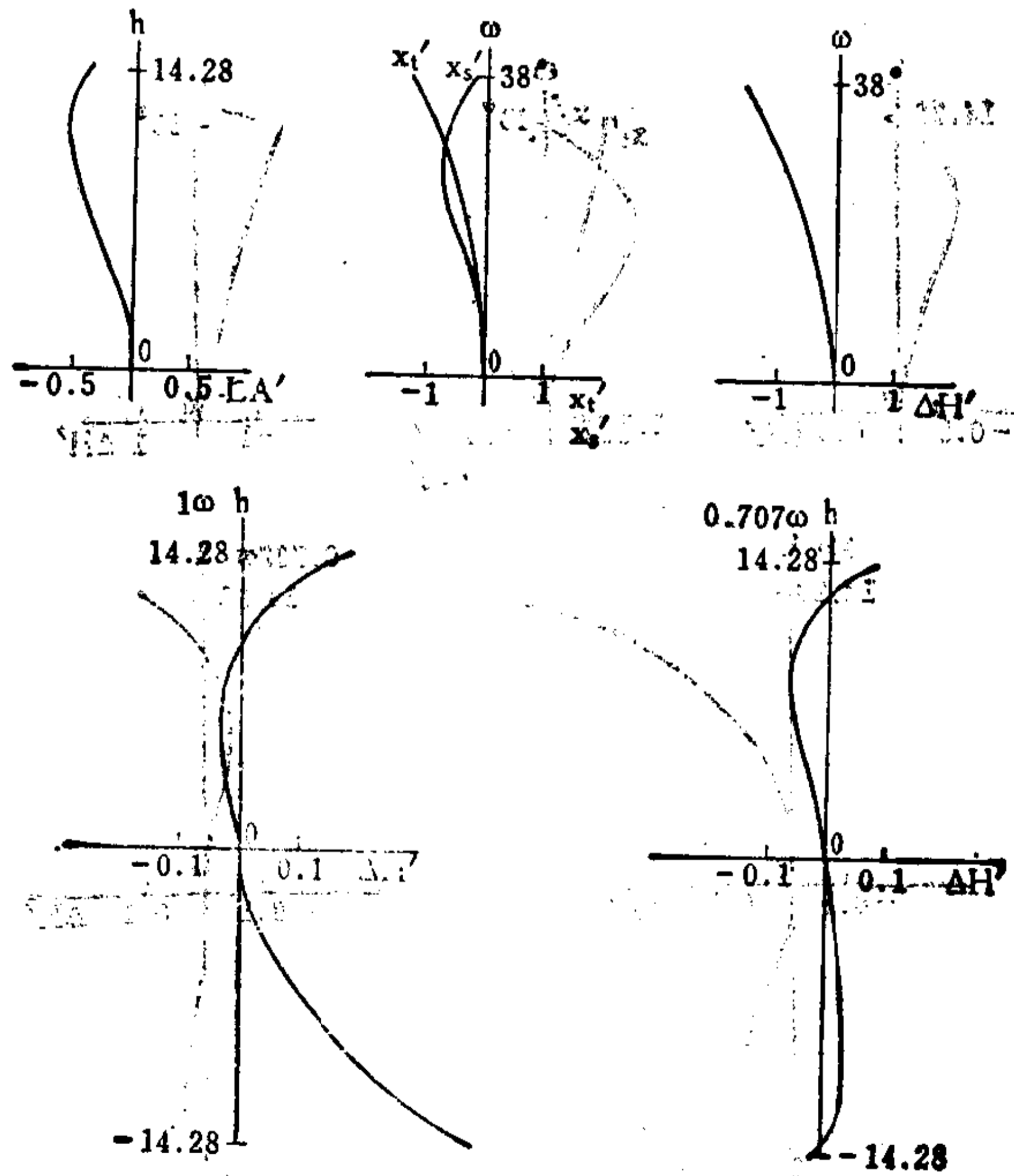
F.A. = ±38°



序号	r	d	n	v	序号	r	d	n	v
1	1712.07	10.04	1.66672	48.82	8	-69.72	0.71		
2	-1043.33	0.71			9	70.88	6.54	1.71300	53.98
3	74.37	5.89	1.62041	60.27	10	209.98	10.36*		
4	35.49	27.18			11	-201.19	6.93	1.74077	27.79
5	1631.61	22.61	1.66892	44.98	12	79.40	3.04		
6	-139.83	2.50			13	∞	8.04	1.71300	53.98
7	-69.76	31.29	1.67790	55.33	14	-62.5			

\*10.36\* = 5.18 + 5.18

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.0583	-0.0052	-0.0069	-0.0902	-0.6316	78.1	-2%
h 或 $\omega$ %	$\Delta A'$	$\Delta H'$	$x'_1$	$x'_2$	$x'_1 - x'_2$	$K'_{1.1}$	$K'_{0.7}$
100	-0.377	-1.563	-1.268	0.140	-1.128	0.291	0.105
70	-0.522	-0.890	0.694	-0.832	-0.138	-0.025	-0.017





编号: 03-02-012

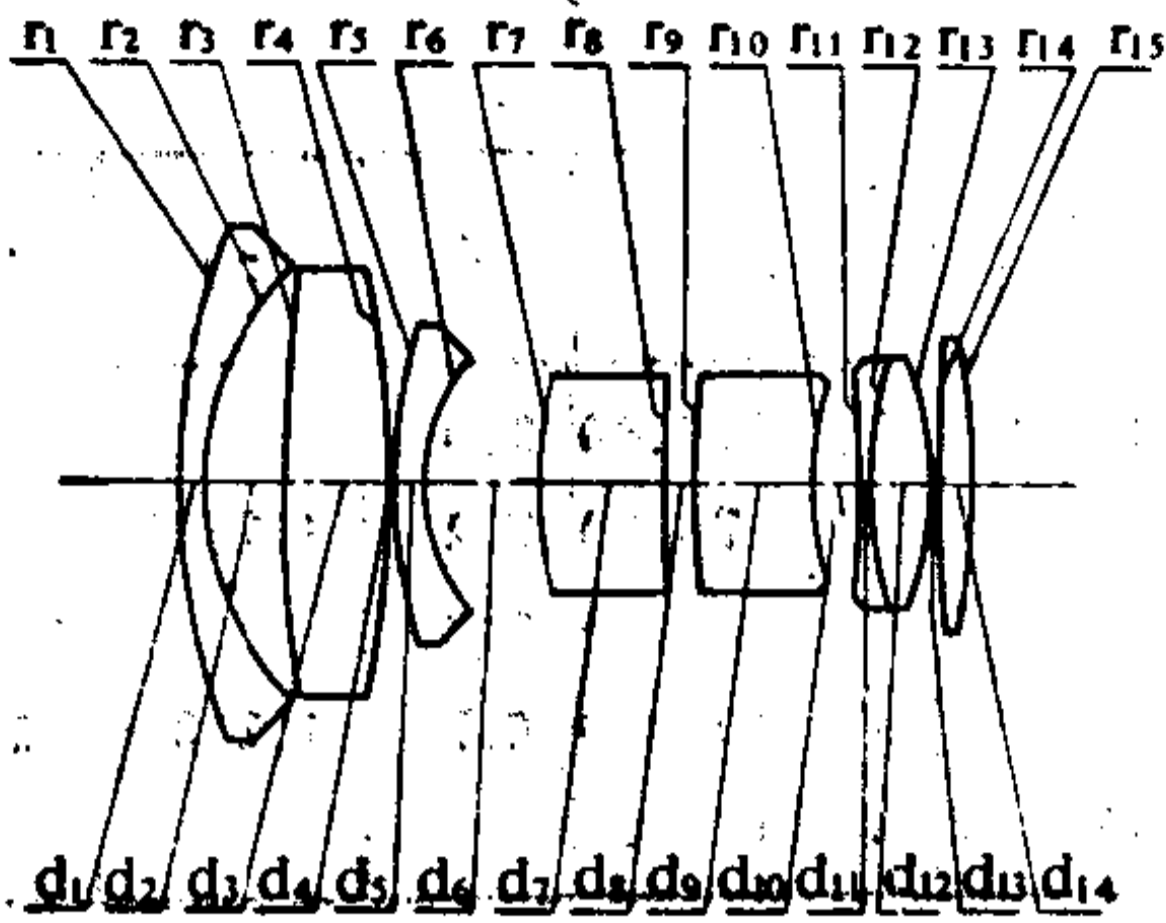
# 大孔径长后截距广角镜头

E.F.L=100

B.F.L=137.5

FNo.=2

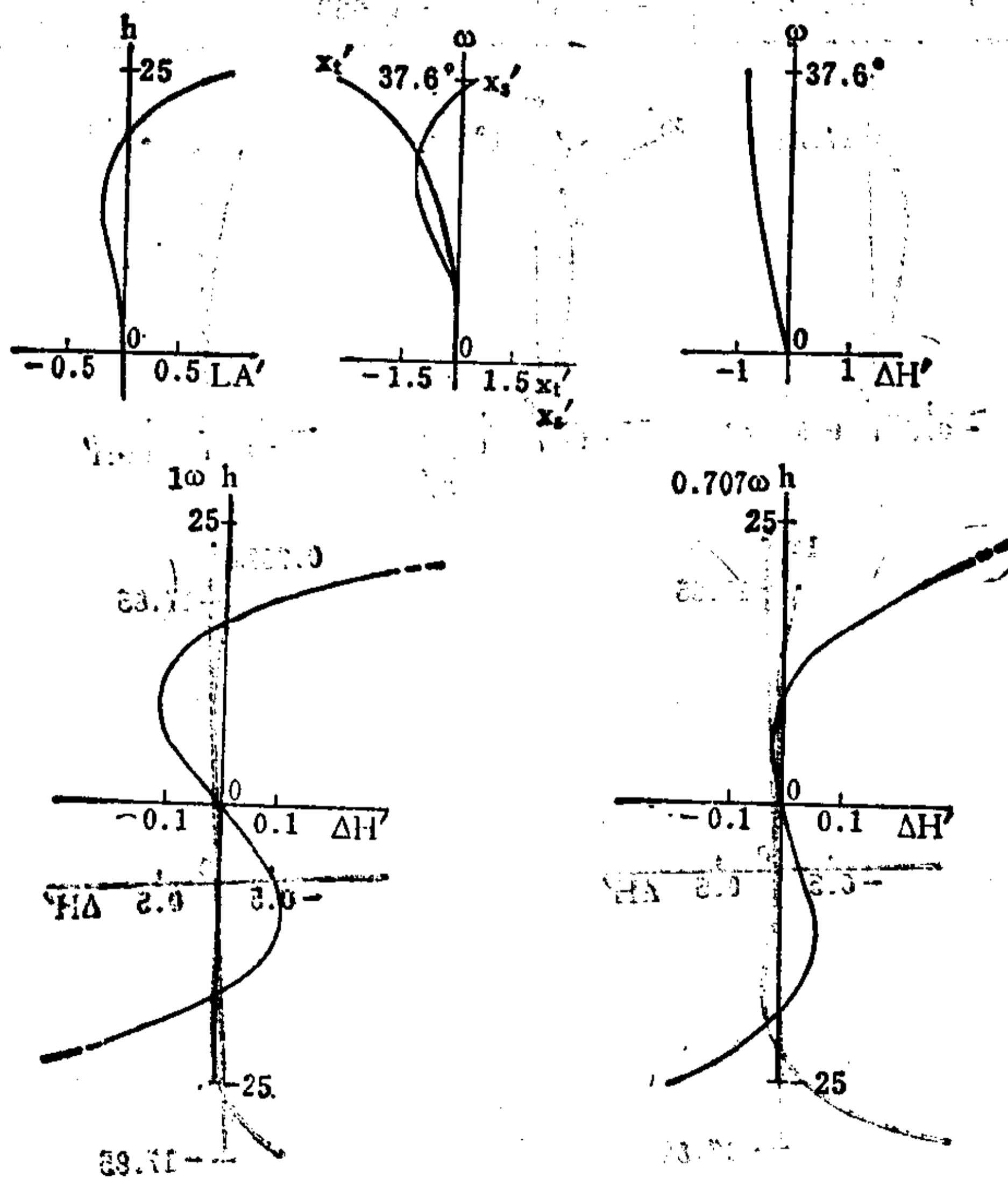
F.A.=±37.6°



序号	r	d	$n_D$	v	序号	r	d	$n_D$	v
1	231.5	8.0	1.64000	60.2	9	270.2	38.1	1.80518	25.4
2	95.8	26.9			10	109.6	15.5		
3	974.8	34.5	1.80610	40.8	11	382.9	4.2	1.80518	25.4
4	-330.0	0.4			12	122.3	19.1	1.80300	46.7
5	202.8	8.5	1.62031	60.3	13	-103.9	0.4		
6	60.2	36.4			14	888.1	10.3	1.80300	46.7
7	118.9	41.7	1.81554	44.5	15	-249.0			
8	7148.9	8.8*							

\* 8.8\* = 4.4 + 4.4

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.1576	0.0433	0.0648	-0.3785	-1.0887	76.1	-1.1%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{T1}$	$K'_{T0.7}$
100	0.876	-0.874	-3.474	0.330	-3.804	0.092	0.034
70	-0.164	-0.790	-0.799	-1.006	0.207	0.144	0.097



编号: 03-02-013

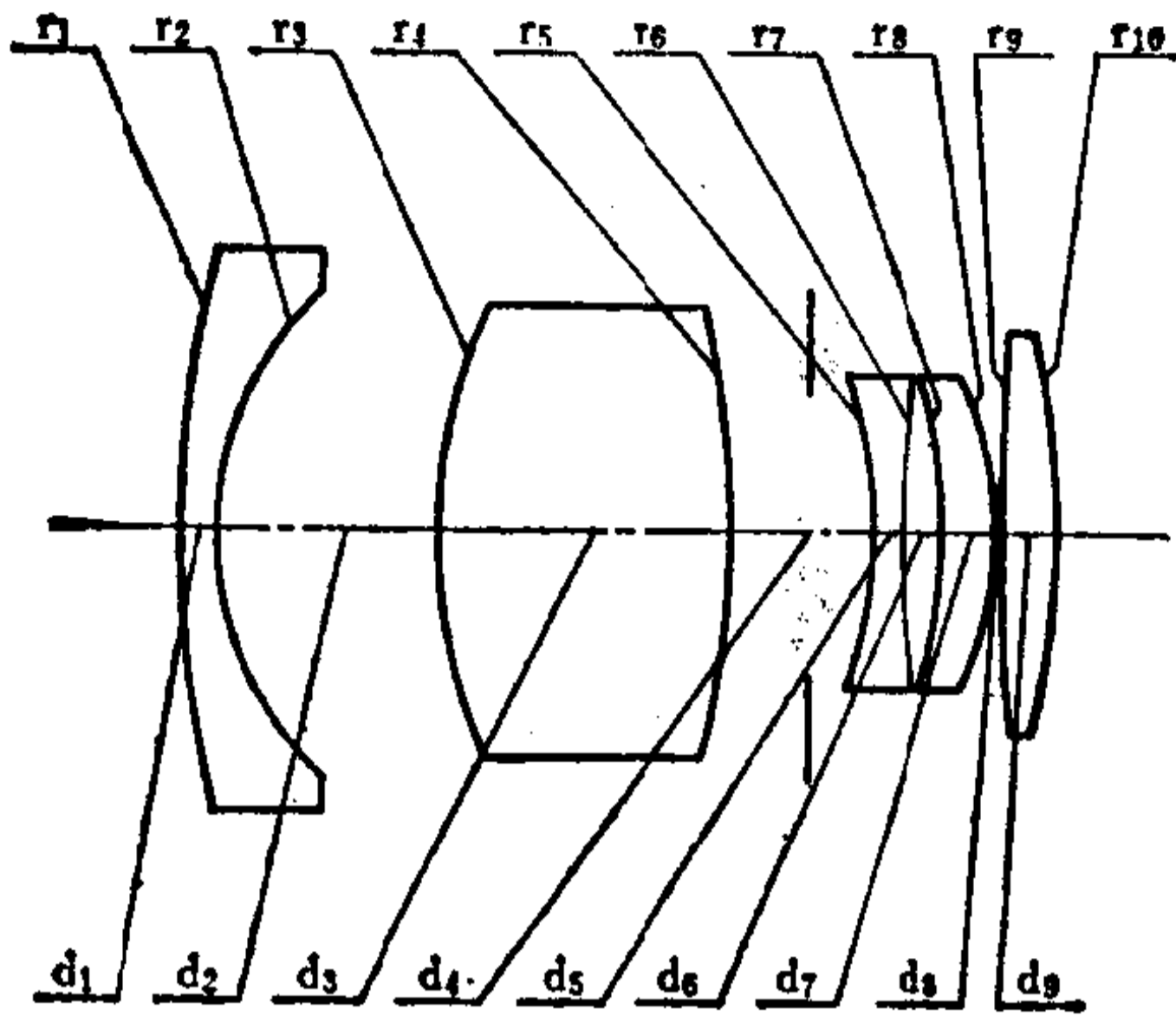
# 广角摄影镜头

E.F.L=100

B.F.L=107.345

FNo.=2.8

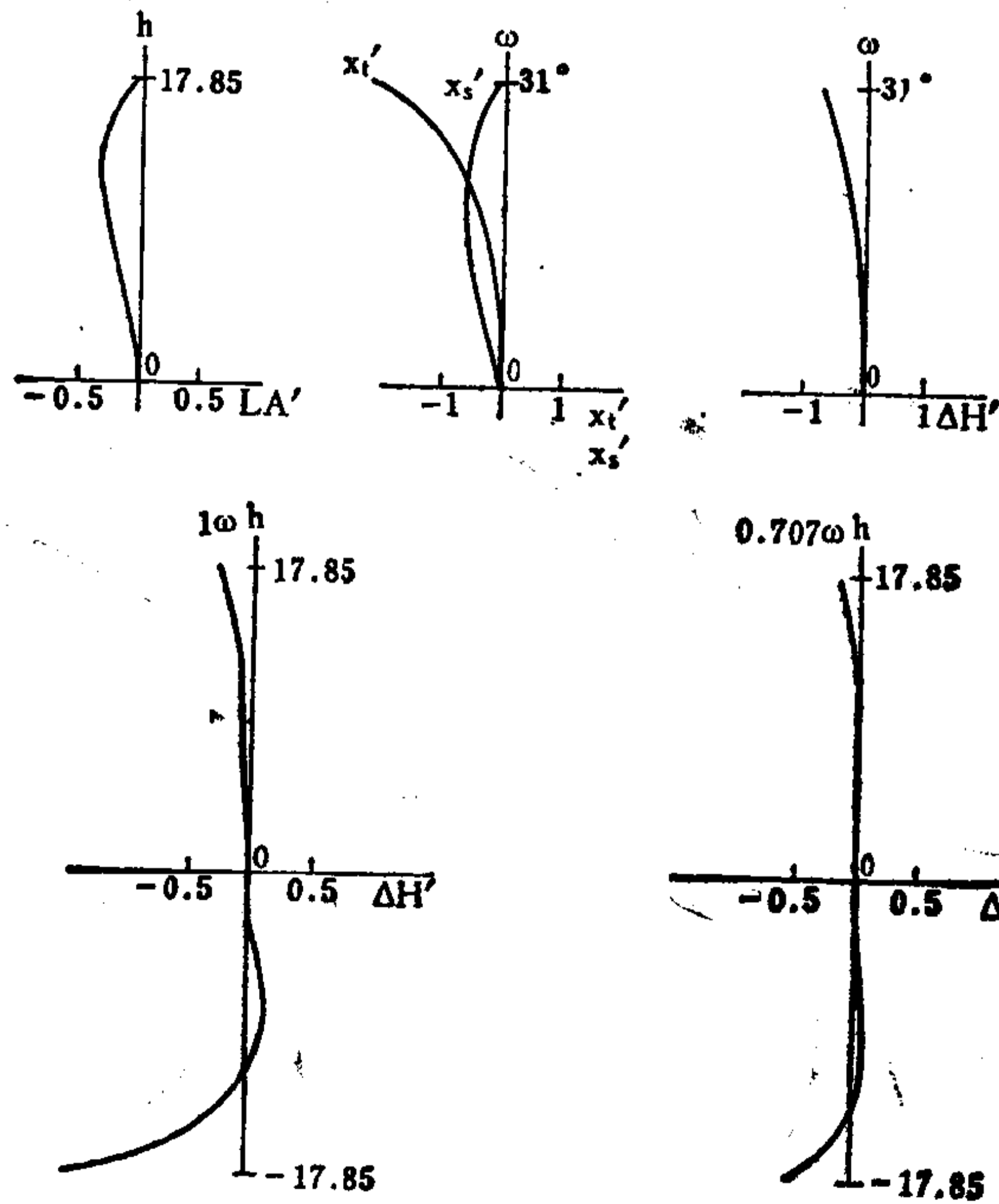
F.A.=±31°



序号	r	d	n <sub>d</sub>	v	序号	r	d	n <sub>d</sub>	v
1	161.10	4.2	1.51680	64.2	6	143.60	3.9		
2	41.90	27.8			7	-76.70	7.2	1.77279	49.5
3	68.10	36.1	1.71300	53.9	8	-46.40	0.3		
4	-133.30	17.5*			9	305.60	6.7	1.71300	53.9
5	-58.30	4.4	1.74077	27.5	10	-109.95			

17.5\* = 8.8 + 8.7

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.0750	0.0538	0.0358	-0.1534	-0.3333	60.1	-1.2%
h 或 $\omega$ %	LA'	$\Delta H'$	$x_t$	$x_s'$	$x_t' - x_s'$	$K_{T1}'$	$K_{T0.7}'$
100	-0.047	-0.713	-2.359	-0.065	-2.294	-0.852	-0.100
70	-0.340	-0.339	-0.553	-0.663	0.110	-0.368	-0.009



编号: 03-02-014

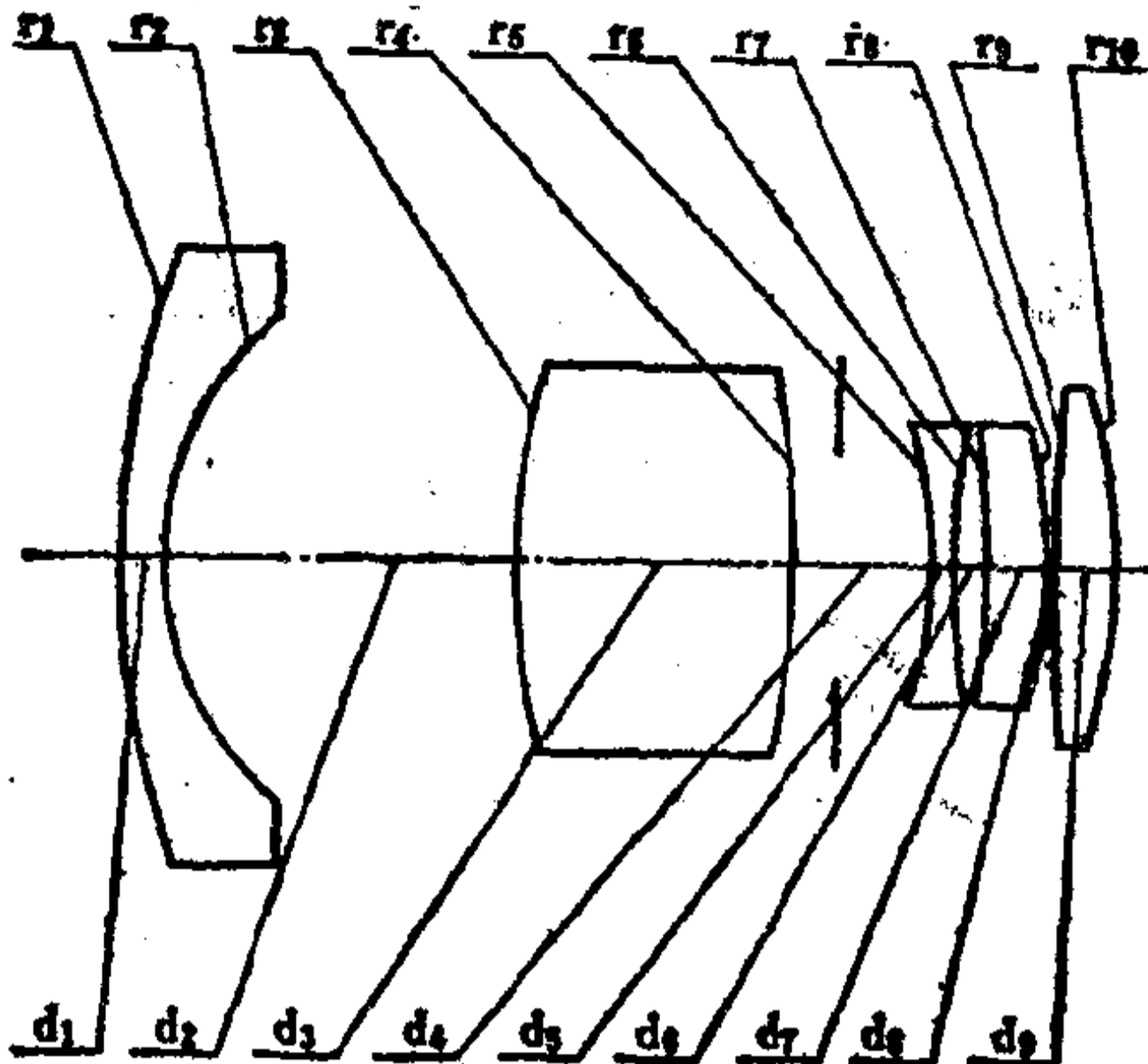
# 广角摄影镜头

E.F.L=100

B.F.L=104.66

FNo.=2.8

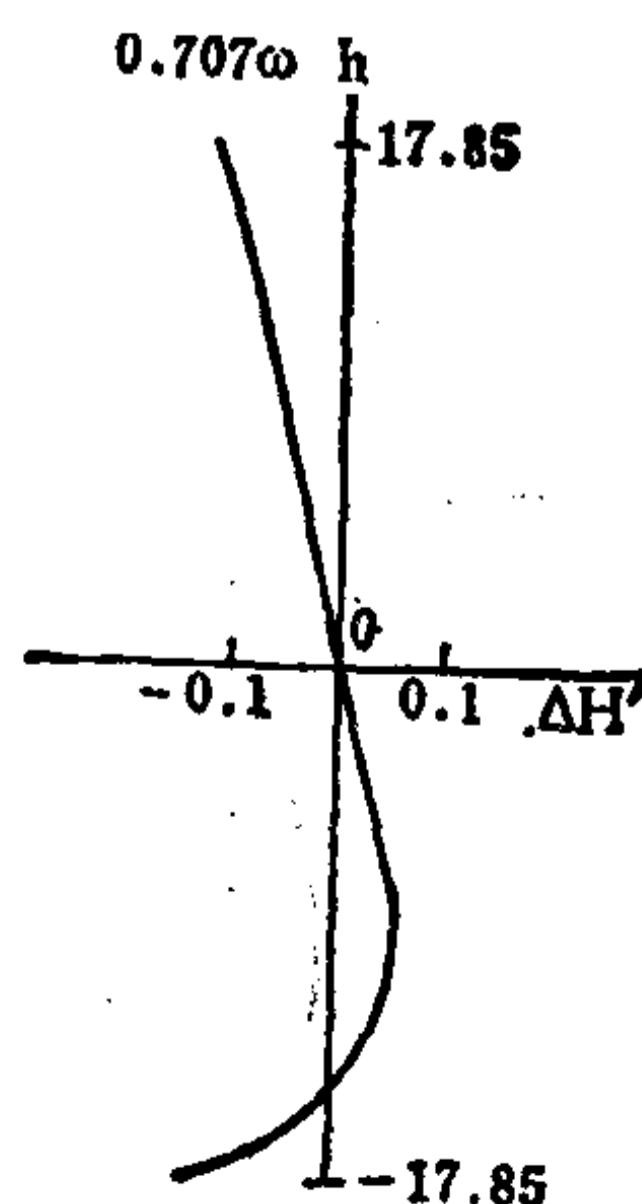
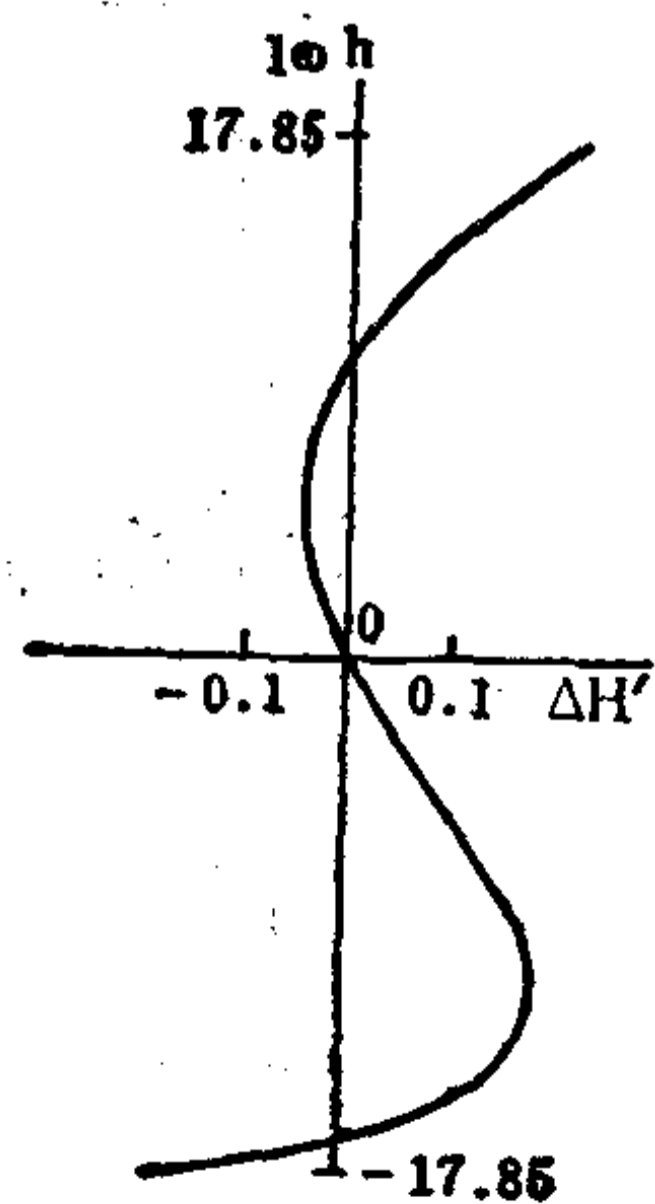
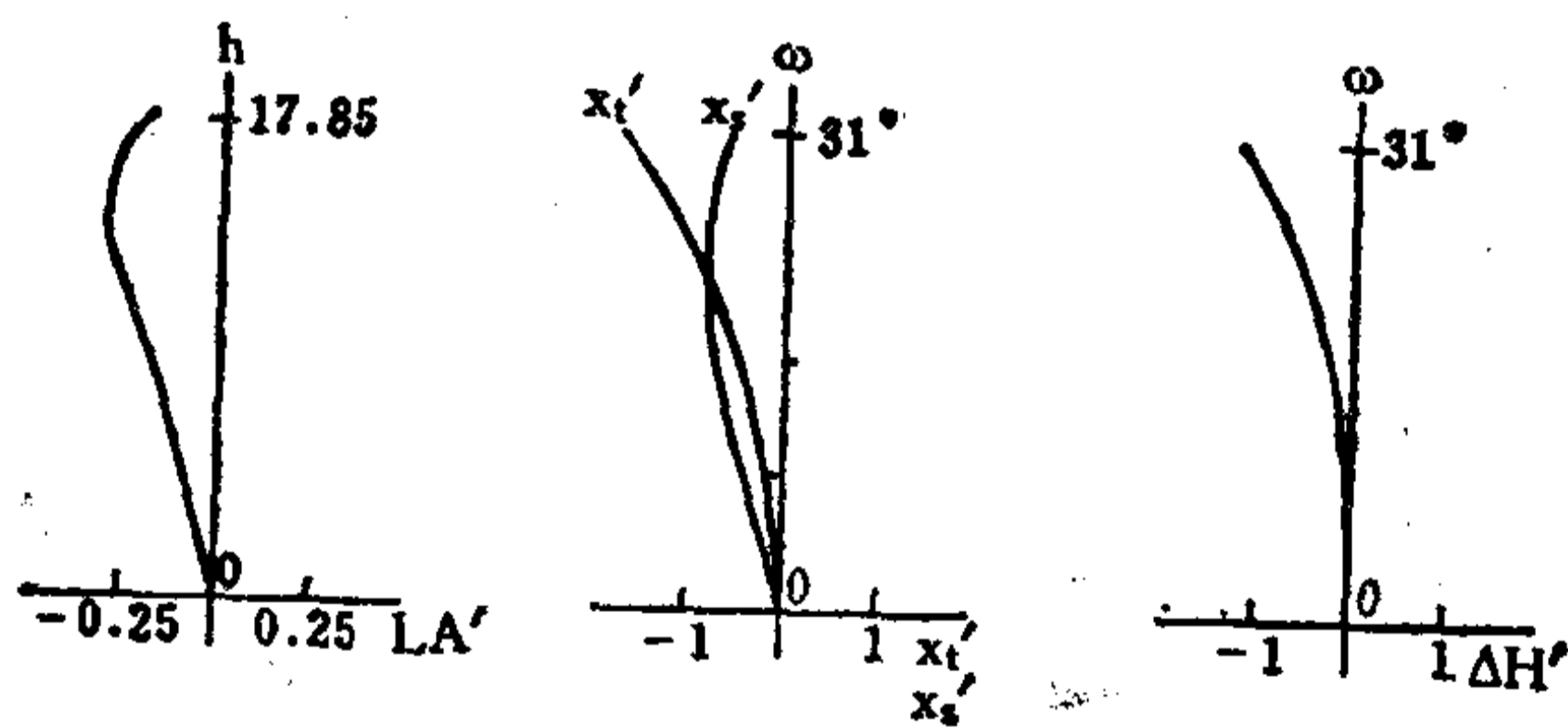
F.A.=±31°



序号	r	d	n <sub>d</sub>	v	序号	r	d	n <sub>d</sub>	v
1	140.10	6.0	1.51454	54.6	6	119.00	4.0		
2	47.50	52.0			7	-146.50	10.5	1.71300	53.9
3	82.50	42.3	1.74443	49.4	8	-67.00	0.1		
4	-135.00	21.0*			9	279.67	9.4	1.62041	60.3
5	-59.50	3.5	1.72825	28.3	10	-91.15			

21.0\* = 10.0 + 11.0

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.0551	-0.0069	0.0175	-0.1628	-0.4129	60.1	-1.9%
h 或 $\omega$ %	LA'	$\Delta H'$	$x_t$	$x_s$	$x_t - x_s$	$K_{T1}$	$K'_{T0.7}$
100	-0.210	-1.161	-1.816	-0.595	-1.221	0.022	0.120
70	-0.286	-0.456	-0.861	-0.907	0.046	-0.125	-0.013



编号: 03-02-015

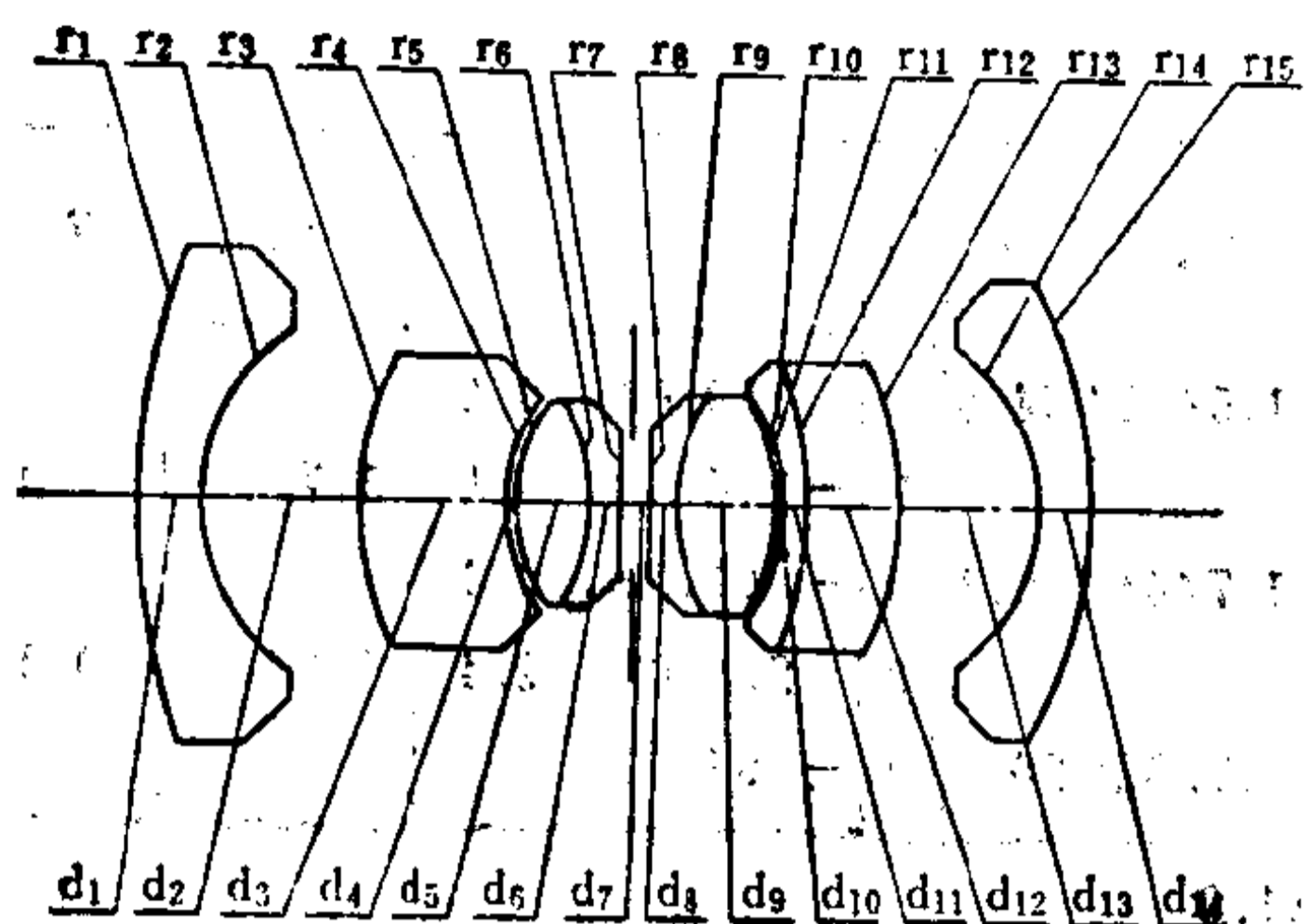
# 广 角 物 镜

E.F.L=100

B.F.L=31.65

FN<sub>0</sub> = 4

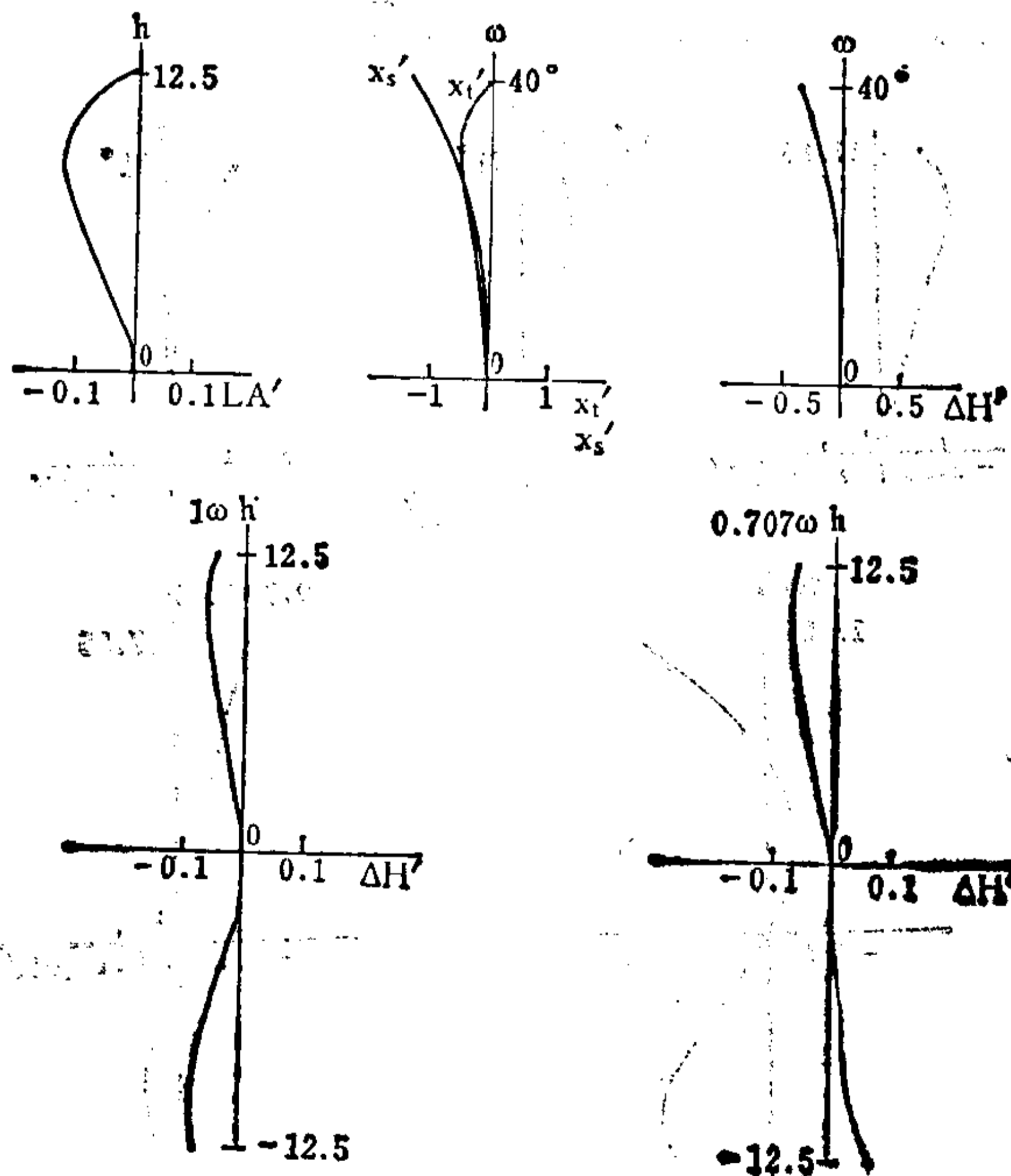
F.A. = ±40°\*\*



序号	r	d	n <sub>d</sub>	v <sub>d</sub>	序号	r	d	n <sub>d</sub>	v <sub>d</sub>
1	185.00	15.00	1.55232	63.5	9	42.00	24.00	1.65830	57.3
2	49.00	36.30			10	-49.50	2.00		
3	71.00	35.00	1.74400	44.8	11	-39.15	5.00	1.71736	29.5
4	39.25	1.20			12	-100.00	22.00	1.71300	53.8
5	40.95	19.00	1.67790	55.2	13	-65.91	33.00		
6	-48.30	7.10	1.57500	41.5	14	-45.30	12.00	1.71300	53.8
7	5000.00	6.24*			15	-105.06			
8	∞	6.00	1.51680	64.2					

6.24\* = 3.00 + 3.24

	ΣS <sub>1</sub>	ΣS <sub>2</sub>	ΣS <sub>3</sub>	ΣS <sub>4</sub>	ΣS <sub>5</sub>	HI	QP(1ω)
	-0.0140	-0.0093	-0.0142	-0.0125	-0.0694	83.9	-0.5%
h 或 ω%	LA'	ΔH'	x <sub>i</sub> '	x <sub>s</sub> '	x <sub>i</sub> ' - x <sub>s</sub> '	K <sub>T1</sub>	K <sub>T0.7</sub>
100	-0.003	-0.410	0.017	-1.410	1.427	-0.054	-0.063
70	-0.126	-0.126	-0.472	-0.586	0.114	0.009	-0.022



编号: 03-02-016

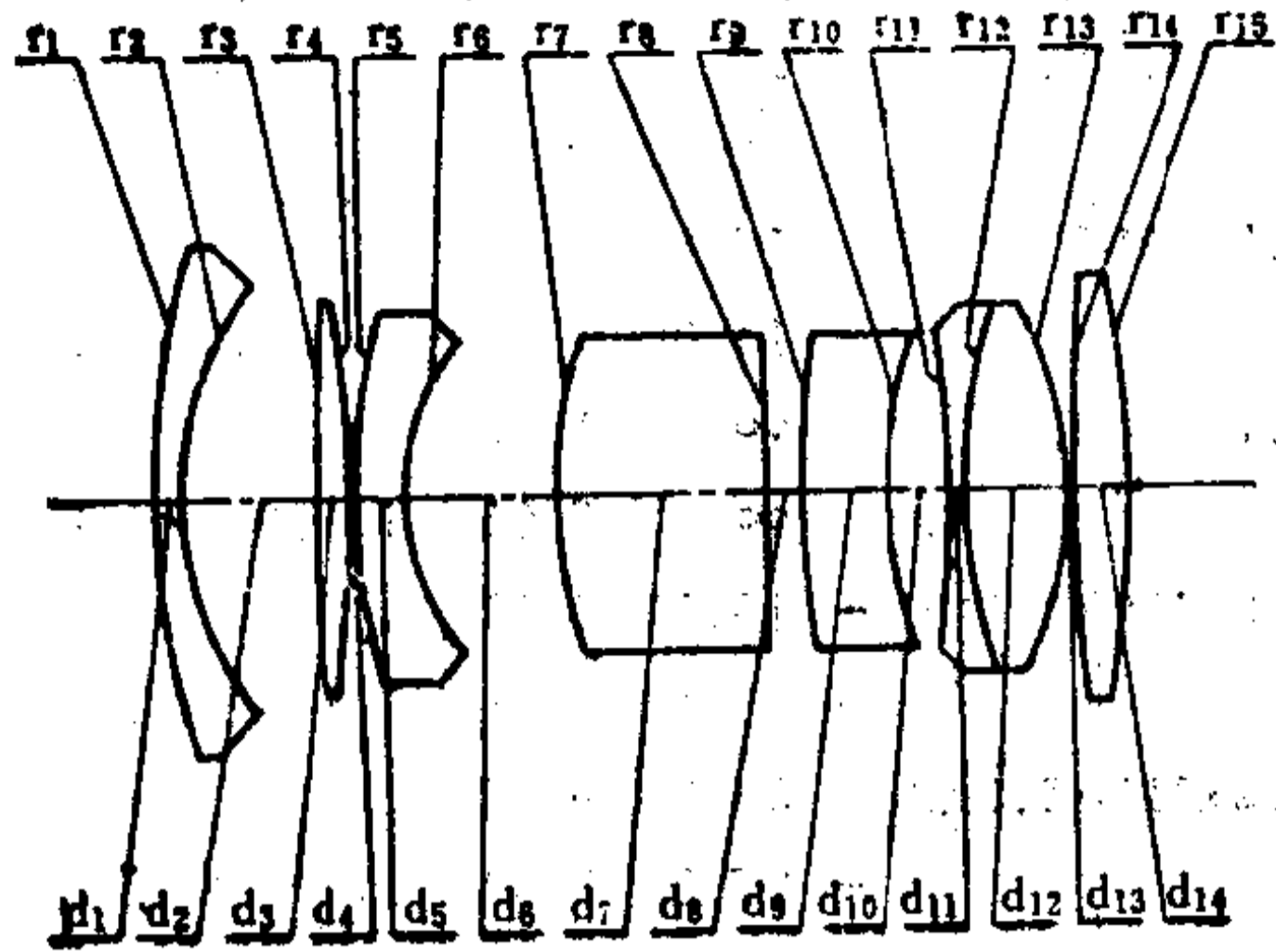
# 大孔径长后截距广角镜头

E.F.L = 100

B.F.L = 136.16

FNo. = 2

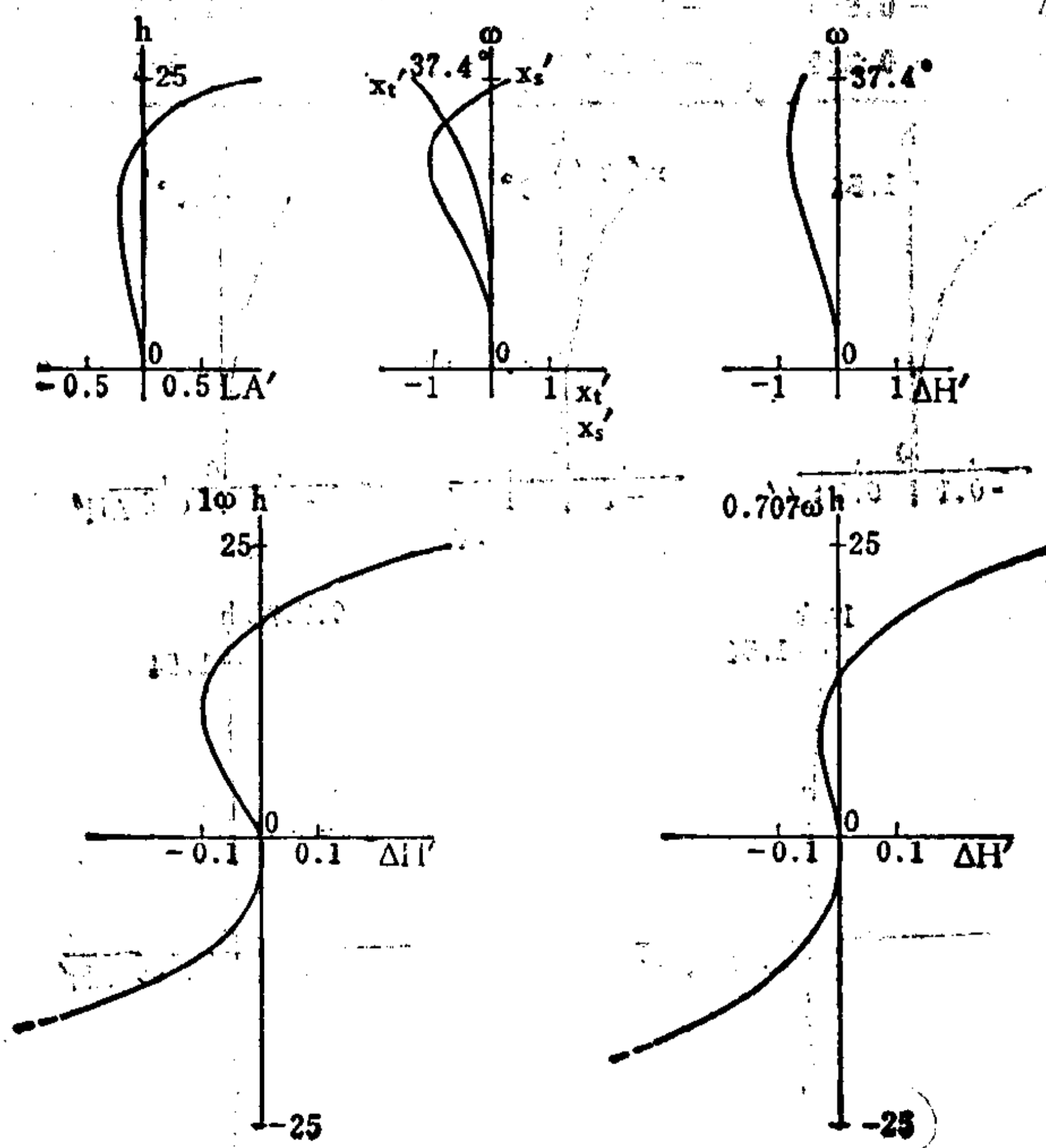
F.A. = ±37.4°



序号	r	d	n	v	序号	r	d	n	v
1	228.1	6.9	1.65160	58.6	9	252.6	22.6	1.80518	25.4
2	91.5	34.7			10	113.9	15.7		
3	771.9	9.6	1.80740	35.4	11	357.9	4.2	1.80518	25.4
4	-334.4	0.4			12	145.6	26.2	1.74100	52.7
5	211.7	14.0	1.54771	62.9	13	101.2	0.4		
6	60.9	37.6			14	543.8	14.5	1.81534	44.5
7	123.5	54.8*	1.78800	47.5	15	288.3			
8	-3915.5	8.8							

54.8\* = 40.0 + 14.8

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.142	-0.082	0.112	-0.441	-1.093	76.1	-0.76%
h 或 $\omega$ %	LA'	$\Delta H'$	$x_t^2$	$x_s^2$	$x_t^2 - x_s^2$	$K_{T1}^2$	$K_{T0.7}^2$
100	0.976	-0.576	-1.440	0.330	-1.770	-0.627	-0.302
70	-0.152	-0.761	-0.358	-1.091	0.733	-0.235	-0.123





编号: 03-02-017

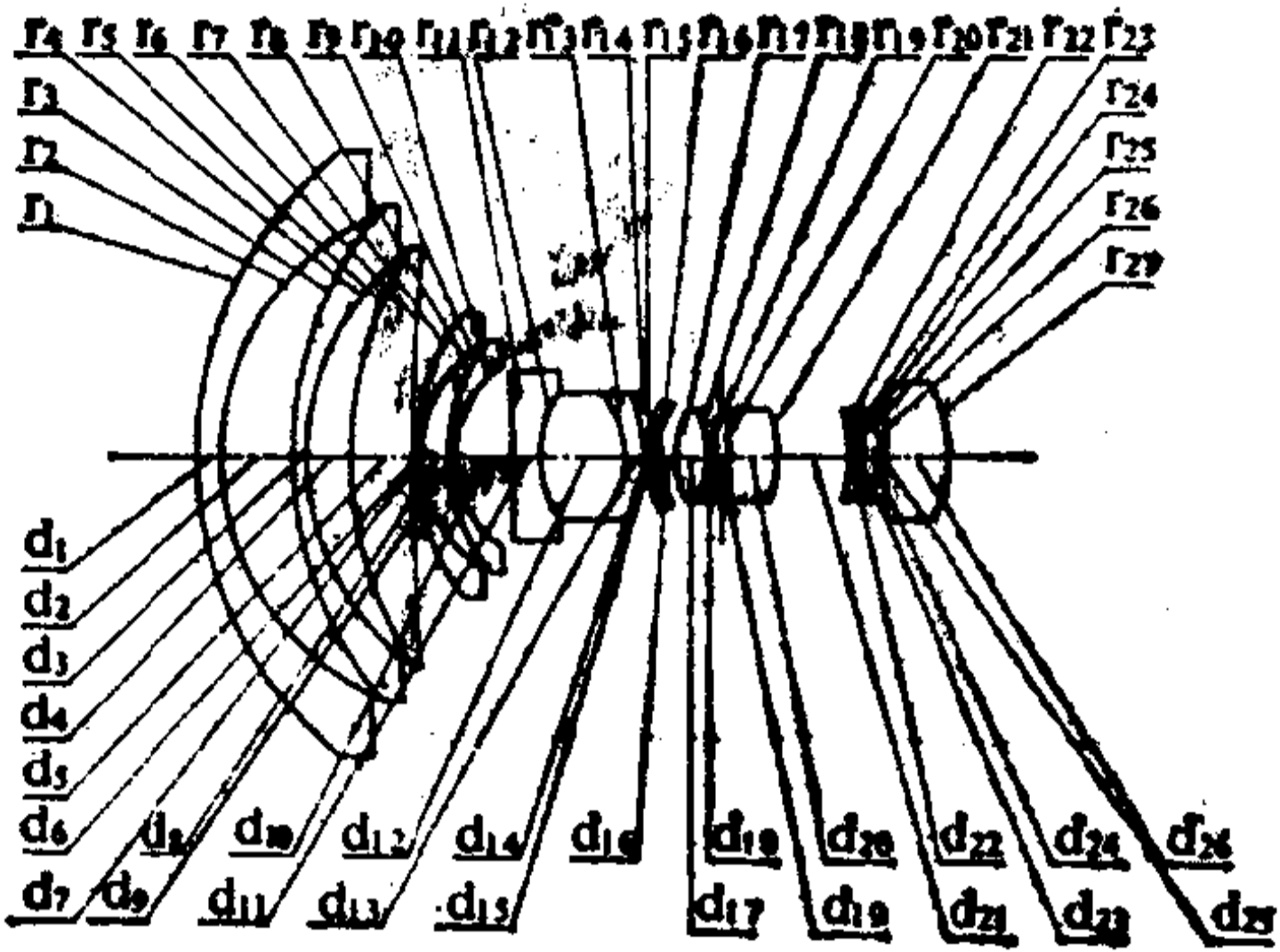
### 反远距型广角物镜

E.F.L=15.4

B.F.L=38.06

FNo.=5

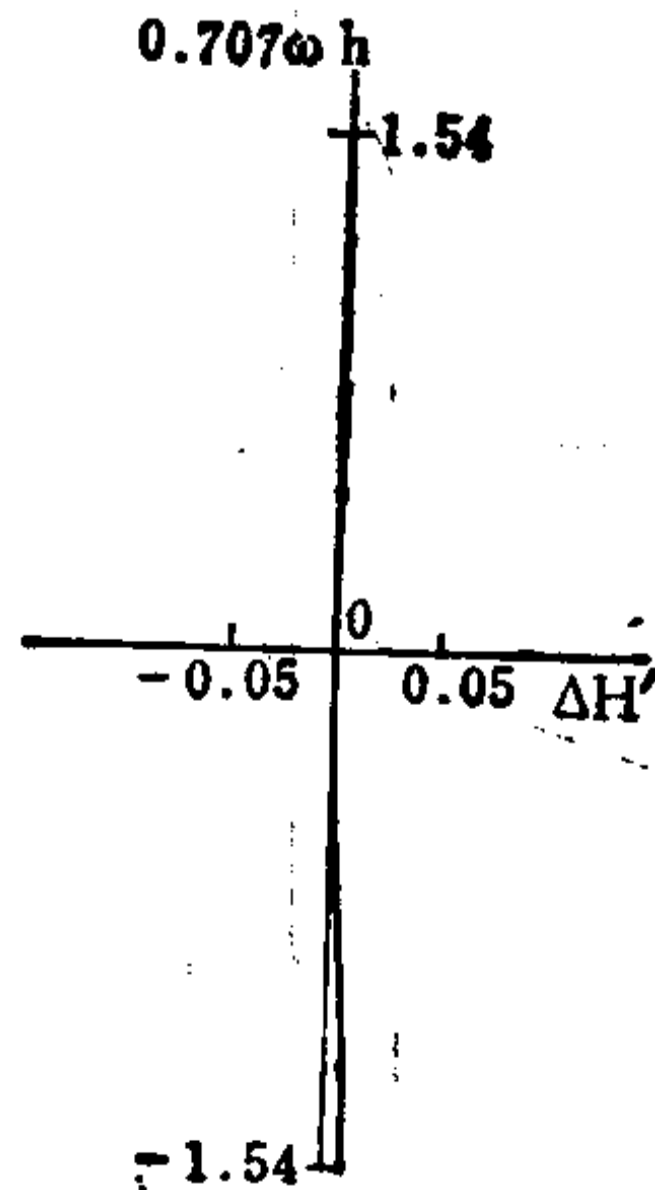
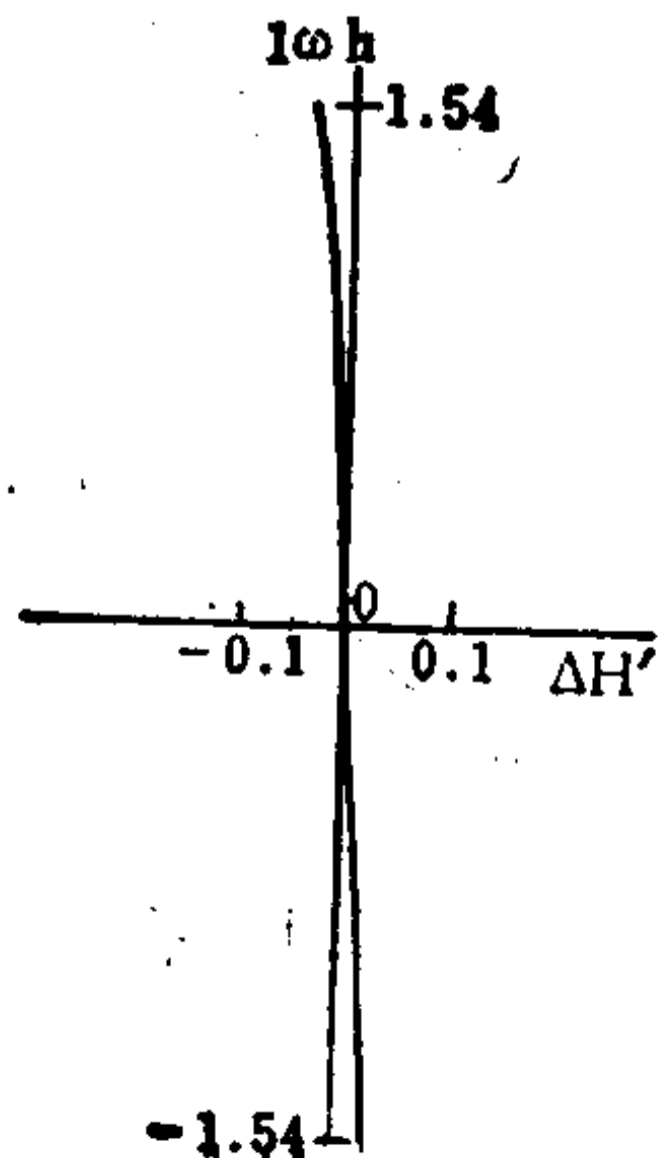
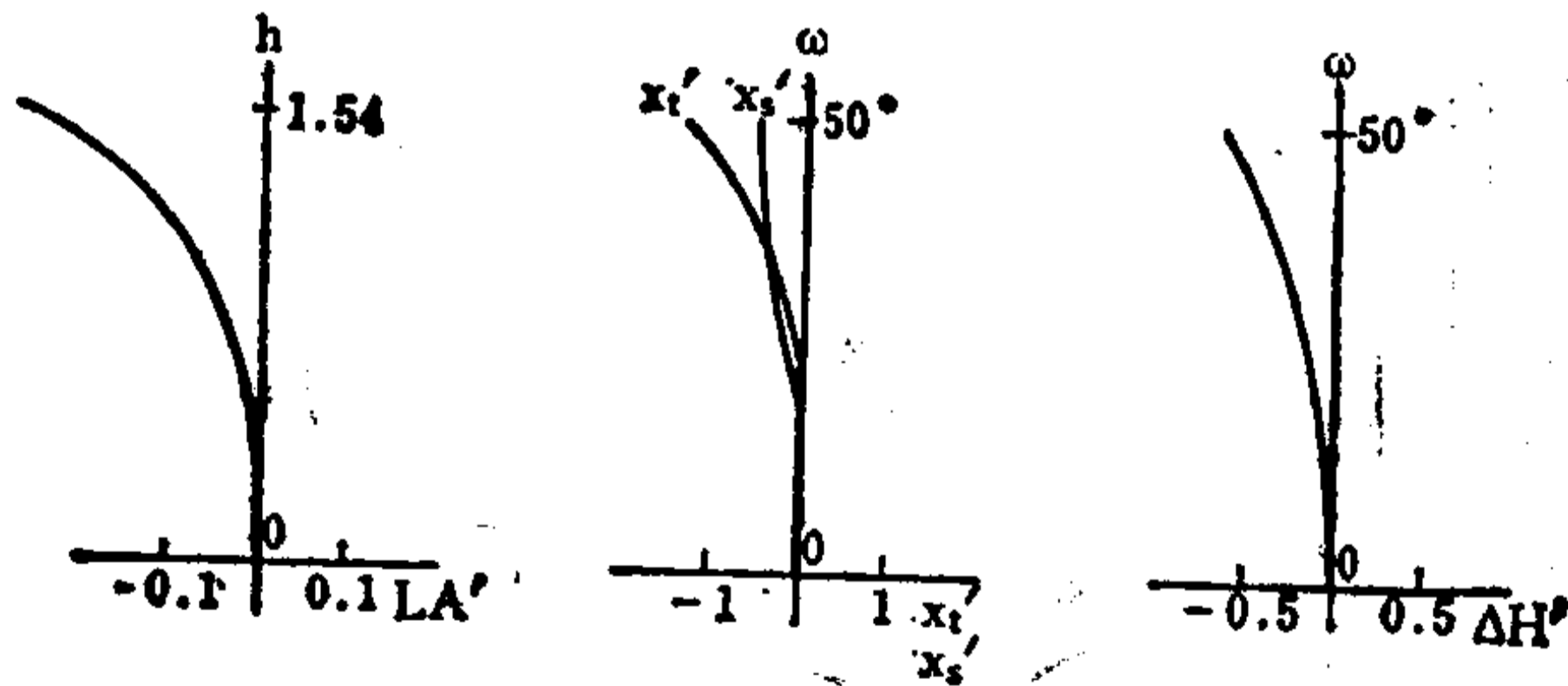
F.A.=±50°\*\*



序号	r	d	nd	vd	序号	r	d	nd	vd
1	46.00	3.10	1.73200	53.2	15	20.00	1.00	1.69680	55.6
2	30.90	7.40			16	8.50	2.30		
3	43.60	2.00	1.73200	53.2	17	12.80	3.80	1.58065	37.1
4	30.60	4.80			18	-14.00	1.00	1.58313	59.3
5	45.90	7.60	1.70000	47.9	19	∞	1.70*		
6	310.50	0.10			20	∞	5.62	1.58065	37.1
7	24.20	1.00	1.84110	43.3	21	-12.10	2.30		
8	14.90	3.00			22	-13.80	0.65	1.86074	23.1
9	20.90	1.00	1.84110	43.3	23	34.30	0.65		
10	13.90	6.60			24	-77.00	2.00	1.44268	67.2
11	-255.00	2.80	1.84110	43.3	25	-10.80	0.10		
12	12.20	10.00	1.54072	47.2	26	466.00	7.60	1.52000	70.1
13	-10.80	2.00	1.53996	59.7	27	-19.68			
14	-18.90	0.20							

1.70\* = 0.85 + 0.85

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.0027	0.0038	-0.0008	-0.0155	-0.1157	18.5	-3.5%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_i$	$x'_s$	$x'_i - x'_s$	$K'_{T1}$	$K'_{T0.7}$
100	-0.286	-0.650	-1.264	-0.487	-0.777	-0.0025	-0.0009
70	-0.083	-0.329	-0.267	-0.377	0.110	0.0012	0.0012



编号: 03-02-018

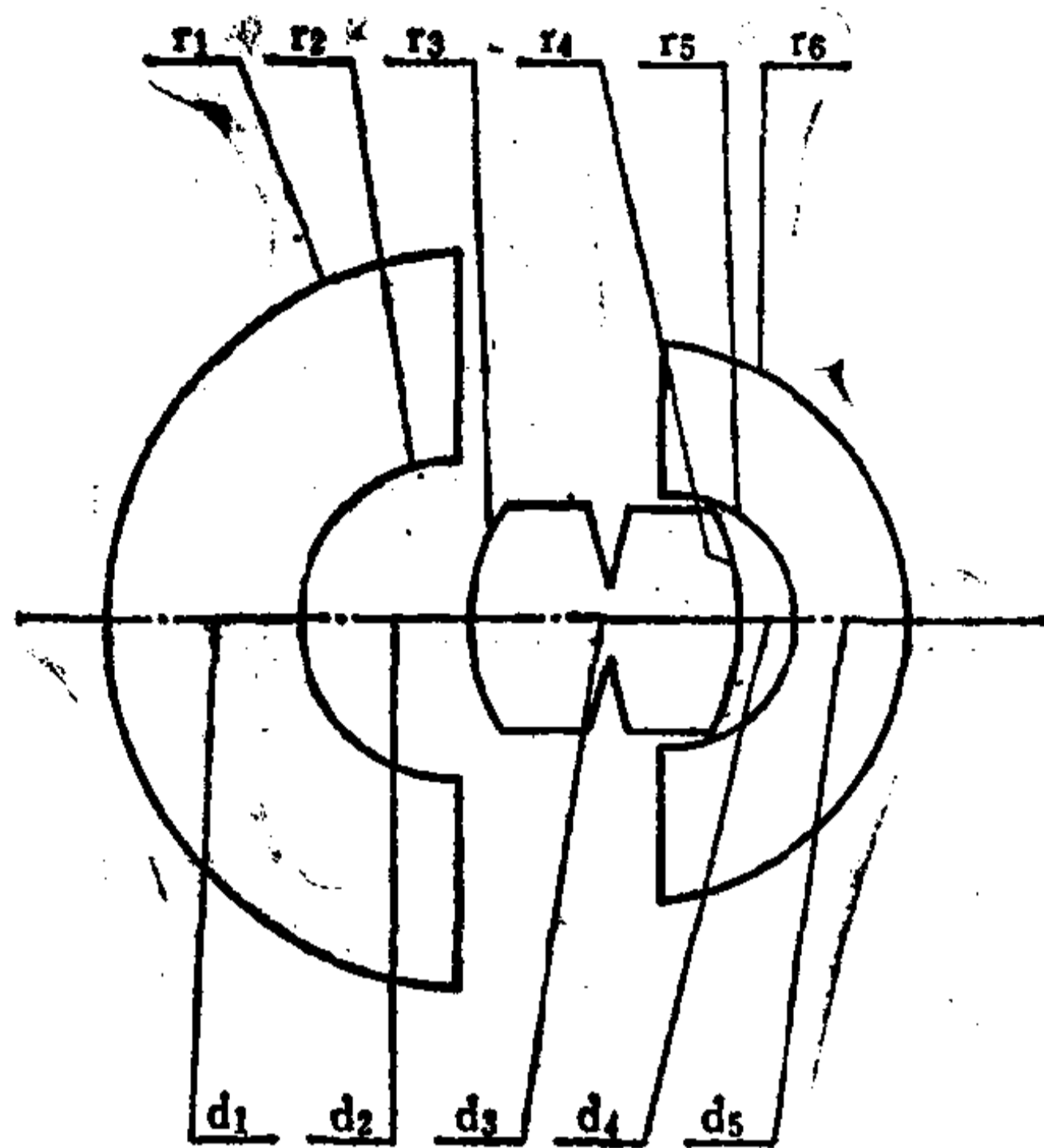
# 三片式广角物镜

E.F.L = 1

B.F.L = 0.90299

FNo. = 8

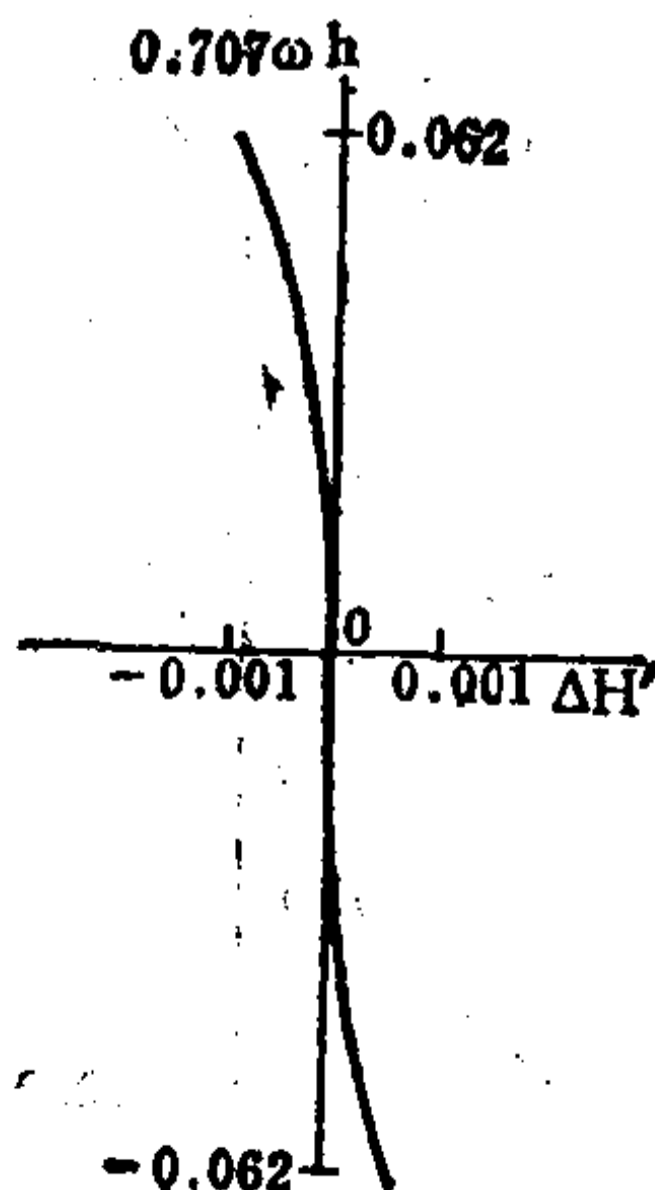
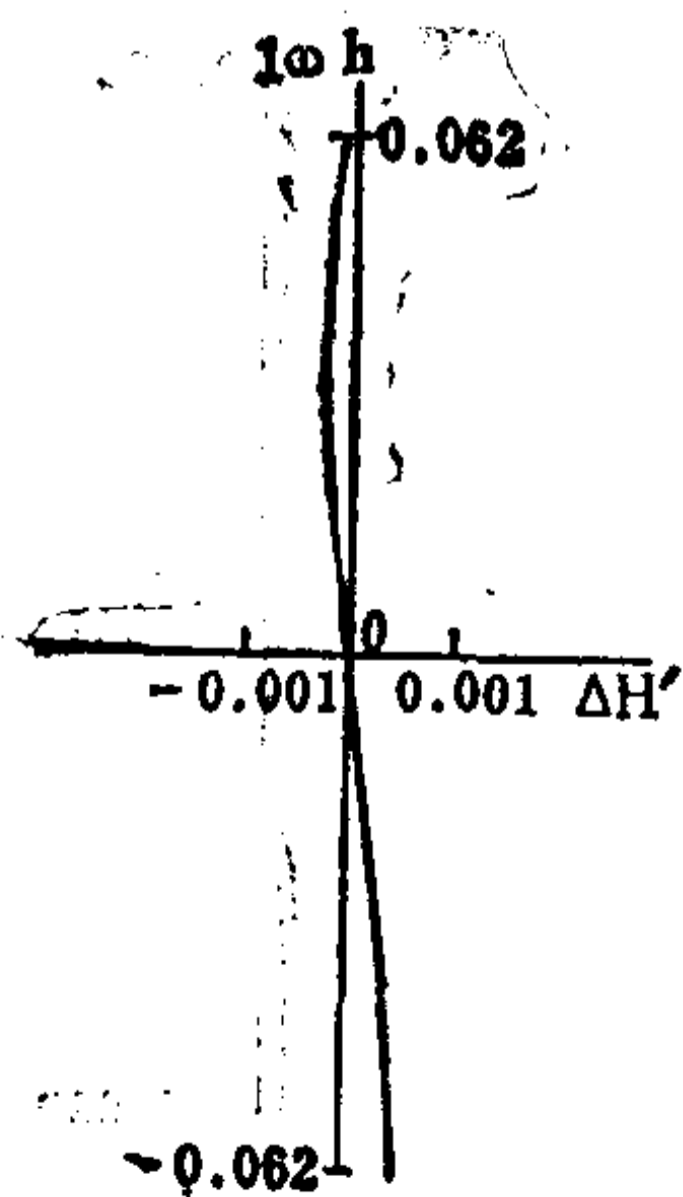
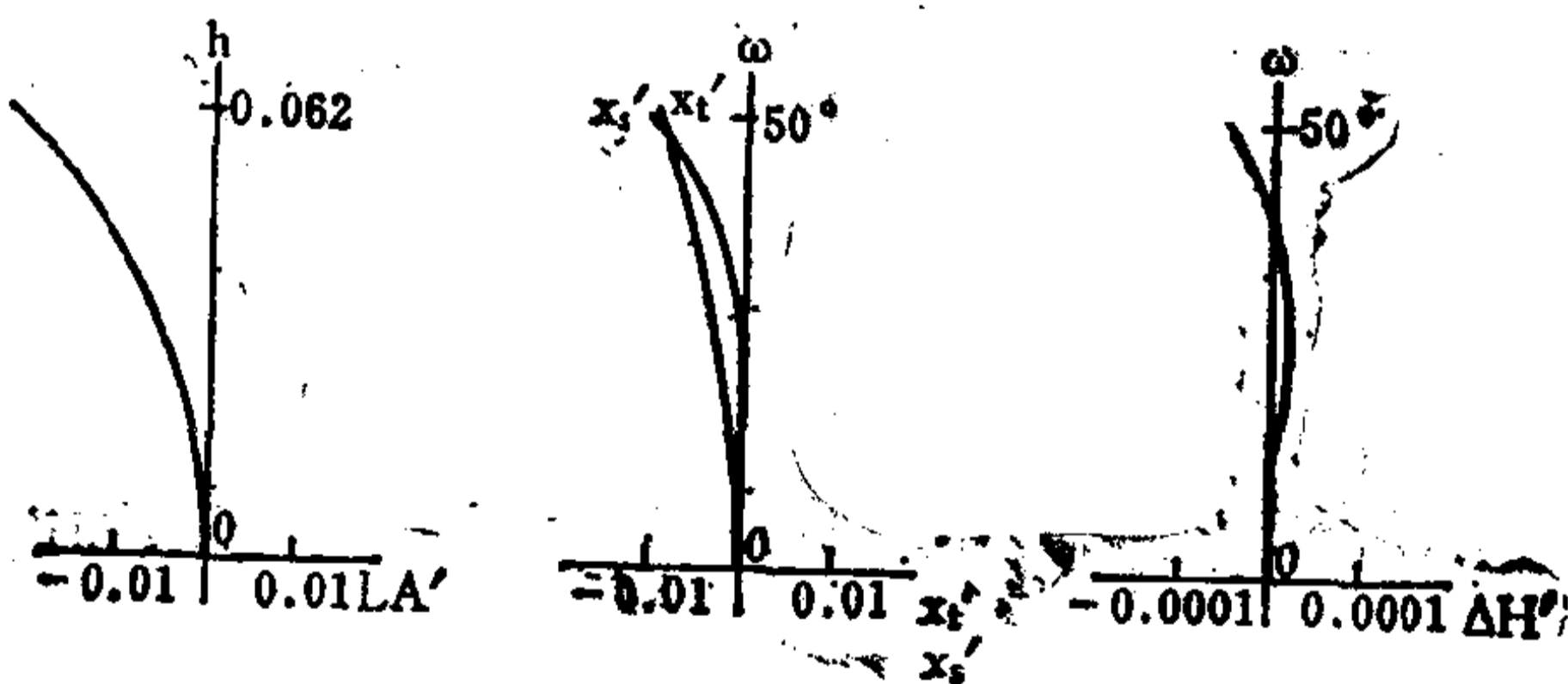
F.A. = ±50°\*\*



序号	r	d	n <sub>d</sub>	v <sub>d</sub>	序号	r	d	n <sub>d</sub>	v <sub>d</sub>
1	0.7760	0.5319	1.80518	25.46	4	-0.5672	0.1603		
2	0.2562	0.1802			5	-0.2419	0.3491	1.80518	25.46
3	0.3779	0.5099*	1.71300	53.89	6	-0.5989			

0.50990\* = 0.25495 + 0.25495

	ΣS <sub>1</sub>	ΣS <sub>2</sub>	ΣS <sub>3</sub>	ΣS <sub>4</sub>	ΣS <sub>5</sub>	HI	QP(1ω)
	-0.000170	-0.000039	-0.000064	0.000069	0.000003	1.2	-0.004%
h 或 ω%	LA'	ΔH'	x <sub>1</sub> '	x <sub>2</sub> '	x <sub>1</sub> ' - x <sub>2</sub> '	K <sub>T1</sub> '	K <sub>T0.7</sub> '
100	-0.024	-0.00005	-0.010	-0.011	0.001	0.00026	0.00013
70	-0.012	0.00001	-0.005	-0.001	-0.004	-0.00022	-0.00012



编号: 03-02-019

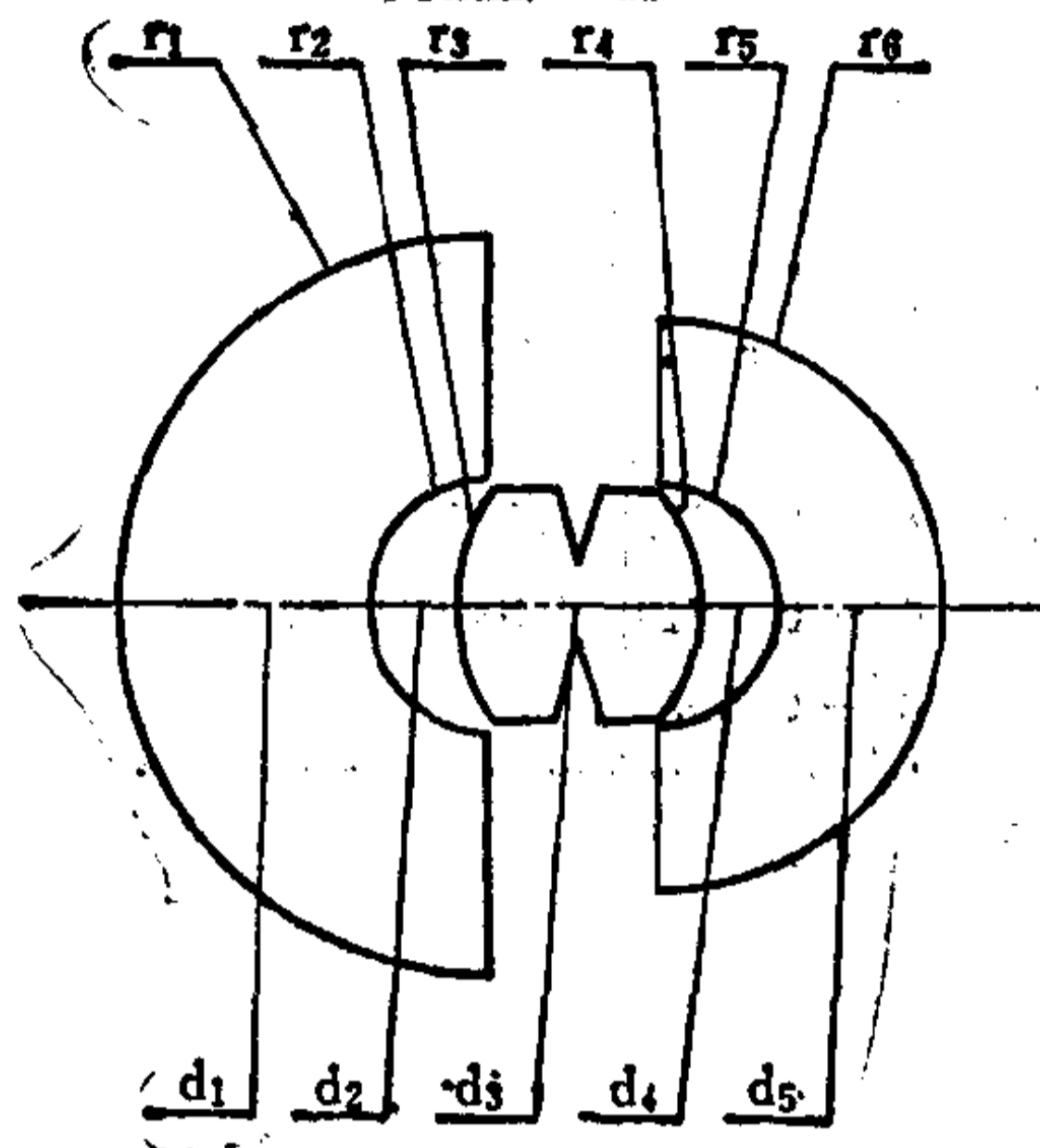
### 三片式超广角物镜

E.F.L=1

B.F.L=0.5265

FNo.=8

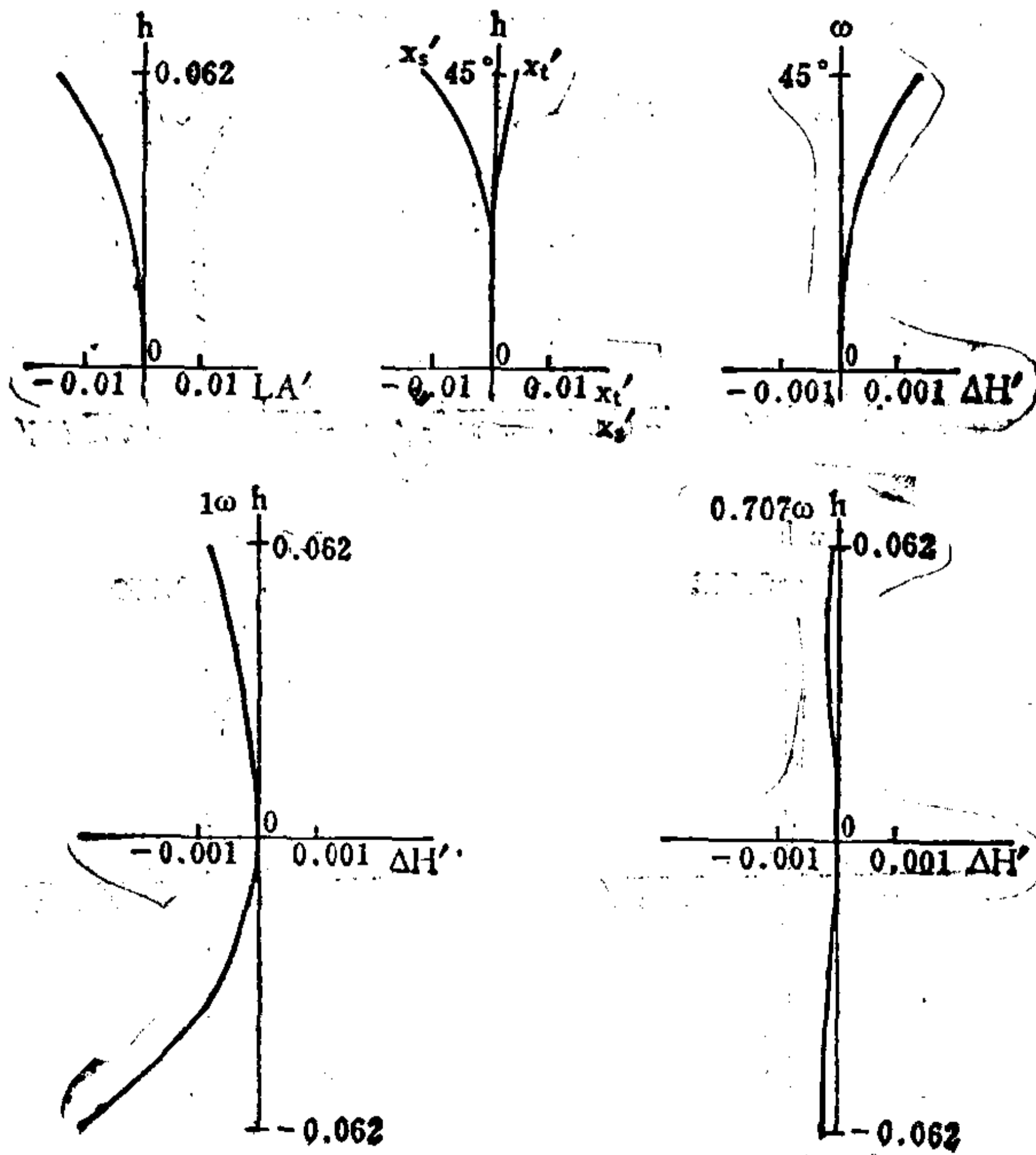
F.A.=±45°



序号	r	d	nd	vd	序号	r	d	nd	vd
1	0.6324	0.3286	1.78470	26.08	4	-0.4244	0.0919		
2	0.2750	0.2892			5	-0.2073	0.1965	1.78470	26.08
3	0.3327	0.4714*	1.64350	57.96	6	-0.4805			

$0.4714^* = 0.2357 + 0.2357$

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.000094	0.000029	-0.000012	0.000023	0.000132	1	0.13%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_1$	$x'_2$	$x'_1 - x'_2$	$K_{f1}$	$K_{f0.7}$
100	-0.0143	0.0013	0.0026	-0.0127	0.0153	-0.0018	-0.0009
70	-0.0066	0.0005	0.0009	-0.0020	0.0029	-0.0001	-0.0001





编号: 03-02-020

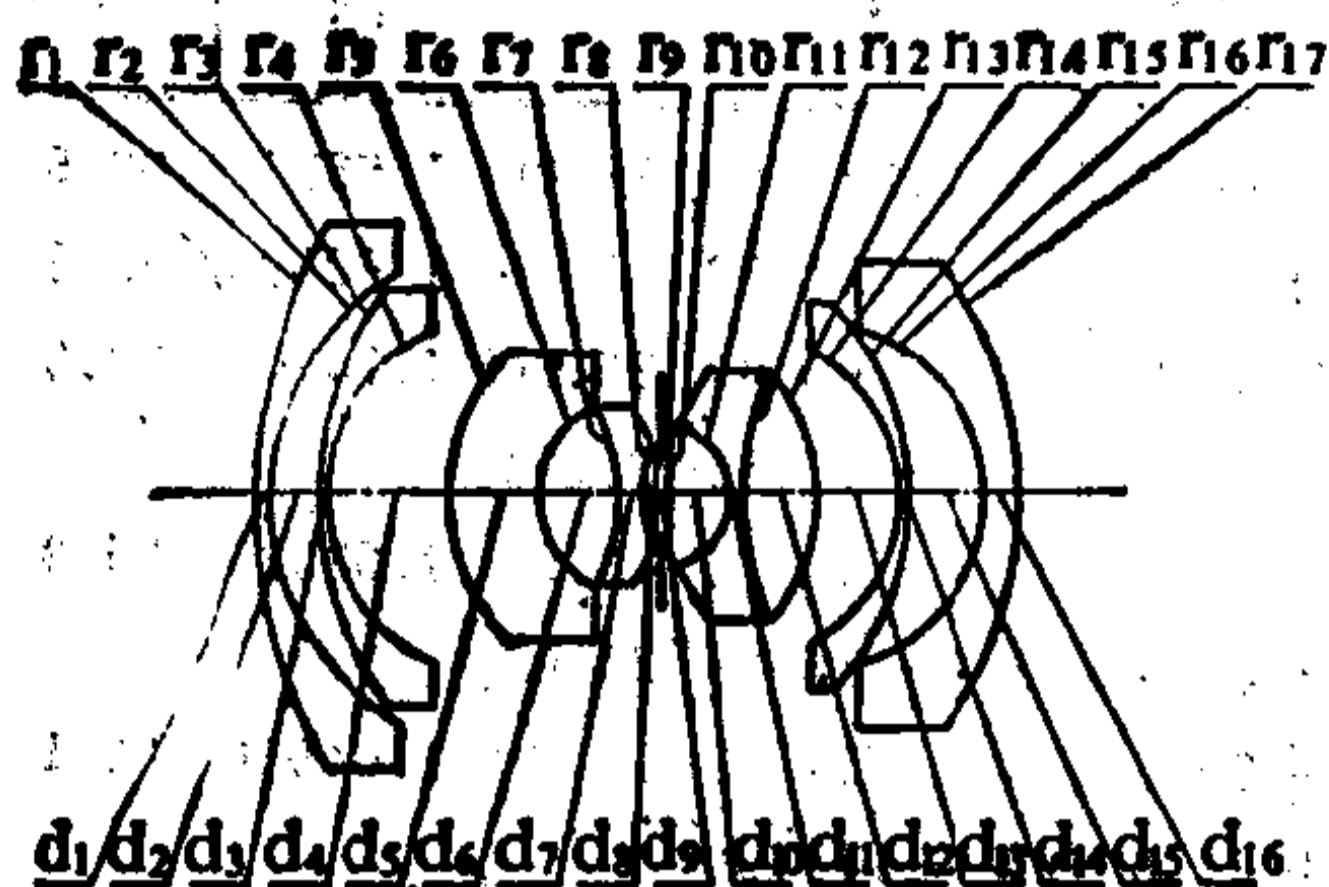
# 广 角 物 镜

E.F.L=100

B.F.L=28.98

FNo.=4

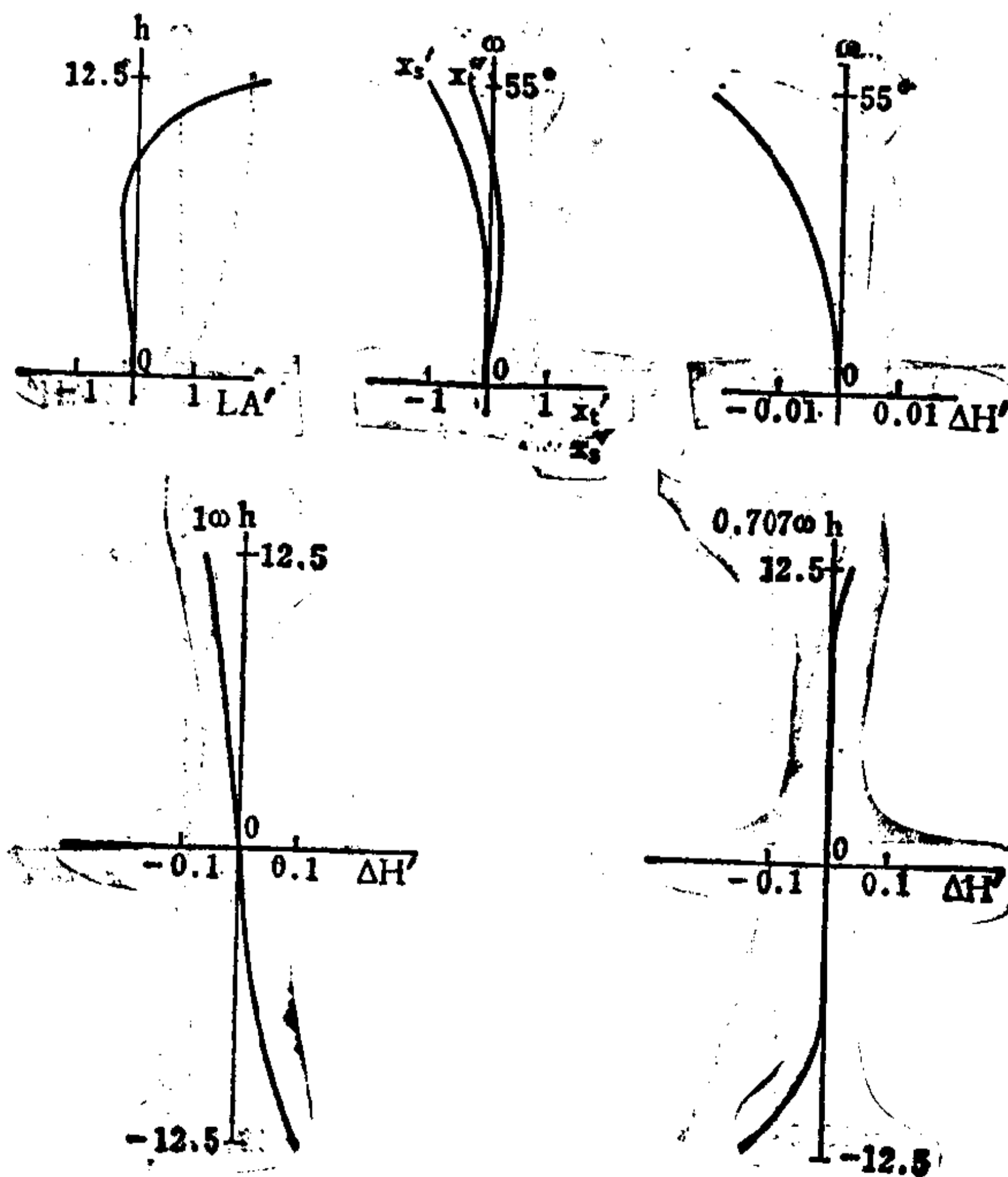
F.A.=±55°\*\*



序号	r	d	nd	vd	序号	r	d	nd	vd
1	163.25	4.53	1.51680	64.2	10	-1385.90	18.63	1.55232	63.5
2	74.41	14.14			11	-22.00	3.78	1.63636	35.3
3	99.80	3.96	1.52054	69.7	12	81.47	22.40	1.74300	33.3
4	53.18	36.17			13	-58.62	22.91		
5	62.21	26.82	1.74400	44.8	14	-48.76	3.96	1.53172	48.8
6	29.33	22.80	1.65100	41.9	15	-83.50	22.29		
7	-55.22	6.80	1.59308	35.7	16	-51.42	10.36	1.64050	60.1
8	31.80	4.30	1.64350	47.8	17	-111.90			
9	926.20	3.90*							

3.90\* = 1.90 + 2.00

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.0417	-0.0129	-0.0042	0.0269	-0.0126	142.8	-0.015%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_i$	$x'_s$	$x'_i - x'_s$	$K'_{T1}$	$K'_{T0.7}$
100	2.096	-0.022	-0.379	-1.110	0.731	0.024	0.0027
70	-0.086	-0.009	0.059	-0.321	0.380	-0.063	-0.0104



编号: 03-02-021

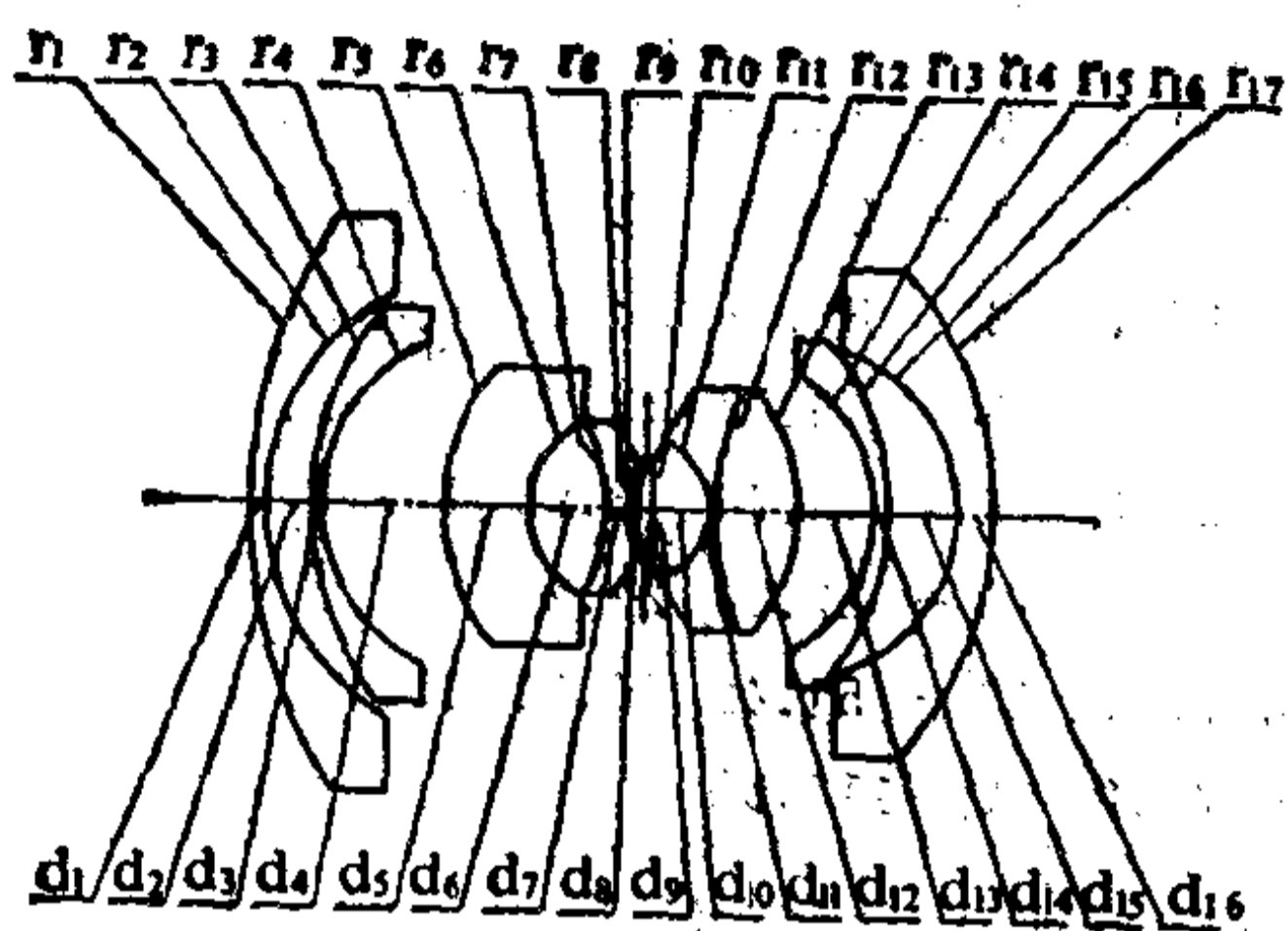
# 广 角 物 镜

E.F.L=100

B.F.L=30.8

FNo.=4

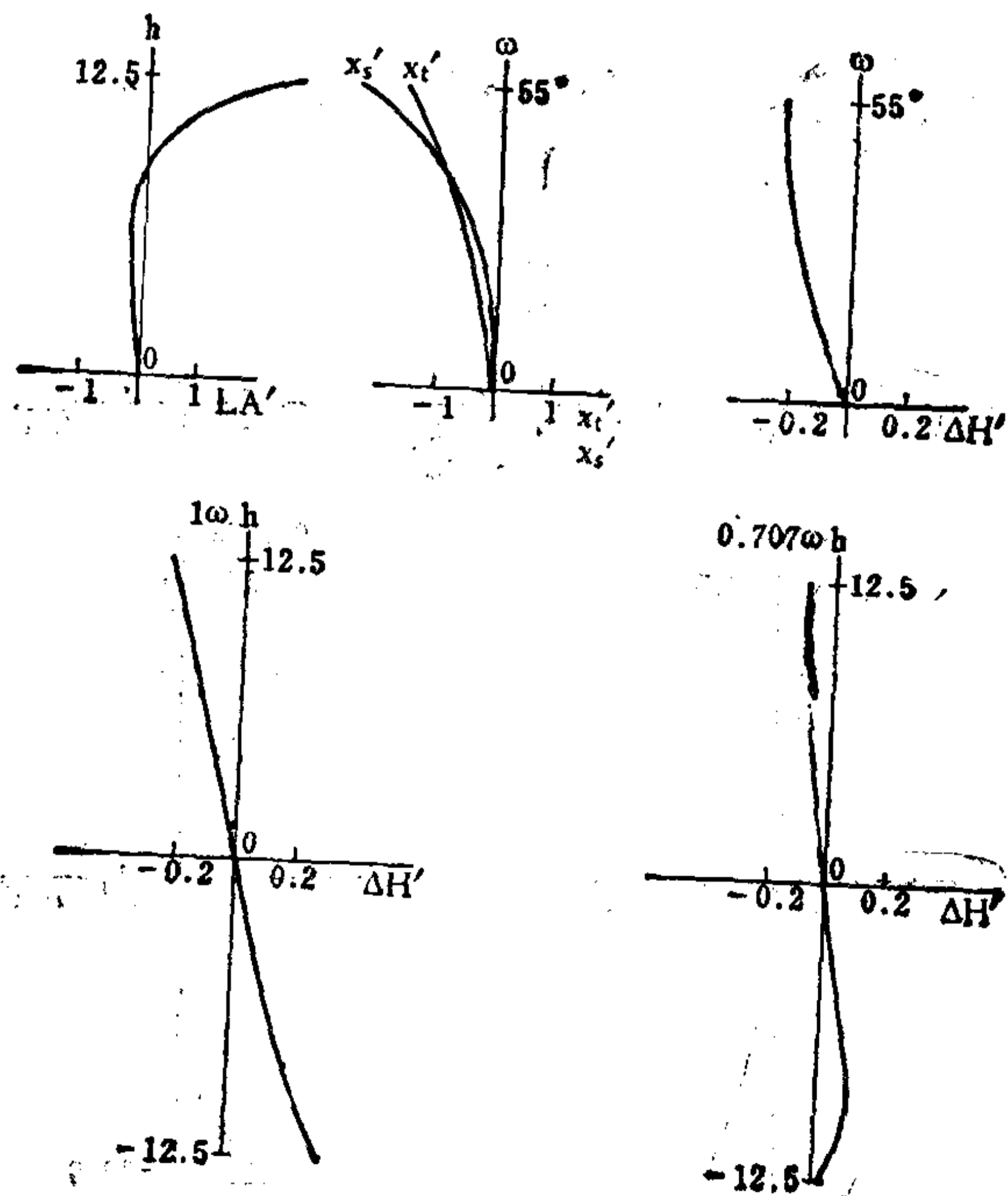
F.A.=±55°\*



序号	r	d	nd	vd	序号	r	d	nd	vd
1	163.25	4.53	1.51680	64.2	10	-1385.90	18.00	1.55232	63.5
2	74.41	14.14			11	-21.78	1.00	1.63636	35.3
3	99.80	3.96	1.52054	69.7	12	90.00	25.80	1.74300	33.3
4	53.18	36.17			13	-57.55	22.91		
5	62.21	26.82	1.74400	44.8	14	-48.76	3.96	1.58375	55.3
6	29.33	22.80	1.65100	41.9	15	-83.25	21.00		
7	-55.22	6.80	1.59308	35.7	16	-51.42	10.30	1.64050	60.1
8	32.50	3.00	1.64350	47.8	17	-111.90			
9	973.65	3.90*							

3.90\* = 1.90 + 2.00

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(100)
	-0.0390	-0.0115	-0.0168	0.0176	-0.1058	142.8	-0.17%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{T1}$	$K'_{T0.7}$
100	2.602	-0.249	-1.613	-2.562	0.949	0.041	0.0140
70	0.018	-0.210	-1.059	-0.865	-0.194	-0.038	0.0006



编号: 03-02-022

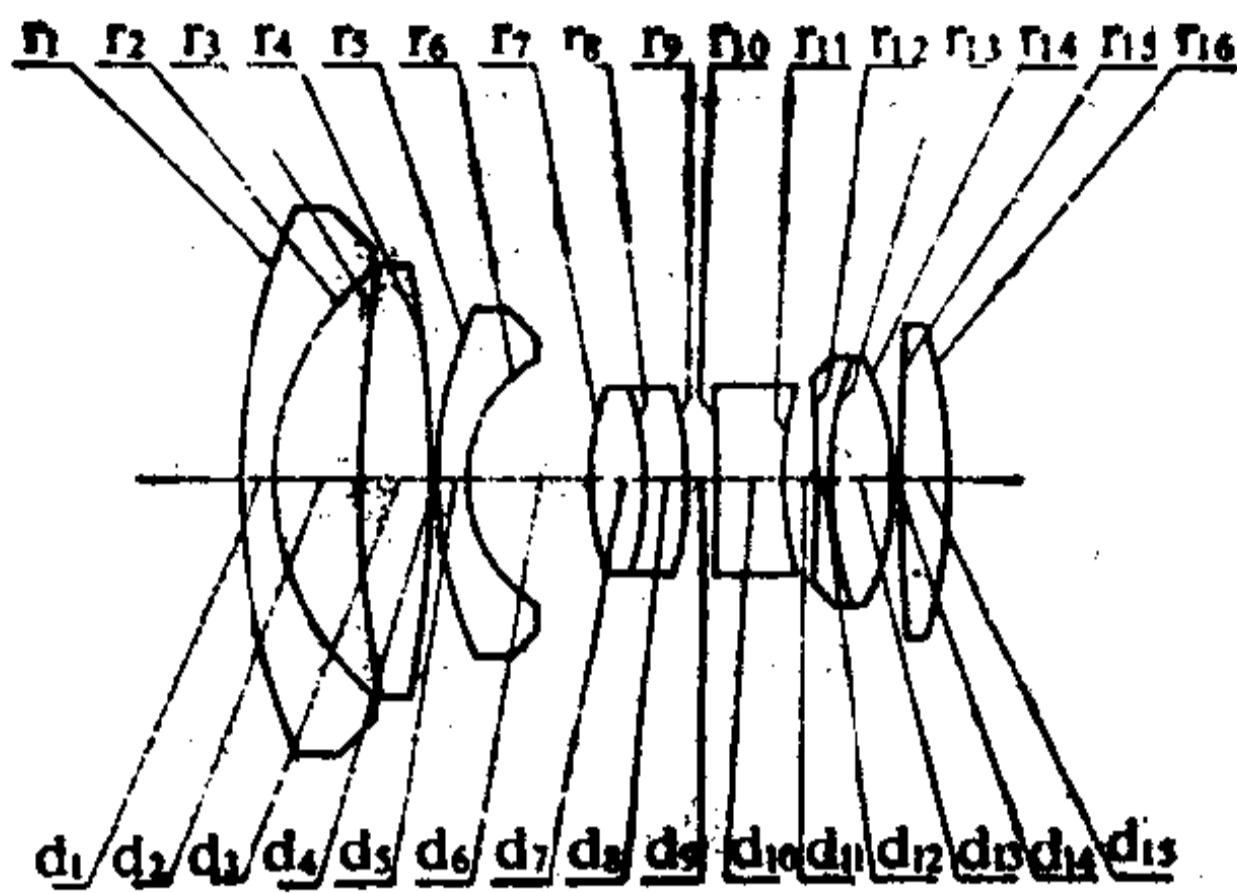
# 反远距型超广角照相机镜头

E.F.L = 1

B.F.L = 1.5597

FNo. = 2.8

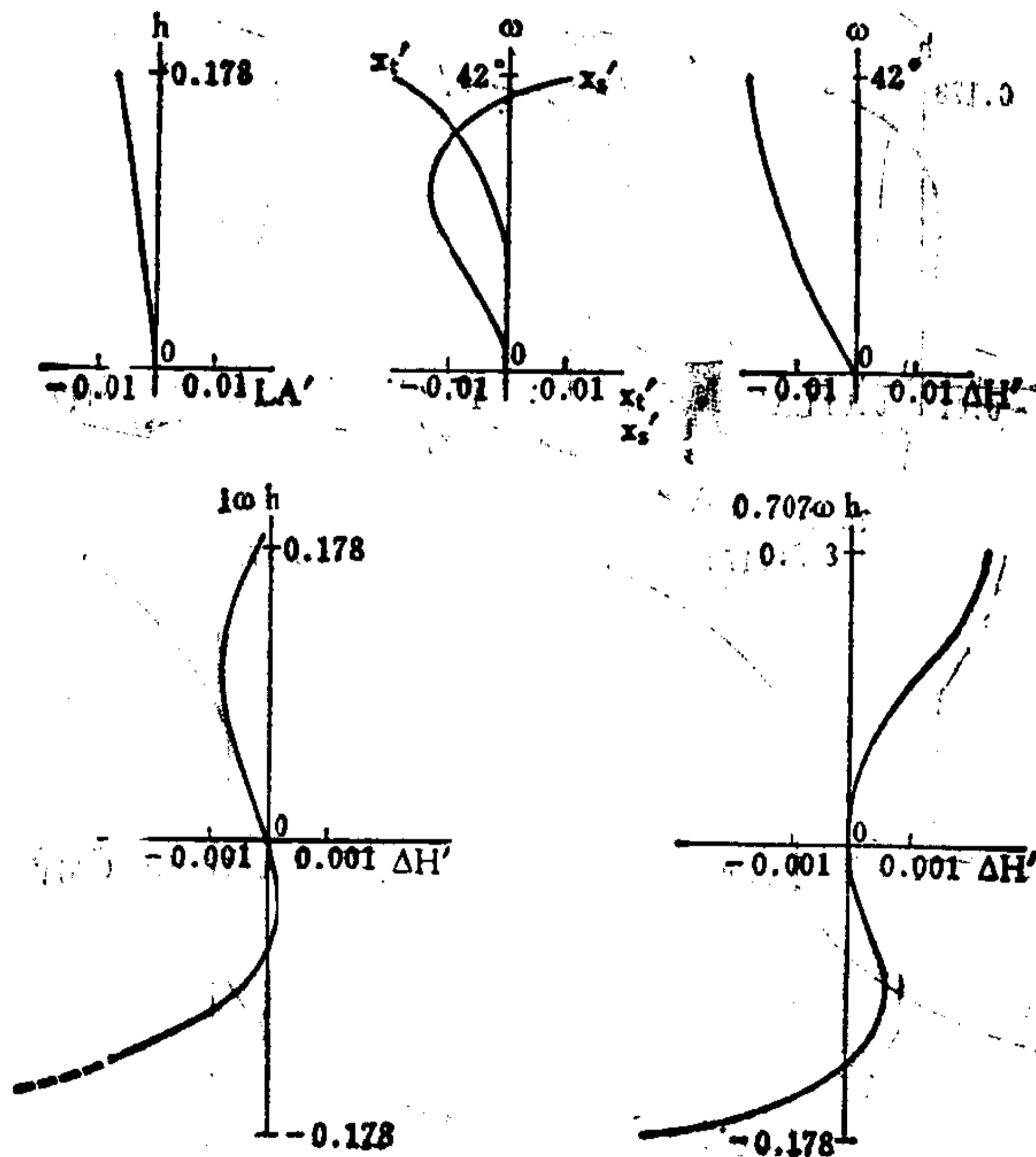
F.A. = ± 42°



序号	r	d	nd	va	序号	r	d	nd	va
1	2.5000	0.1125	1.62041	60.3	9	-1.4542	0.1042*		
2	0.8958	0.2625			10	-3.5417	0.2208	1.78470	
3	3.7500	0.2202	1.62041	60.3	11	1.3500	0.0979		
4	-3.7500	0.0042			12	-5.0000	0.0417	1.78470	26.1
5	1.2500	0.1125	1.62041	60.3	13	1.1729	0.2250	1.62041	60.3
6	0.4583	0.4083			14	-0.8333	0.0042		
7	1.0521	0.1667	1.62004	36.3	15	8.0000	0.1458	1.74400	44.9
8	-0.7742	0.1250	1.51823	59.0	16	-1.9423			

0.1042\* = 0.0500 + 0.0542

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.00095	0.00116	0.00047	-0.00282	-0.01258	0.9	-2.2%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_i$	$x'_o$	$x'_i - x'_o$	$K'_{T1}$	$K'_{I0.7}$
100	-0.00685	-0.019	-0.0210	0.0100	-0.0310	-0.00410	-0.00150
70	-0.00493	-0.015	-0.0045	-0.0142	0.0097	-0.00053	0.00100



编号: 03-02-023

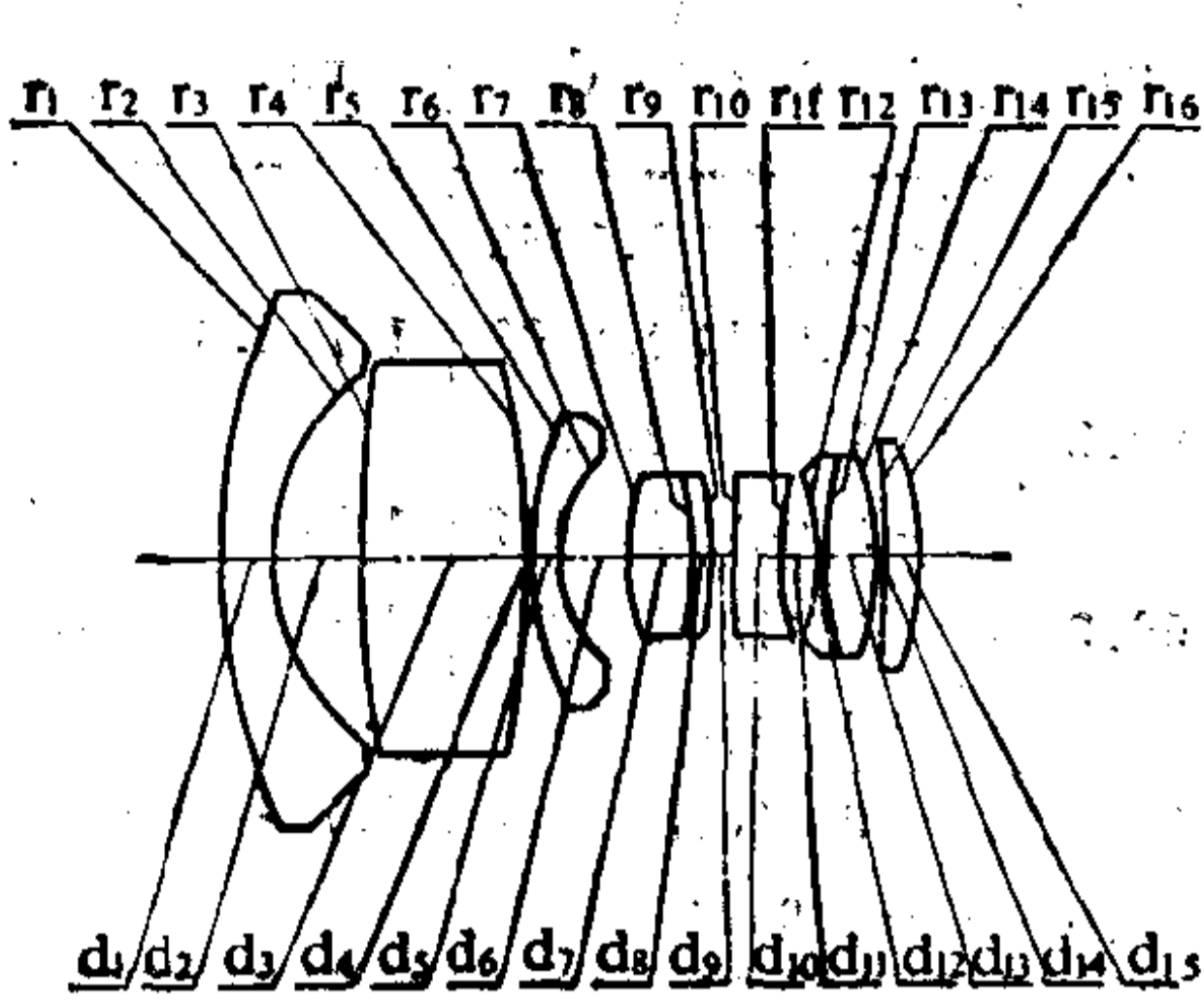
# 反远距型广角照相机镜头

E.F.L=1.027

B.F.L=1.548

FNo.=2.8

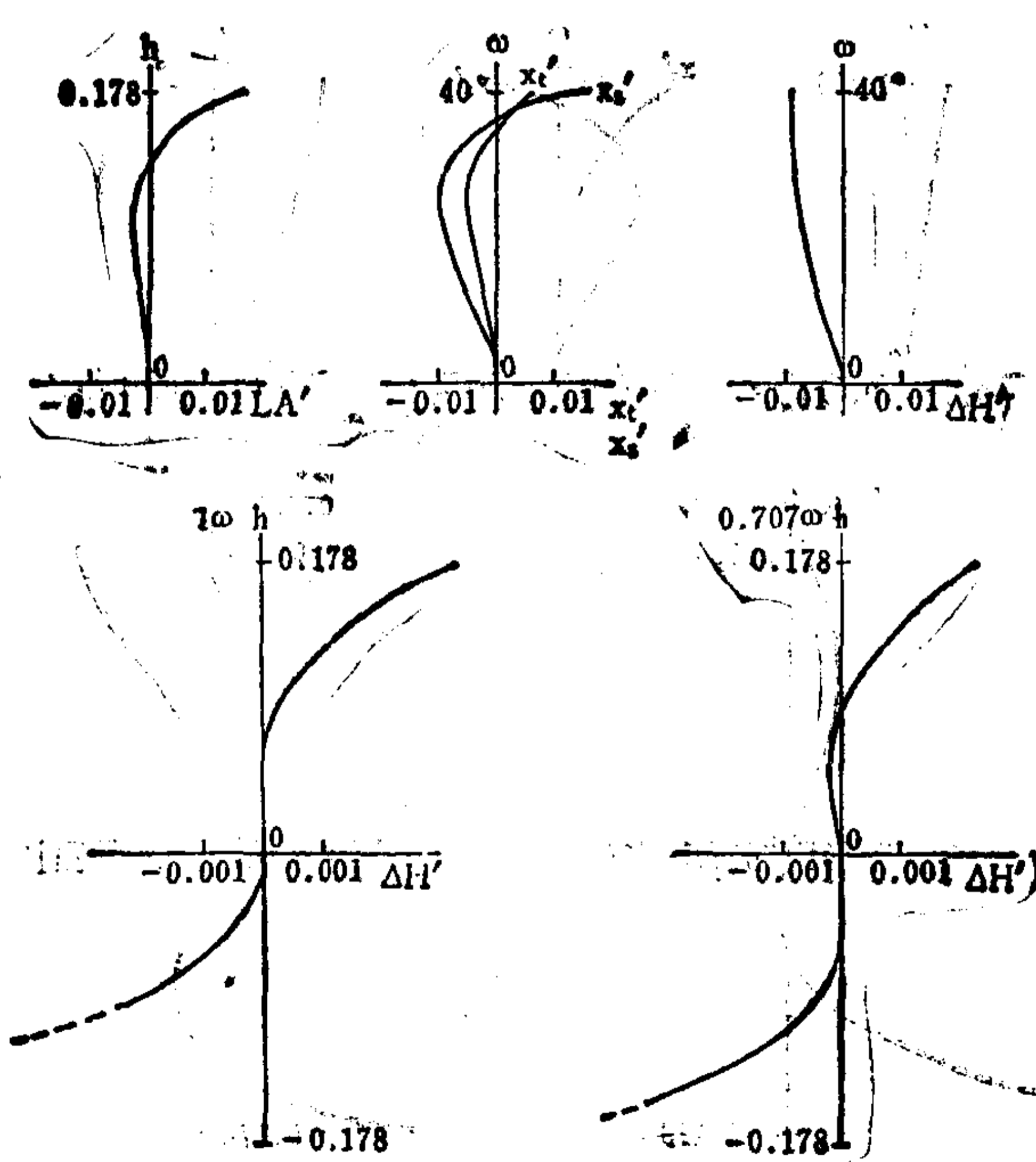
F.A.=±40°



序号	r	d	$n_d$	$v_d$	序号	r	d	$n_d$	$v_d$
1	2.0873	0.180	1.62041	60.3	9	-1.4709	0.088*		
2	0.7842	0.300			10	-40.0000	0.160	1.51823	59.0
3	4.6000	0.552	1.62280	56.9	11	0.9280	0.112		
4	-2.9420	0.004			12	-0.9200	0.028	1.78470	25.1
5	1.1160	0.092	1.58913	61.2	13	1.1768	0.130	1.66790	55.5
6	0.4520	0.232			14	-0.7440	0.004		
7	0.8400	0.200	1.57501	41.3	15	-8.8000	0.104	1.76684	46.2
8	-0.8400	0.054	1.56248	50.9	16	-0.9616			

0.088\* = 0.044 + 0.044

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.00120	0.00012	0.00038	-0.000208	-0.00313	0.86	-1.04%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{f1}$	$K'_{f0.7}$
100	0.0182	-0.0089	0.0060	0.0118	-0.0058	-0.00560	-0.00220
70	-0.0022	-0.0087	-0.0049	-0.0107	0.0058	-0.00210	-0.00048



编号: 03-02-024

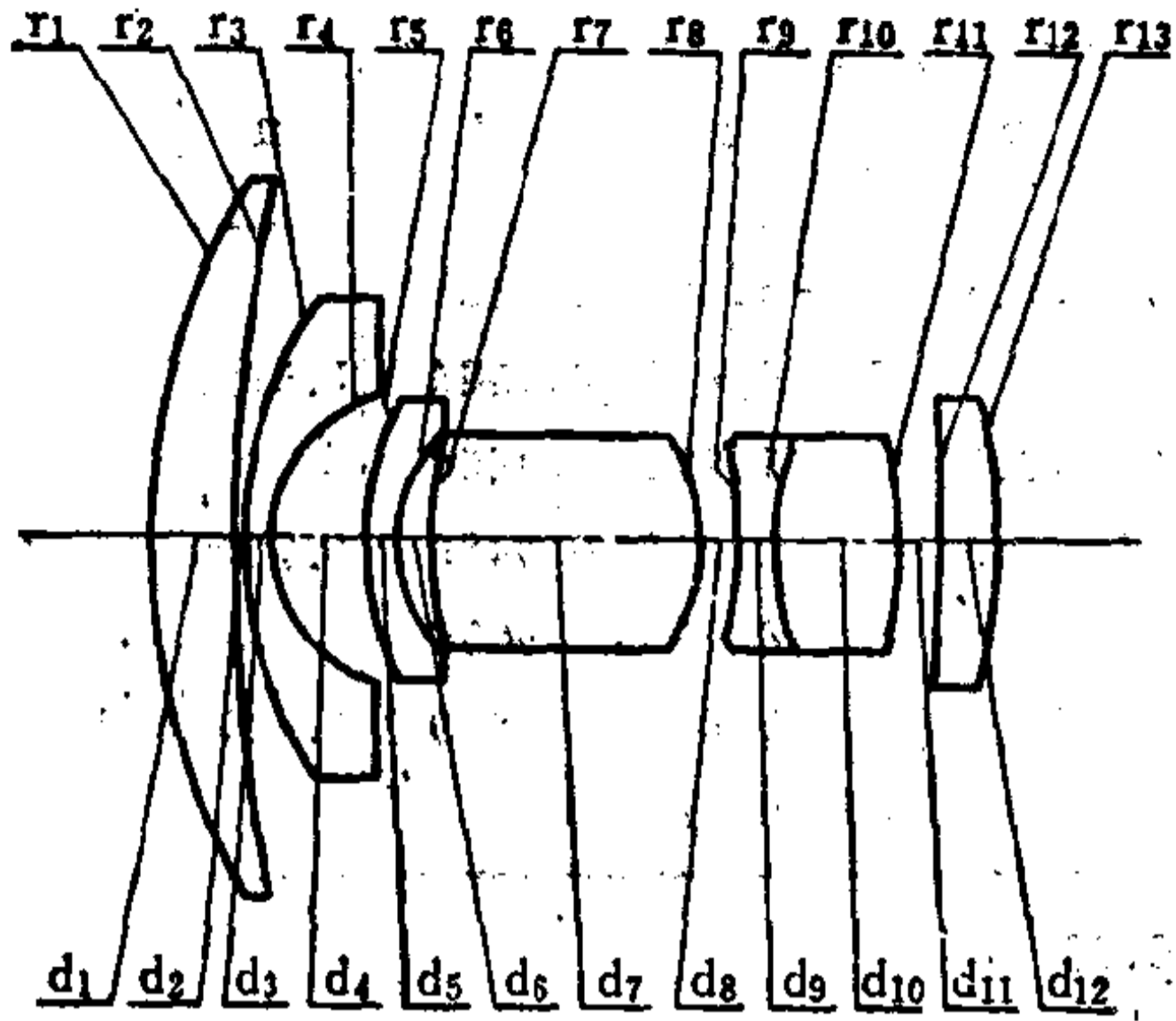
# 反远距型广角镜头

E.F.L=1.013

B.F.L=1.645

FNo.=3.5

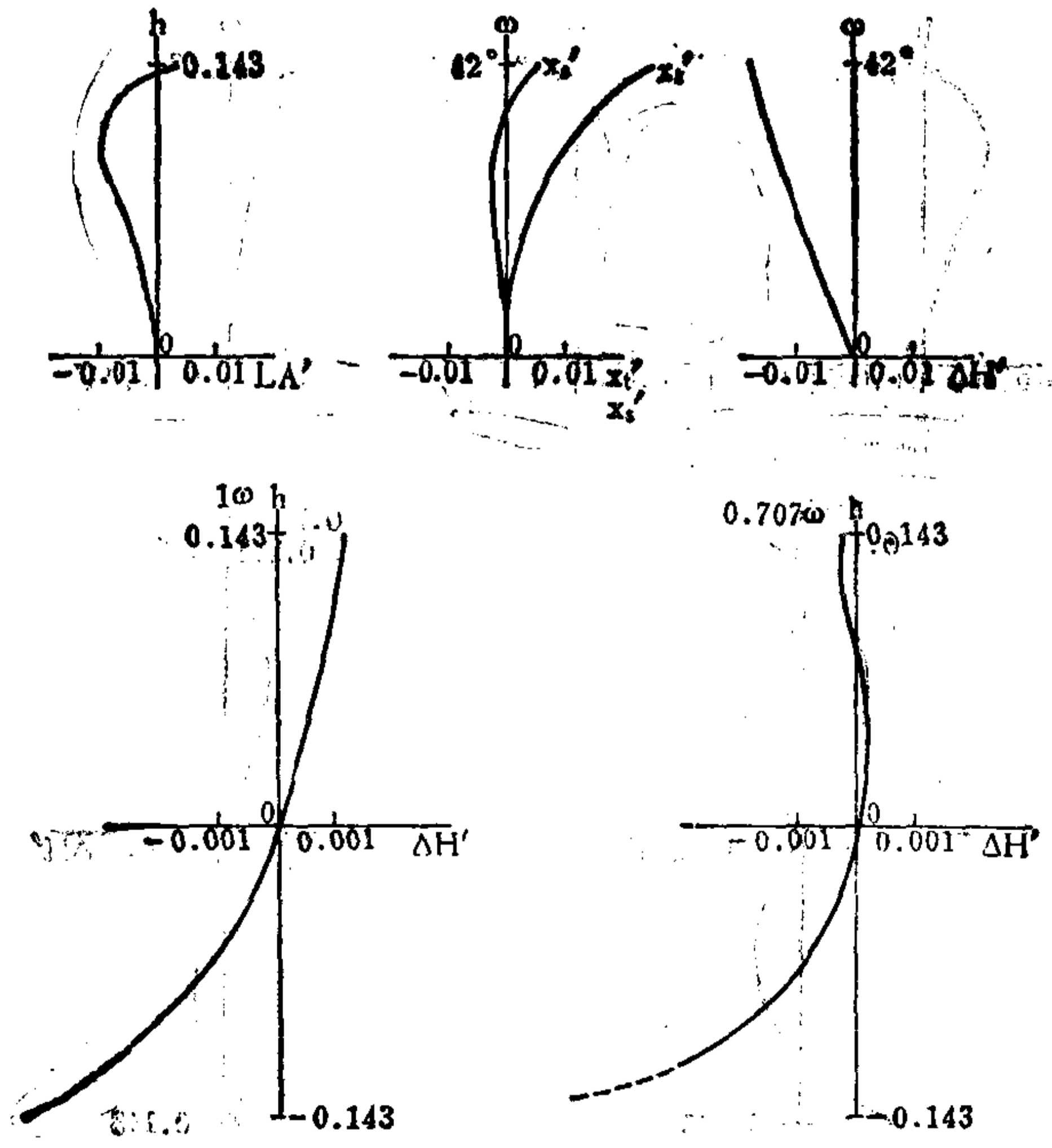
F.A. = ±42°\*\*



序号	r	d	n	v	序号	r	d	n	v
1	1.4862	0.1861	1.7200	42.1	8	-0.4401	0.0745*		
2	3.6691	0.0047			9	-1.3246	0.0931	1.8467	23.9
3	0.9039	0.0698	1.8180	63.4	10	0.6474	0.2688	1.6166	36.6
4	0.3214	0.2100			11	-0.8825	0.0930		
5	0.7290	0.0698	1.7130	54.0	12	-5.9585	0.1220	1.6177	49.8
6	0.3283	0.0629			13	-1.6938			
7	0.9365	0.5915	1.5955	39.2					

0.0745\* = 0.0300 + 0.0445

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.00093	0.00034	0.00050	-0.00073	-0.00974	0.91	-2%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_i$	$x'_o$	$x'_i - x'_o$	$K'_{11}$	$K'_{10.7}$
100	-0.0020	-0.0185	0.0259	-0.0047	0.0212	-0.00150	-0.00066
70	-0.0085	-0.0129	0.0106	-0.0023	0.0129	-0.00390	-0.00096





编号: 03-02-025

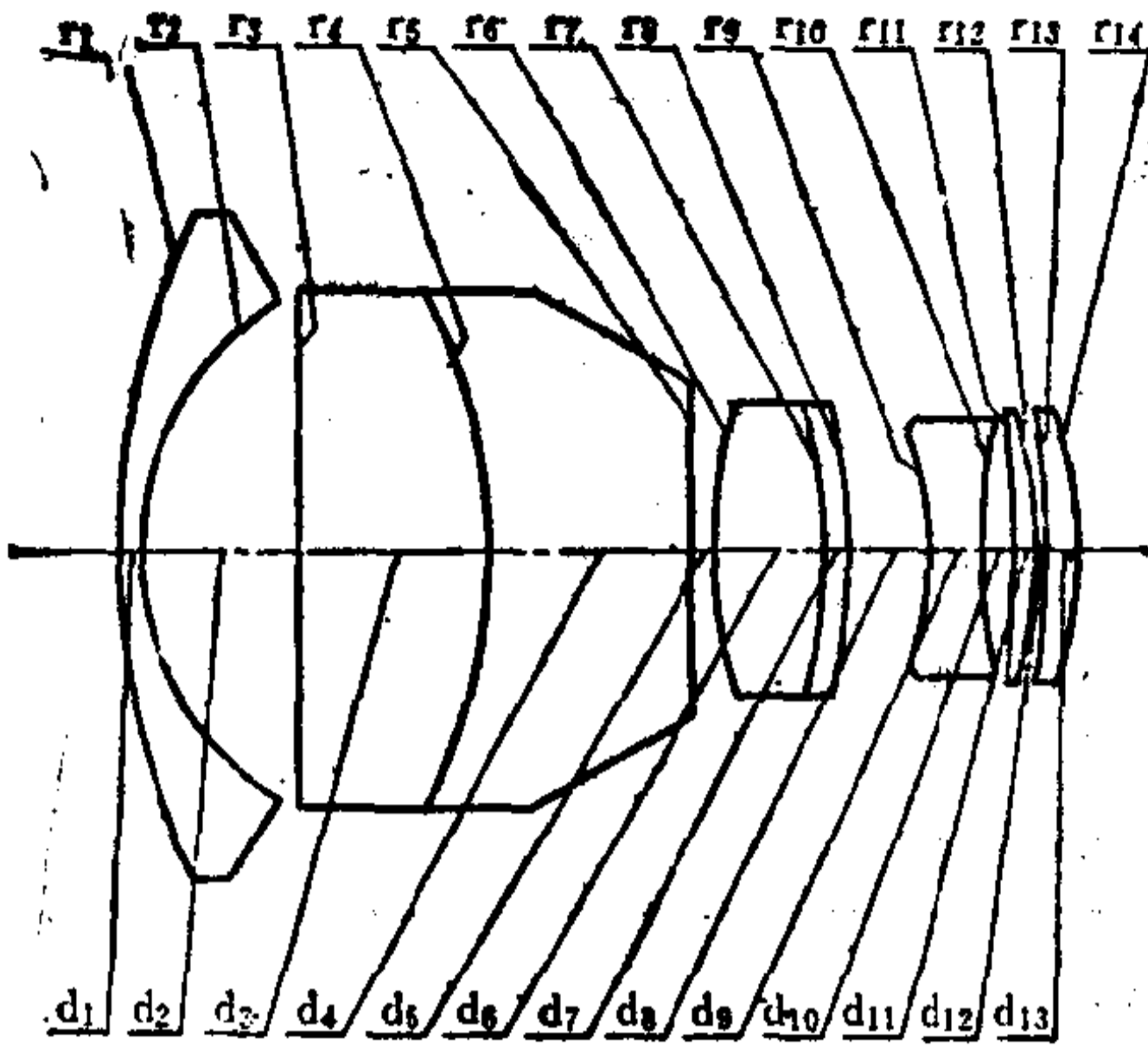
# 反远距型广角镜头

E.F.L = 1

B.F.L = 1.28

FNo. = 3.5

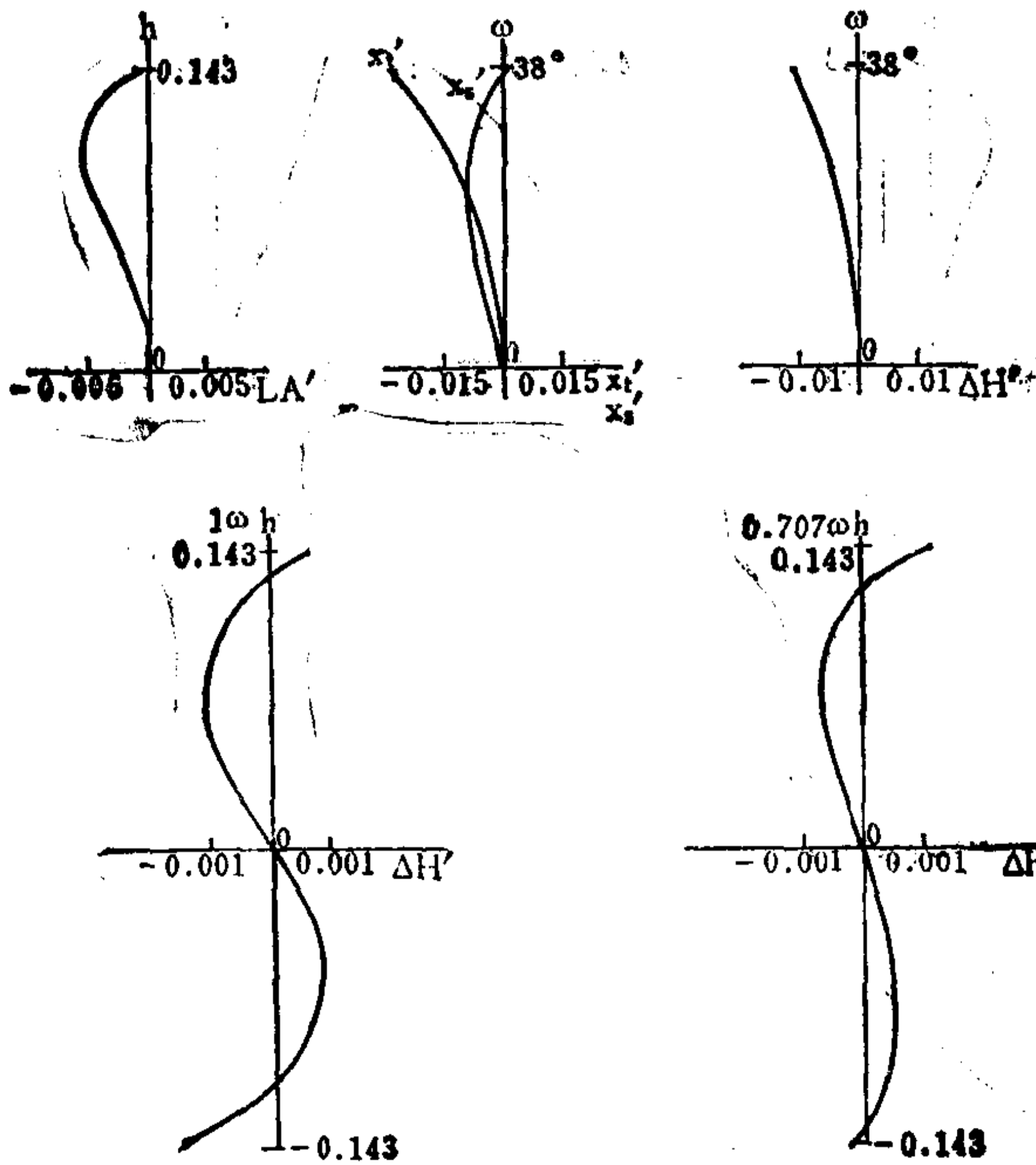
F.A. = ±38°



序号	r	d	n	v	序号	r	d	n	v
1	1.3689	0.0456	1.6775	55.4	8	-1.4304	0.1496*		
2	0.5306	0.2834			9	-0.6033	0.1064	1.8727	32.2
3	∞	0.3471	1.7106	43.3	10	1.1719	0.0460		
4	-1.1292	0.3690	1.5111	60.5	11	-2.2307	0.0480	1.7200	50.3
5	∞	0.0400			12	-0.7088	0.0030		
6	0.9360	0.1965	1.7080	53.3	13	-2.0247	0.0600	1.8214	61.2
7	-0.8252	0.0300	1.6263	35.8	14	-0.6803			

$0.1496^* = 0.0700 + 0.0796$

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1ω)
	-0.000715	0.000107	-0.000025	-0.000908	-0.005040	0.78	-1.5%
h 或 ω %	LA'	ΔH'	$x'_i$	$i x'_i$	$x'_i - x'_i$	$K_{T1}^0$	$K_{T0.7}^0$
100	-0.00031	-0.0113	-0.0297	0.0019	-0.0315	-0.00044	-0.00038
70	-0.00533	-0.0067	-0.0132	-0.0089	-0.0043	0.00049	-0.00001



编号: 03-02-026

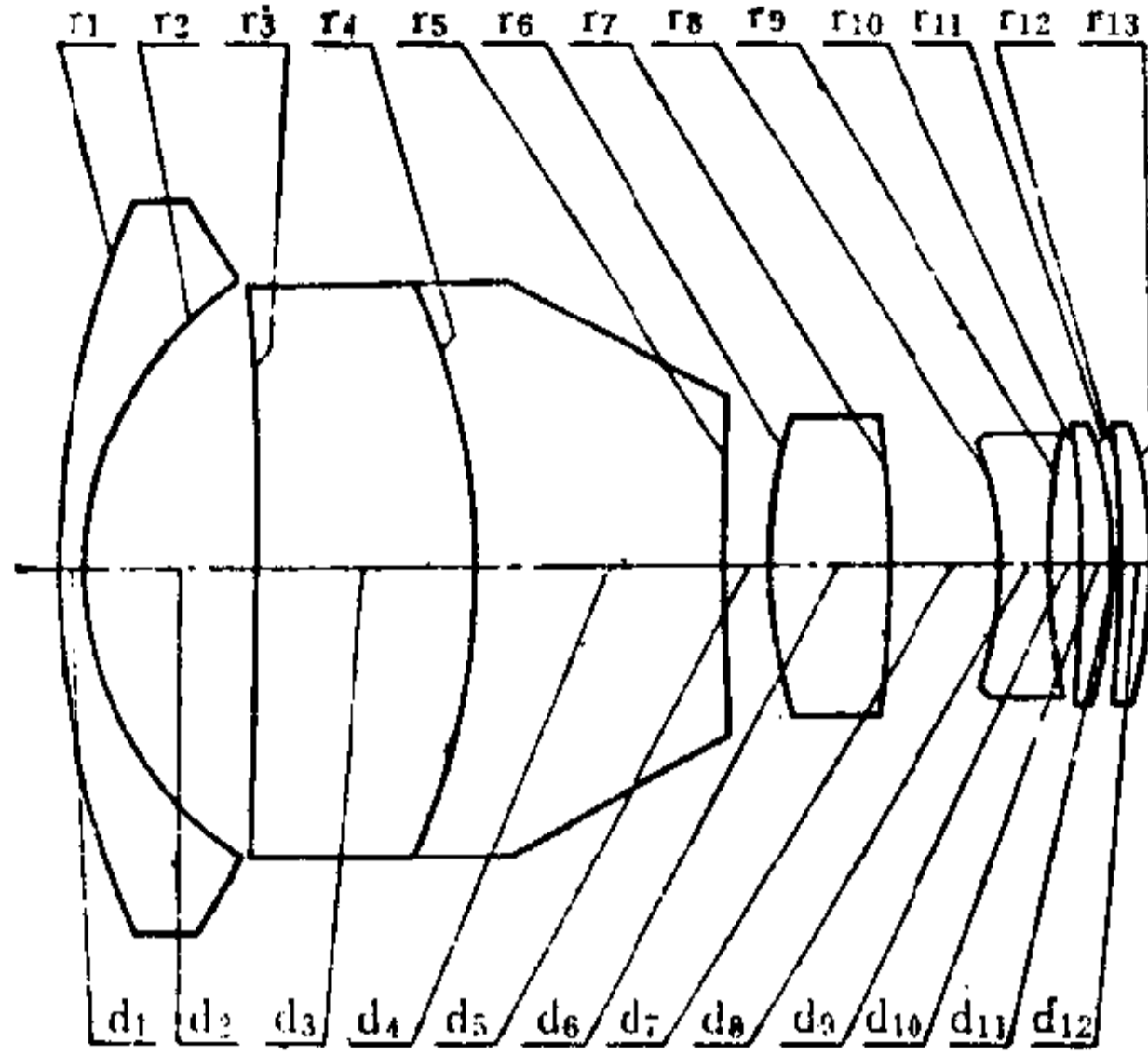
# 反远距型广角镜头

E.F.L=0.994

B.F.L=1.272

FNo.=4

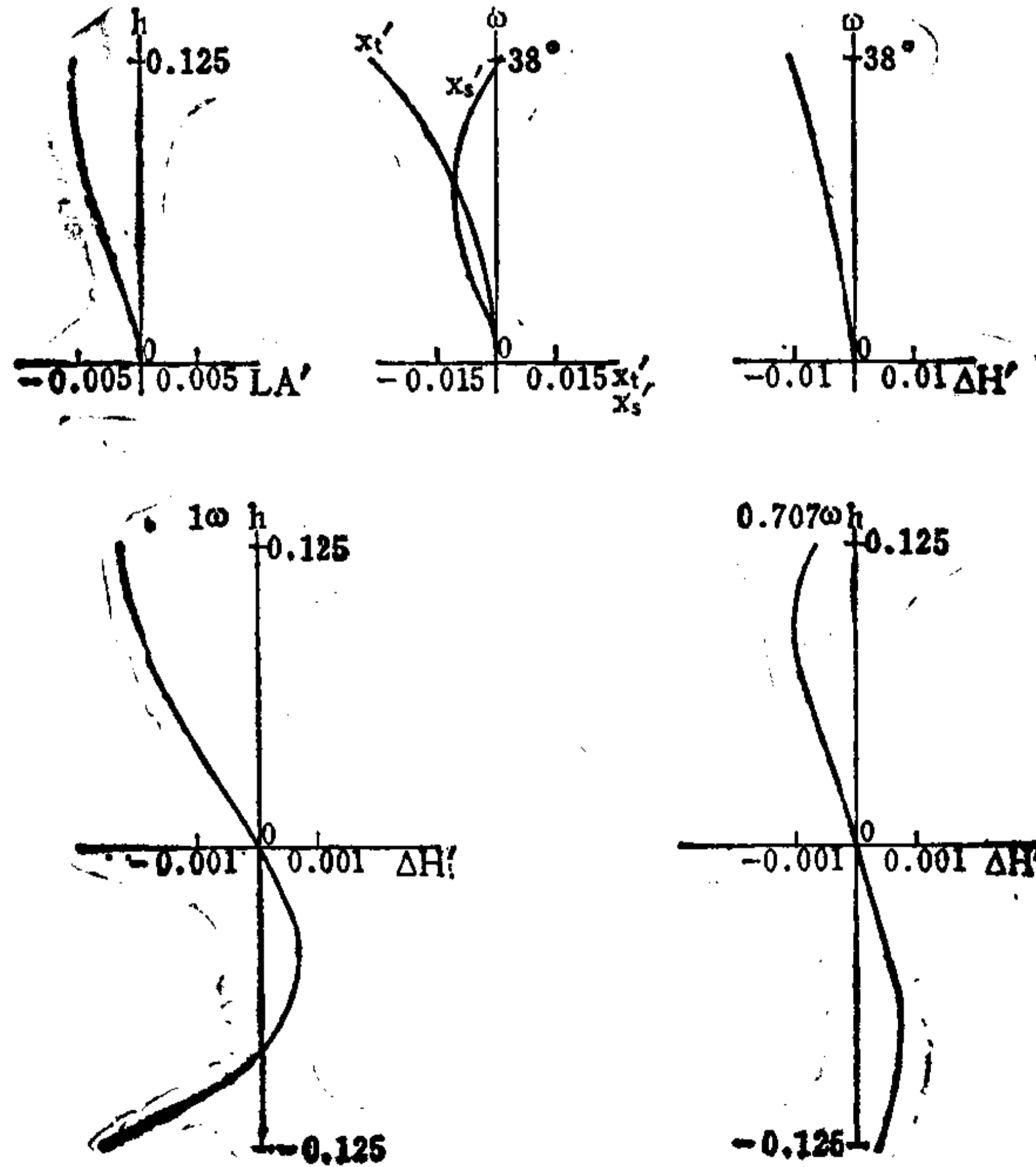
F.A.=±38°



序号	r	d	n	v	序号	r	d	n	v
1	1.5241	0.0500	1.6204	60.3	8	-0.6060	0.0876	1.7147	29.4
2	0.5722	0.2819			9	1.3904	0.0400		
3	-13.5100	0.3708	1.7200	50.3	10	-2.4003	0.0550	1.7200	50.3
4	-1.1687	0.4041	1.5176	53.5	11	-0.6681	0.0030		
5	23.1750	0.0779			12	-2.4010	0.0550	1.6775	55.4
6	0.9035	0.1981	1.7200	50.3	13	-0.7370			
7	-1.8891	0.1912*							

$0.1912^* = 0.0956 + 0.0956$

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.000450	0.000113	0.000008	-0.000782	-0.004571	0.78	-1.4%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{T1}$	$K'_{r0.7}$
100	-0.0056	-0.0110	-0.0325	0.0010	-0.0335	-0.0024	-0.0011
70	-0.0053	-0.0068	-0.0138	-0.0098	-0.0040	-0.00013	-0.00013



编号: 03-02-027

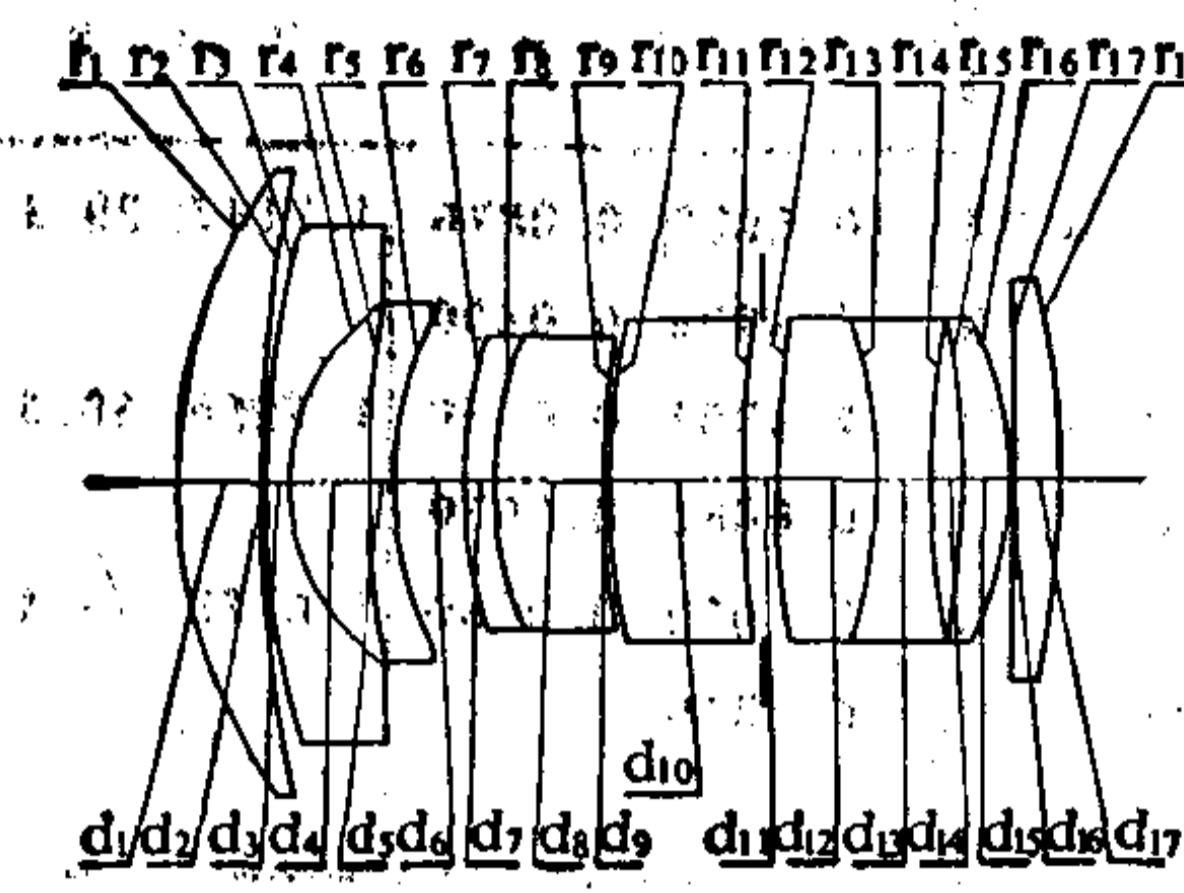
# 反远距型超广角镜头

E.F.L=1

B.F.L=1.448

FNo.=2.8

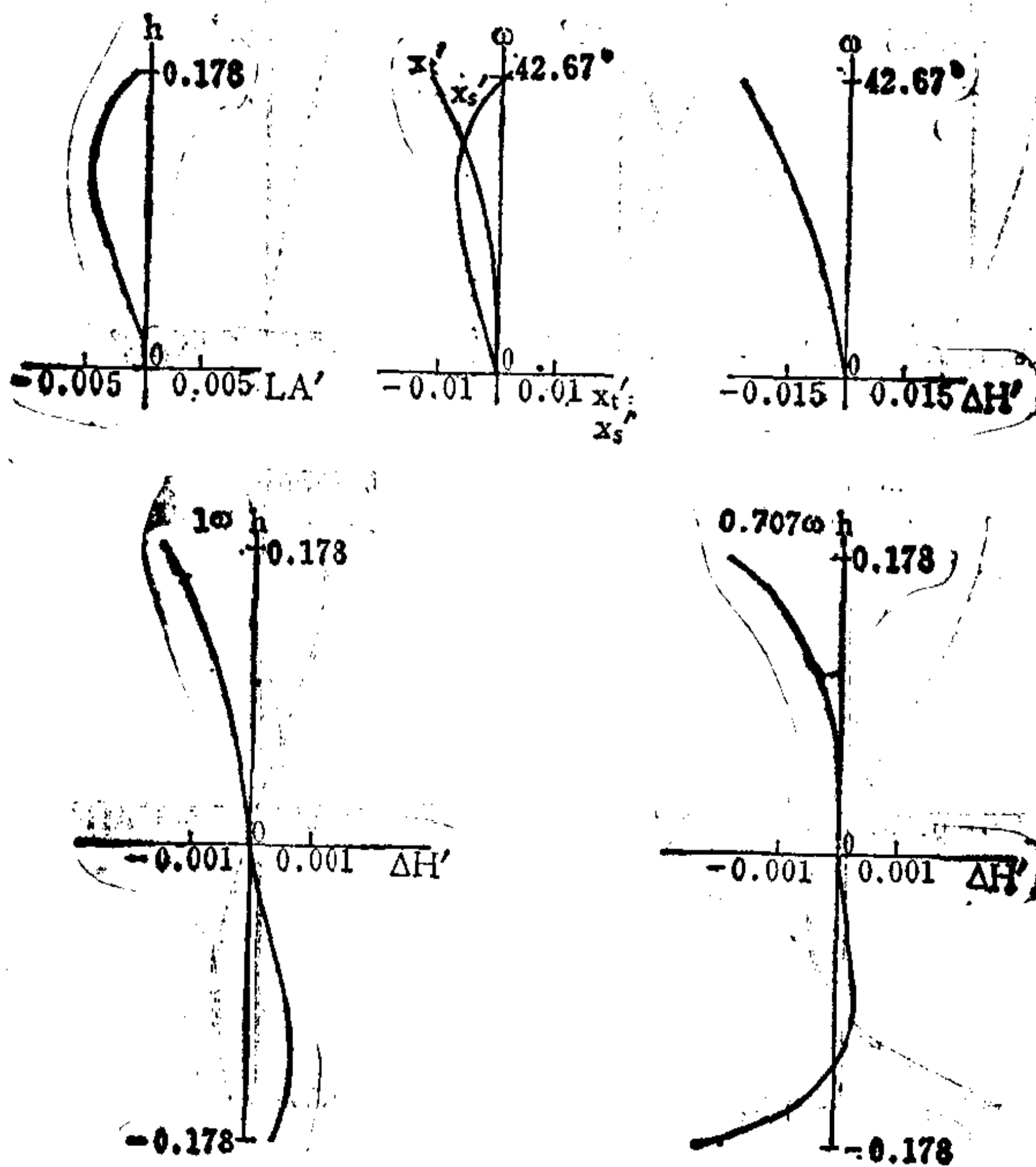
F.A.=±42.67°



序号	r	d	n	v	序号	r	d	n	v
1	0.8352	0.1290	1.7200	50.4	10	1.7459	0.2058	1.6237	46.9
2	2.5729	0.0038			11	3.6218	0.0516*		
3	1.5009	0.0387	1.6180	63.4	12	1.5649	0.1569	1.7620	40.2
4	0.3300	0.1306			13	-0.8088	0.0889	1.8052	25.4
5	1.5990	0.0387	1.6485	53.0	14	1.4895	0.0472		
6	0.5789	0.1095			15	-1.3814	0.0735	1.6968	55.6
7	0.7756	0.0395	1.6676	41.9	16	-0.5552	0.0038		
8	0.5351	0.1753	1.6261	39.1	17	28.8360	0.0752	1.7340	51.5
9	1.9263	0.0082			18	-1.5345			

$0.0516^* = 0.0300 + 0.0216$

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QF(1 $\omega$ )
	-0.00107	0.00052	0.00013	-0.00139	-0.01168	0.91	-3.1%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_i$	$x'_s$	$x'_i - x'_s$	$K'_{F1}$	$K'_{F0.7}$
100	-0.00059	-0.028	-0.0120	0.0010	-0.0130	-0.00056	-0.00006
70	-0.00467	-0.015	-0.0043	-0.0075	0.0032	-0.00221	-0.00032





编号: 03-02-028

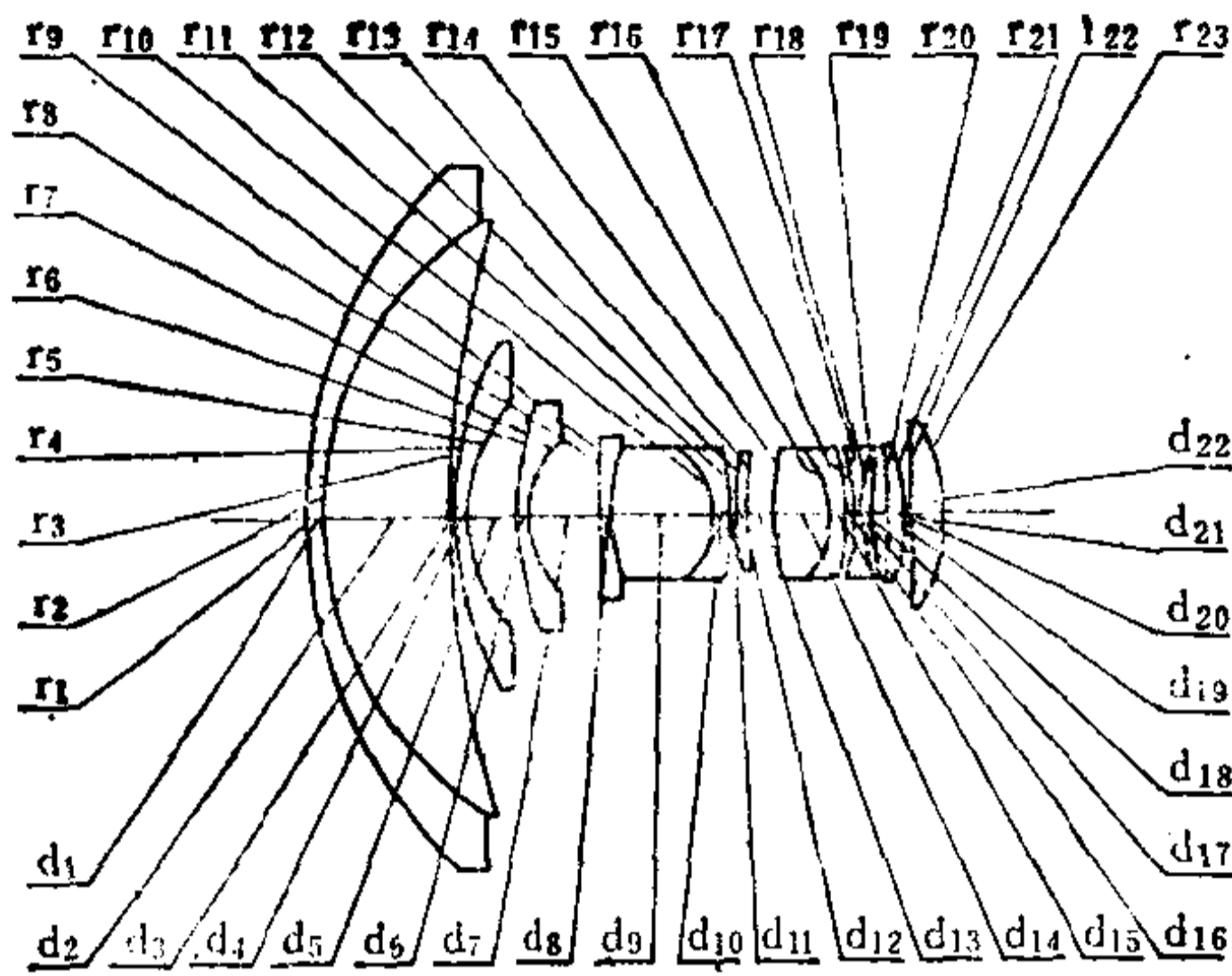
# 广 角 物 镜

E.F.L = 100

B.F.L = 231.1

FNo. = 4.5

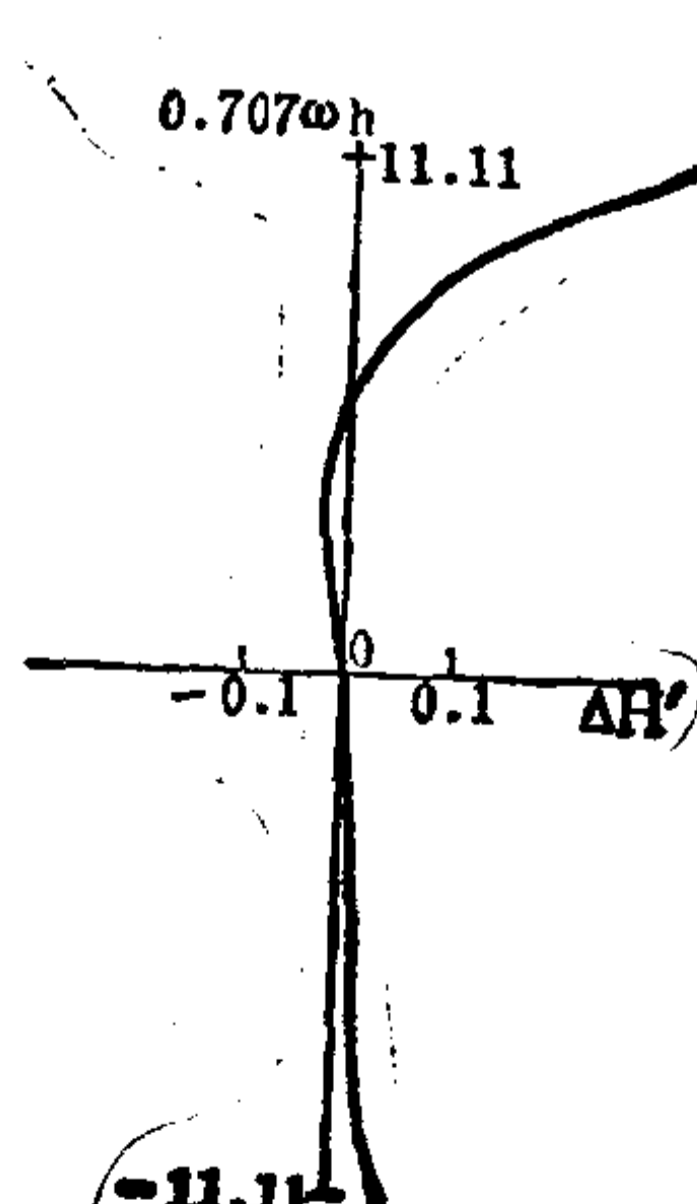
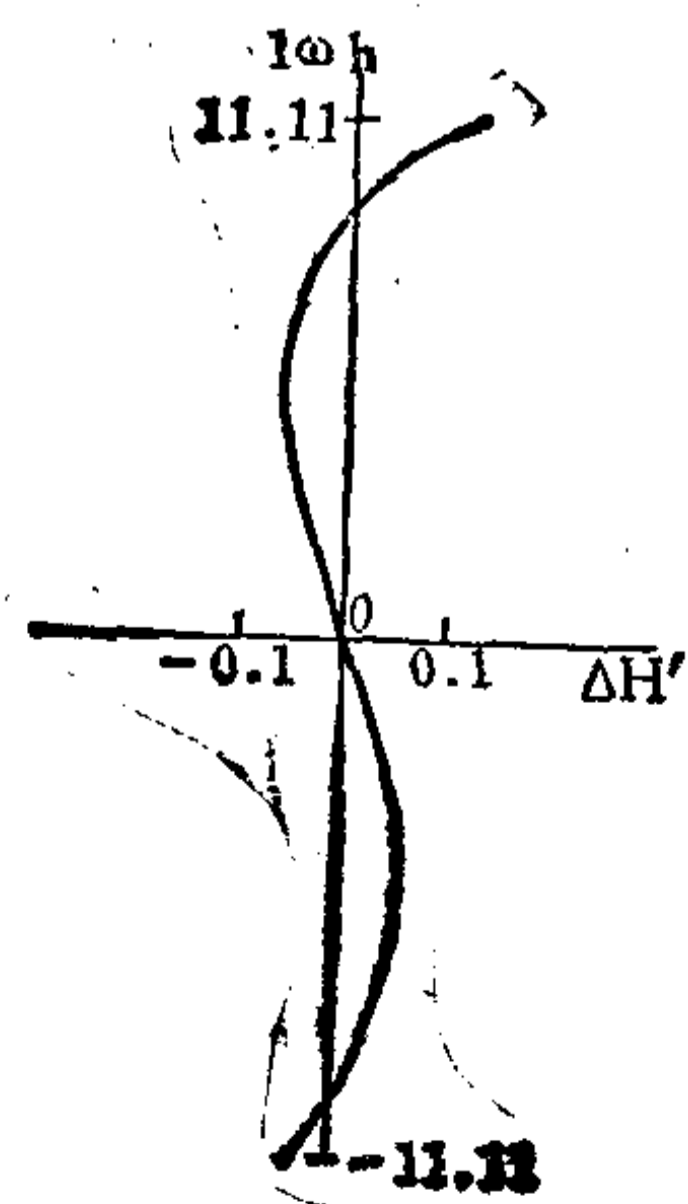
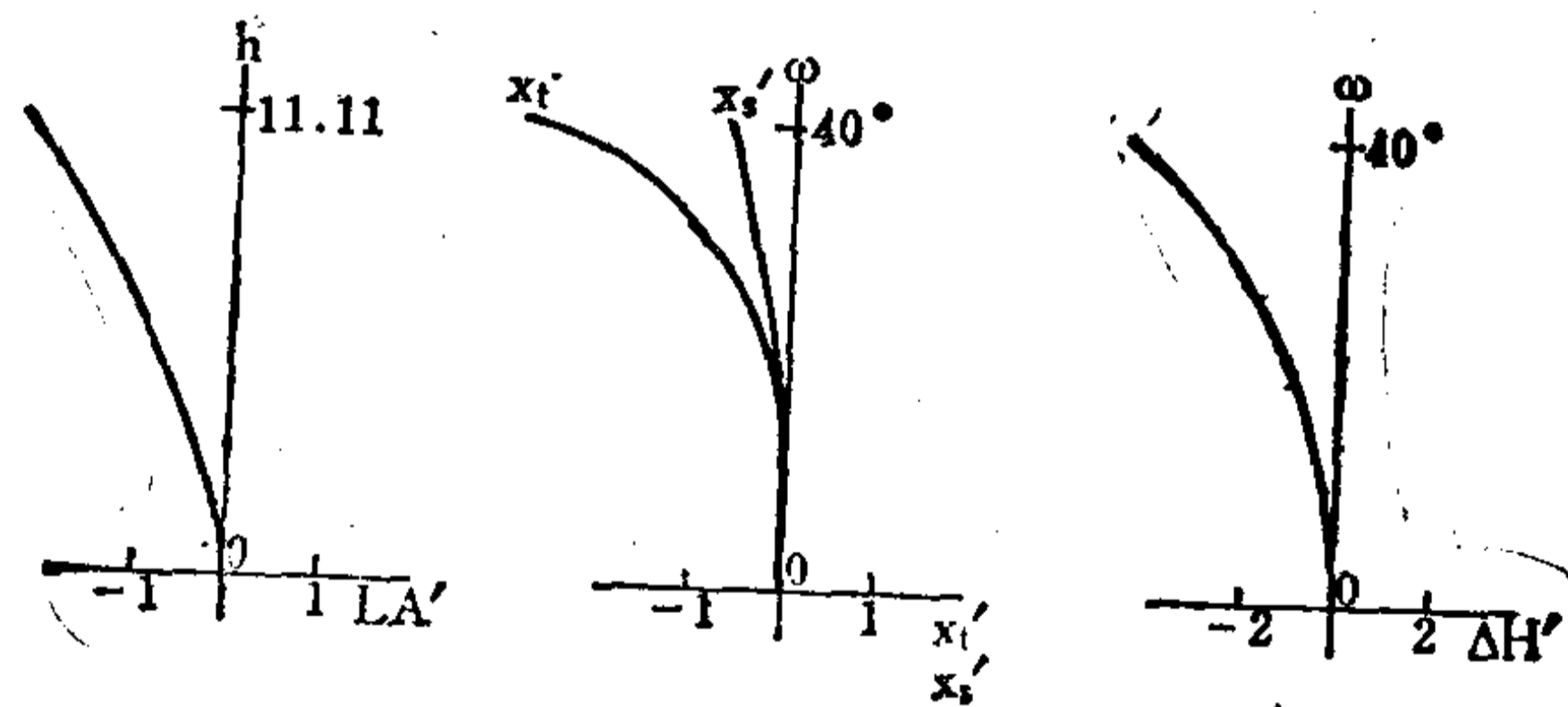
F.A. = ± 40°\*\*



序号	r	d	n	v	序号	r	d	n	v
1	243.90	7.32	1.78470	26.1	13	121.95	15.24*		
2	176.83	63.40	1.69680	55.6	14	121.95	28.66	1.62538	35.6
3	539.63	0.61			15	-39.63	6.10	1.62280	56.9
4	181.70	4.88	1.69680	55.6	16	-71.95	2.44		
5	76.22	24.39			17	-68.90	3.66	1.80518	25.5
6	128.05	6.10	1.69680	55.6	18	98.78	6.10	1.62041	60.3
7	48.78	34.15			19	280.18	3.66		
8	914.63	6.10	1.80454	39.5	20	-283.54	10.06	1.51728	69.6
9	59.15	46.95	1.58065	37.1	21	-76.83	0.61		
10	-40.85	12.20	1.58913	61.2	22	-1371.95	14.02	1.51728	69.6
11	-137.20	0.61			23	-86.22			
12	182.93	4.27	1.69680	55.6					

15.24\* = 9.00 + 6.24

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.0940	0.0480	-0.0229	-0.0090	-0.8226	83.9	-5.8%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_i$	$x'_s$	$x'_i - x'_s$	$K'_{T1}$	$K'_{T0.7}$
100	-2.4410	-4.8390	-2.9760	-0.6990	-2.2770	0.0305	-0.0126
70	-1.6050	-1.7550	-0.6210	-0.2550	-0.3660	0.1923	0.0297



编号: 03-02-029

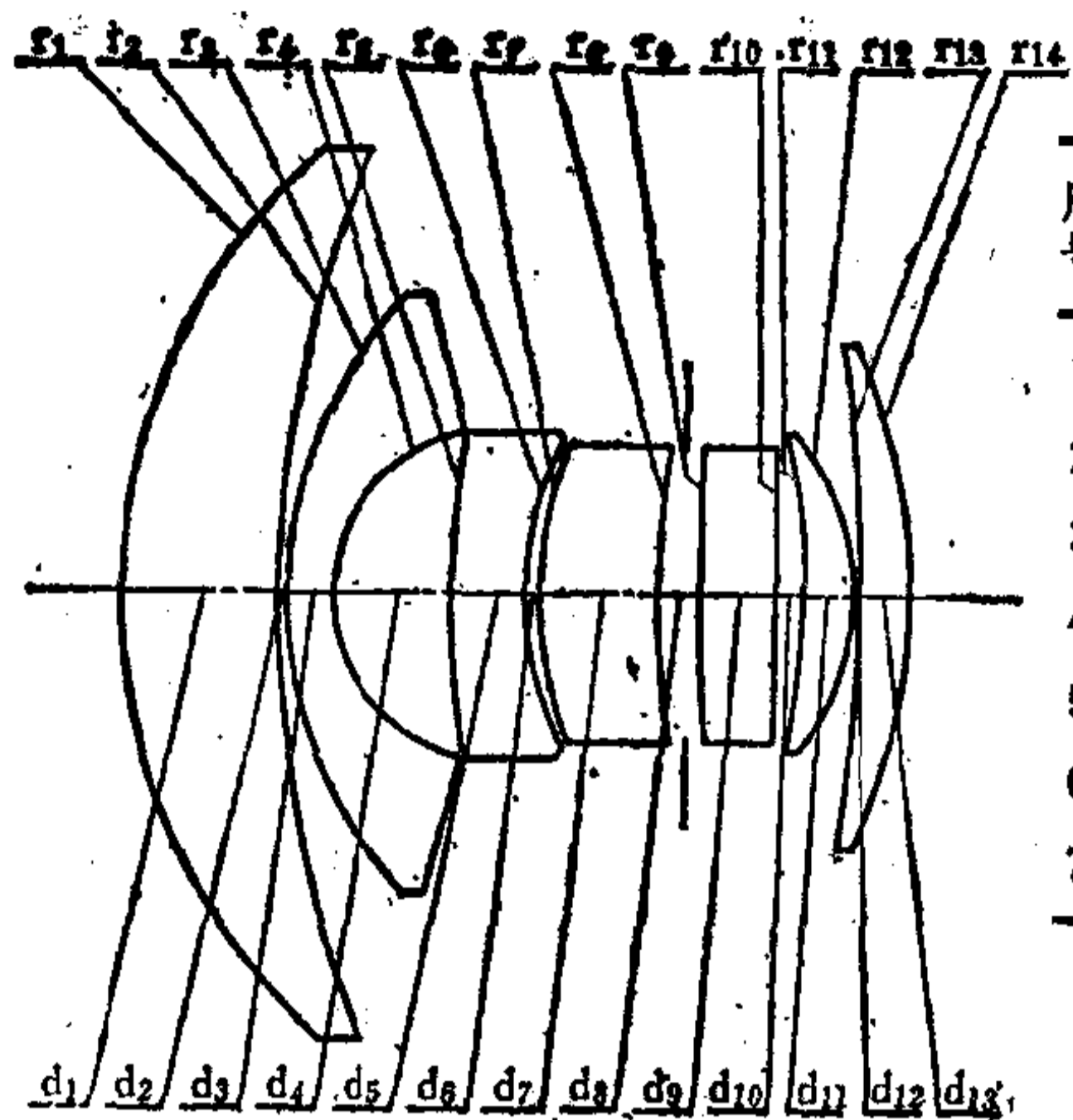
# 超广角摄影物镜

E.F.L.=1

B.F.L.=1.198

FNo.=3.5

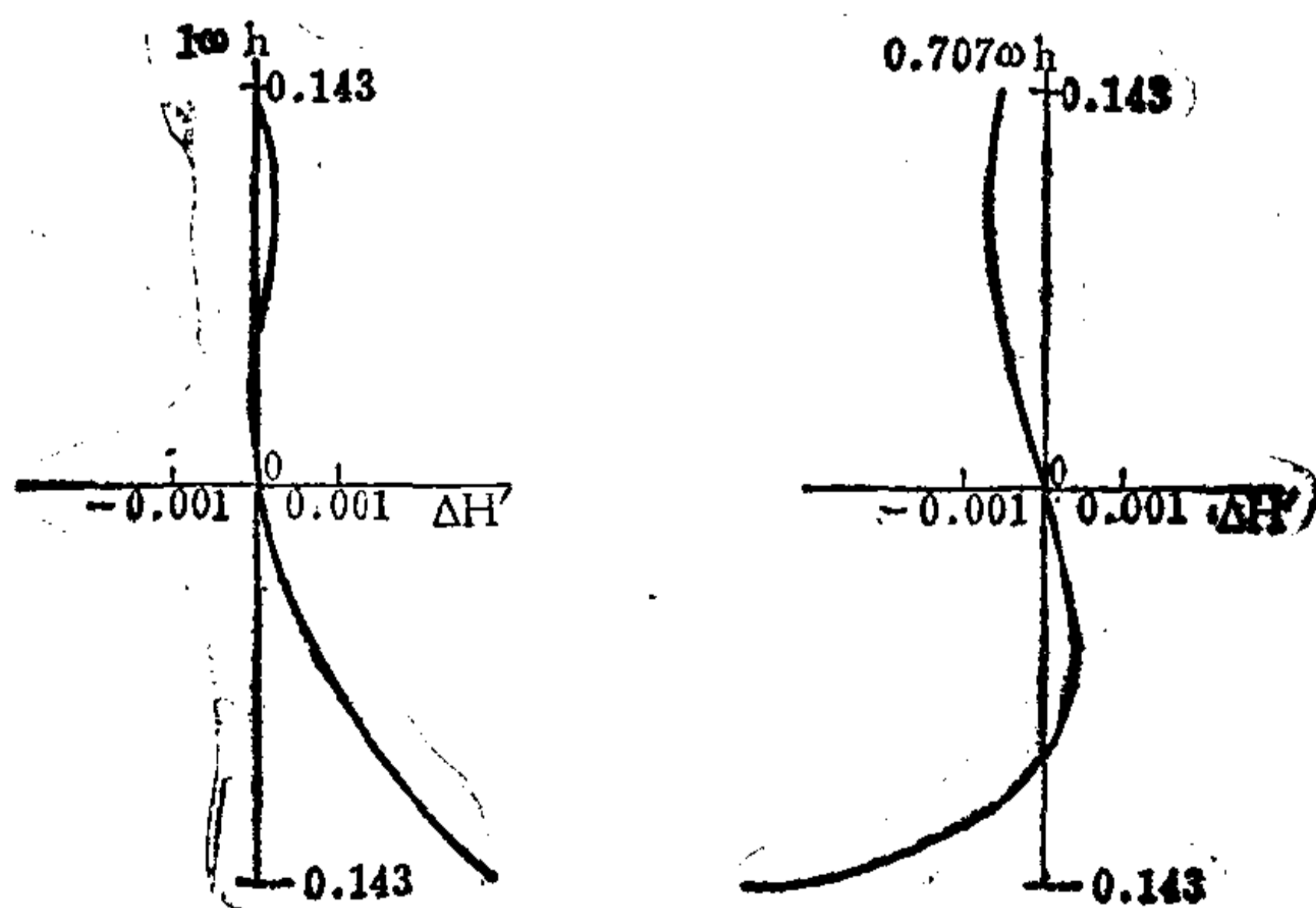
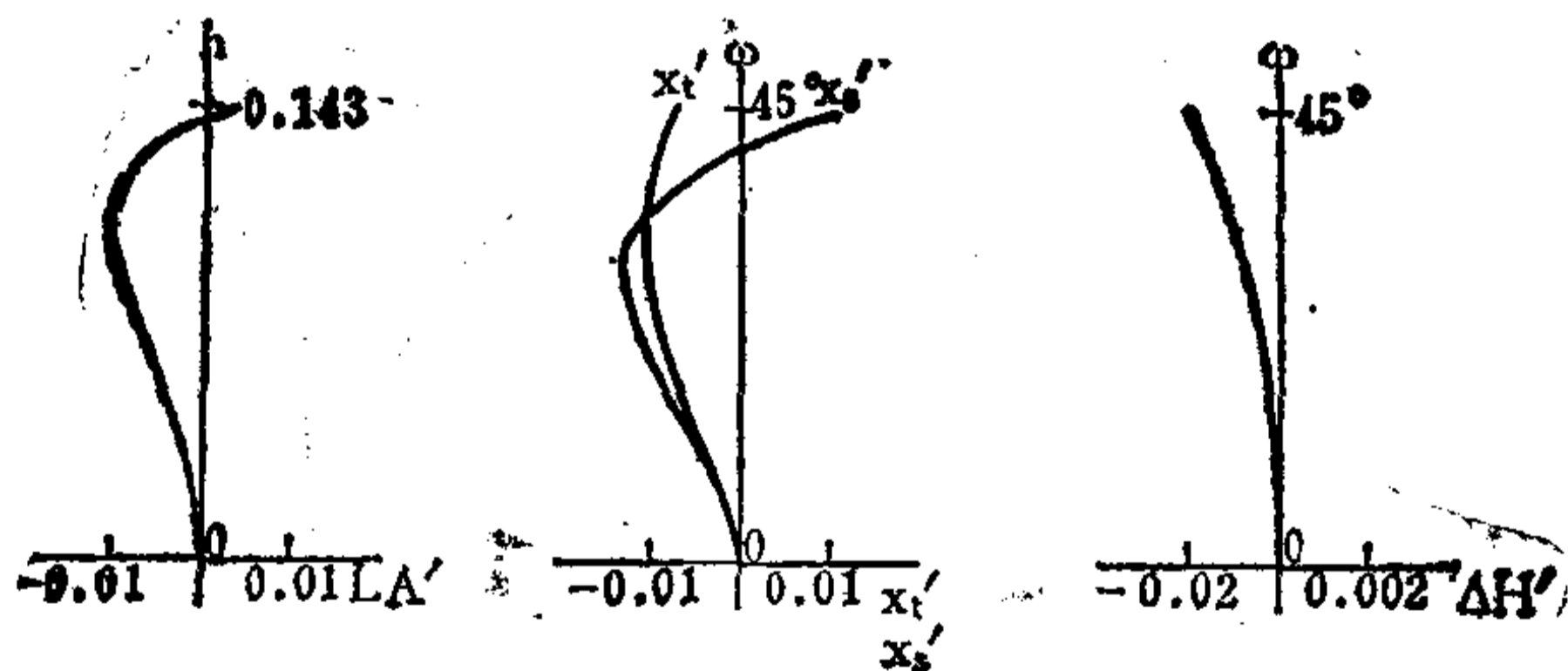
F.A.=±45°



序号	r	d	n	v	序号	r	d	n	v
1	0.7841	0.2078	1.7234	38.0	8	1.1836	0.0482*		
2	1.5939	0.0039			9	7.6842	0.1059	1.6204	60.3
3	0.5678	0.0643	1.4875	70.0	10	-7.6842	0.0357		
4	0.2137	0.1607			11	-0.8872	0.0627	1.4875	70.0
5	1.3937	0.0964	1.8052	25.5	12	-0.3130	0.0039		
6	0.4211	0.0161			13	-3.9127	0.0702	1.4875	70.0
7	0.5244	0.1607	1.8061	40.7	14	-0.7442			

0.0482\* = 0.0241 + 0.0241

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(100)
	-0.00128	0.00118	-0.00056	-0.00188	-0.00457	1	-2%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{T1}$	$K'_{T0.7}$
100	0.00436	-0.0199	-0.0077	0.0115	-0.0192	0.00147	0.00099
70	-0.00992	-0.0080	-0.0108	-0.0134	0.0025	-0.00203	-0.00028



编号: 03-02-030

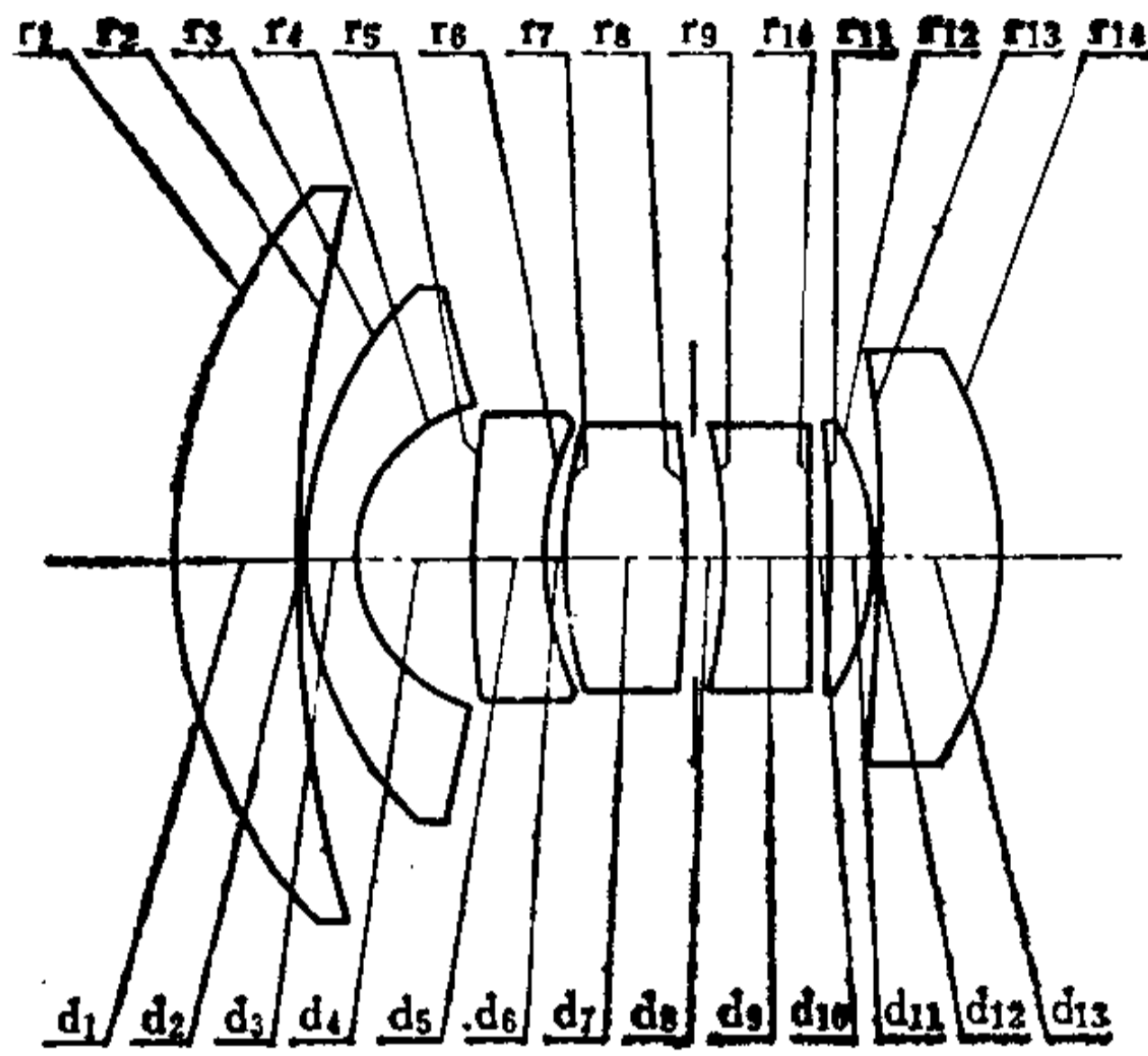
# 广角摄影物镜

E.F.L=1.027

B.F.L=1.343

FNo.=3.5

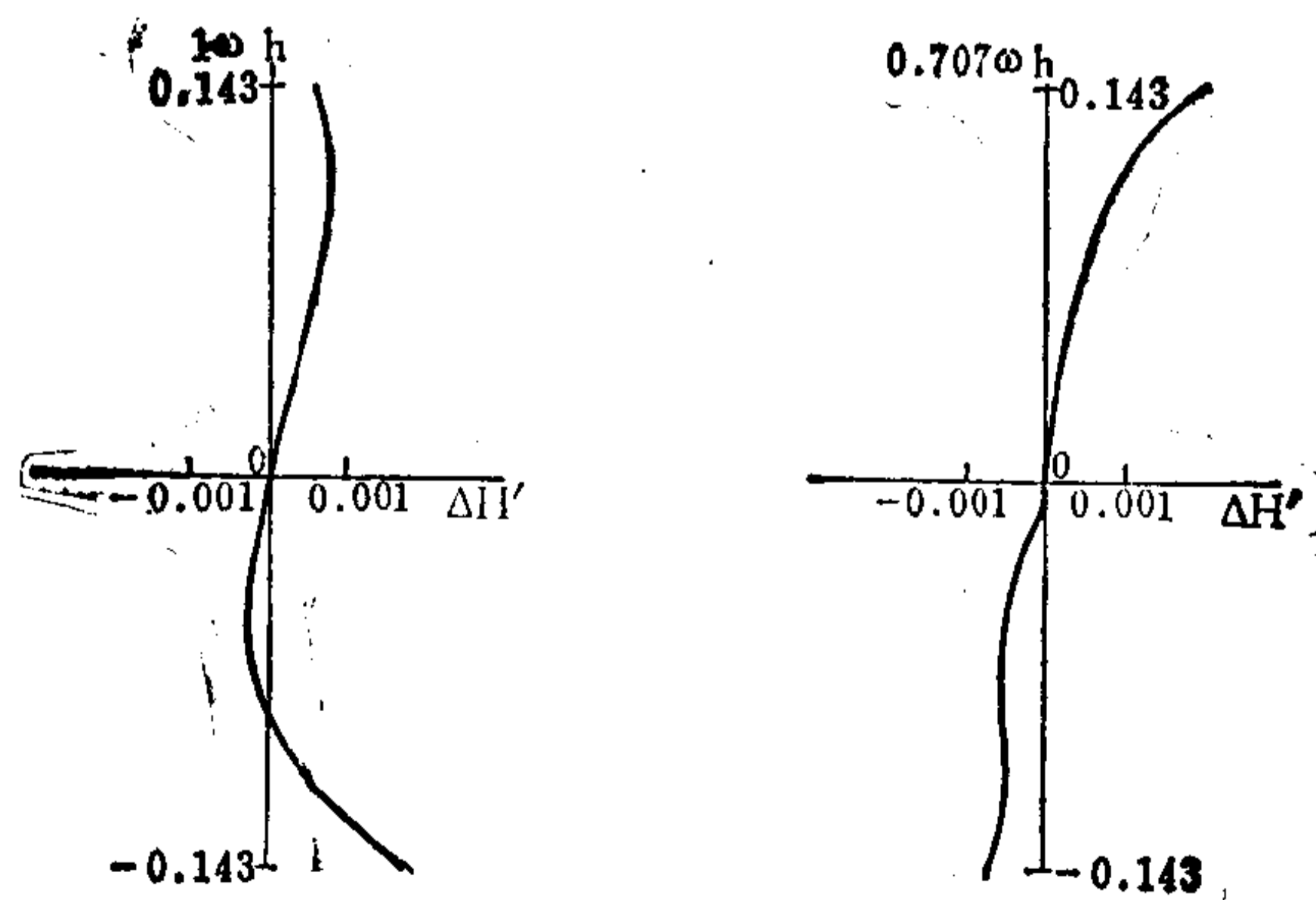
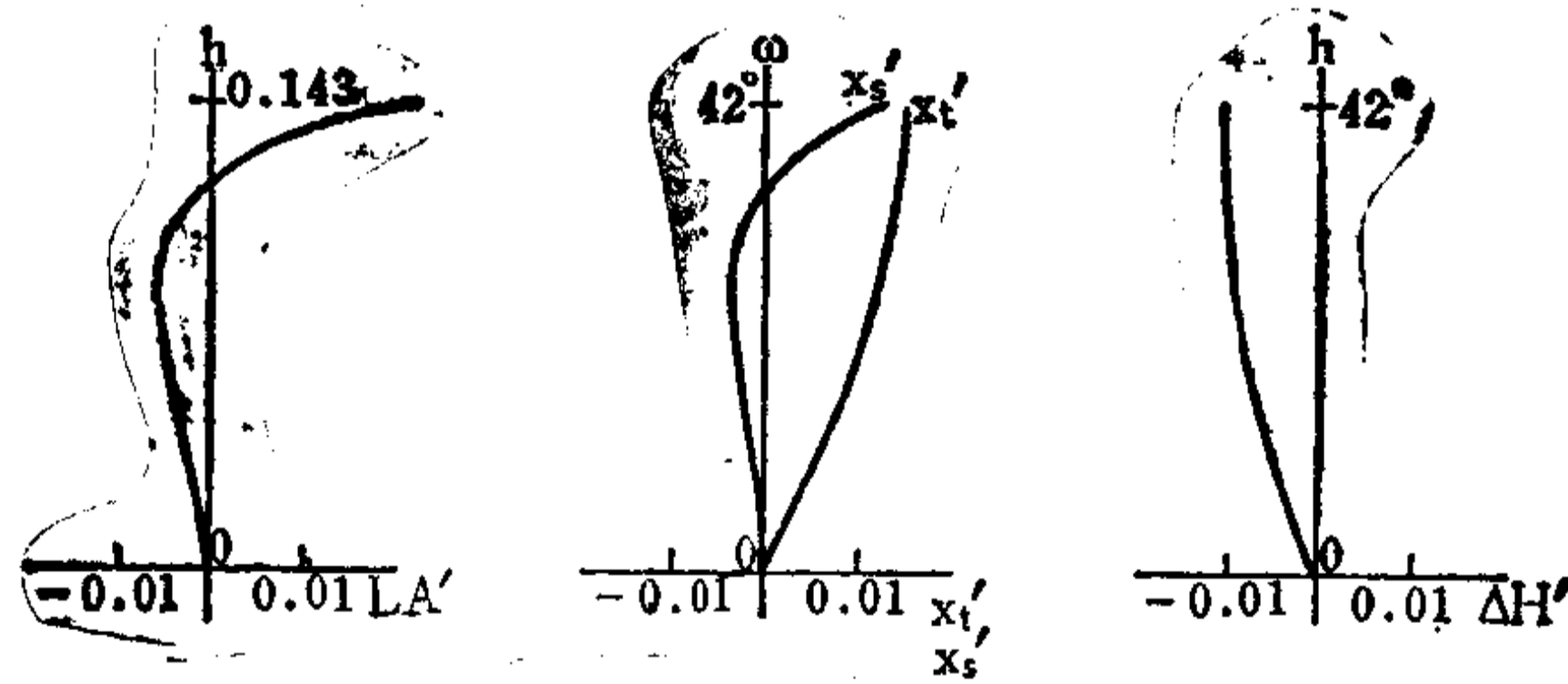
F.A.=±42°\*\*



序号	r	d	n	v	序号	r	d	n	v
1	0.8135	0.2015	1.6201	49.8	8	-2.2049	0.0549*		
2	2.1624	0.0039			9	-0.8916	0.1362	1.8052	25.5
3	0.5602	0.0731	1.4875	70.0	10	54.1565	0.0244		
4	0.2336	0.1830			11	-2.0378	0.0654	1.4875	70.0
5	4.8462	0.1099	1.8052	25.5	12	-0.3698	0.0039		
6	0.4544	0.0182			13	-3.2107	0.1830	1.5101	63.4
7	0.6476	0.1830	1.8052	25.5	14	-0.5841			

$0.05490^* = 0.02745 + 0.02745$

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.00108	0.00082	0.00047	-0.00153	-0.00794	0.93	-1.2%
h 或 $\omega$ %	LA'	$\Delta H'$	$x_t'$	$x_s'$	$x_t' - x_s'$	$K_{T1}'$	$K_{T0.7}'$
100	0.0225	-0.0109	0.0148	0.0127	0.0021	0.00125	0.00057
70	-0.0051	-0.0093	0.0128	-0.0038	0.0166	0.00074	0.00025



编号: 03-02-031

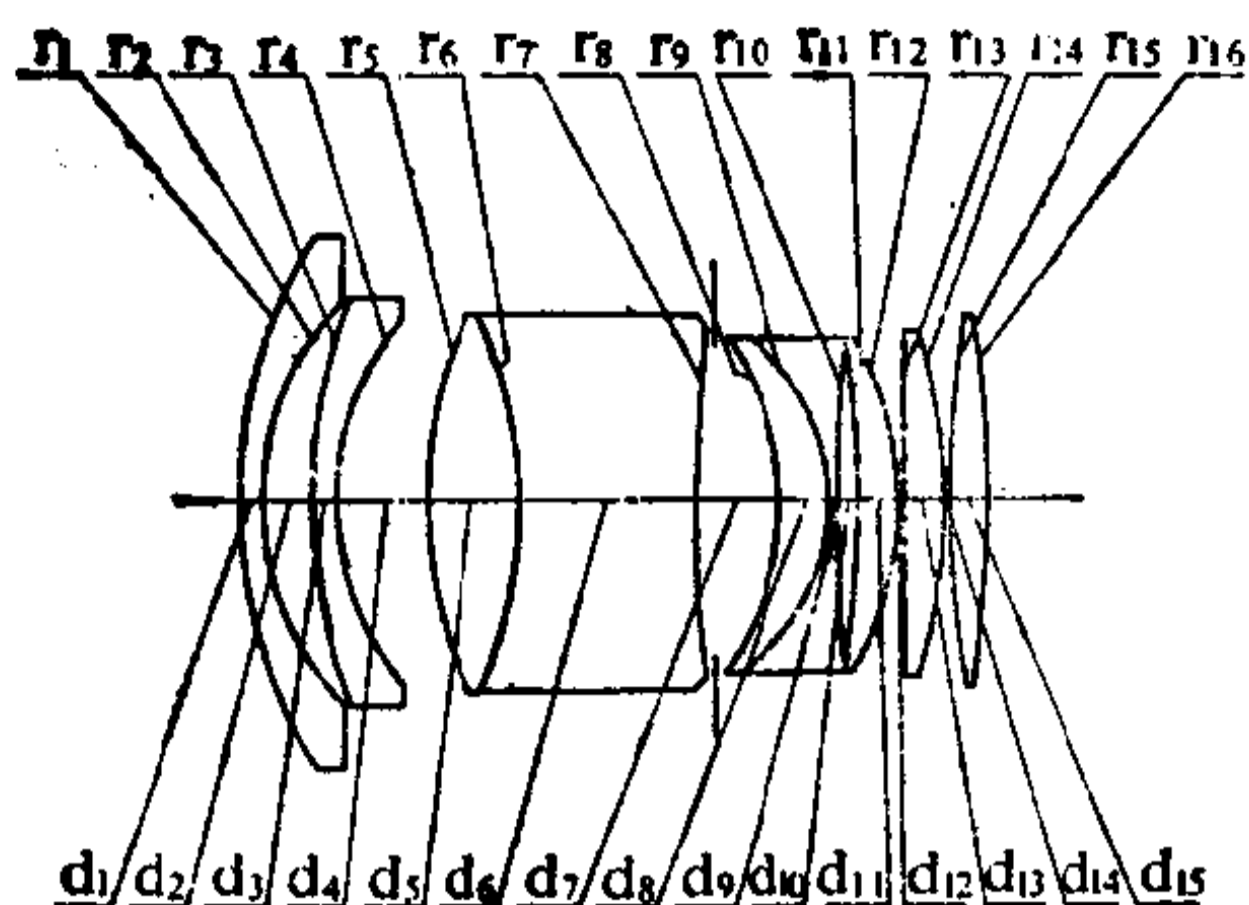
# 大孔径广角摄影物镜

E.F.L = 100

B.F.L = 106.44

FNo. = 1.4

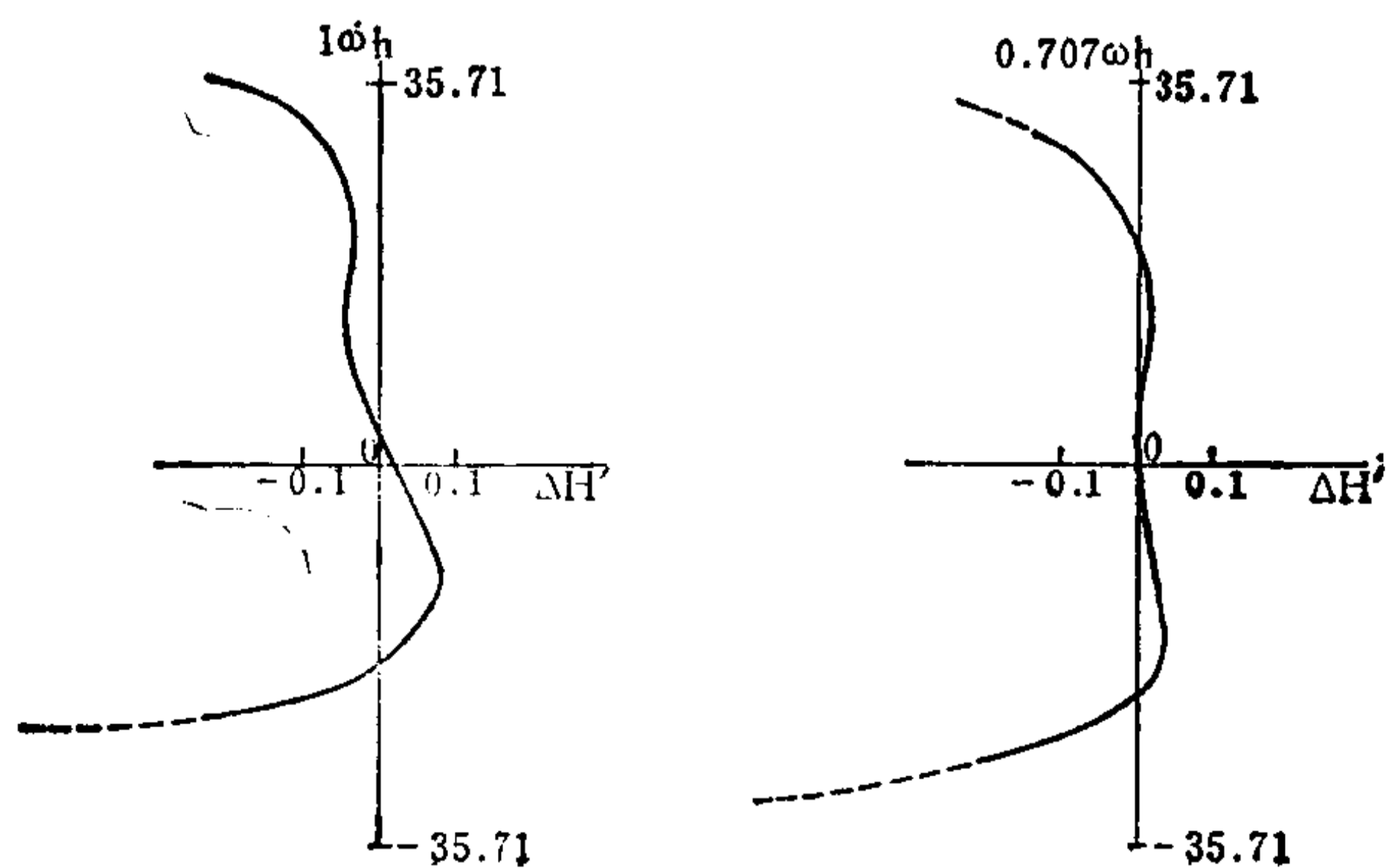
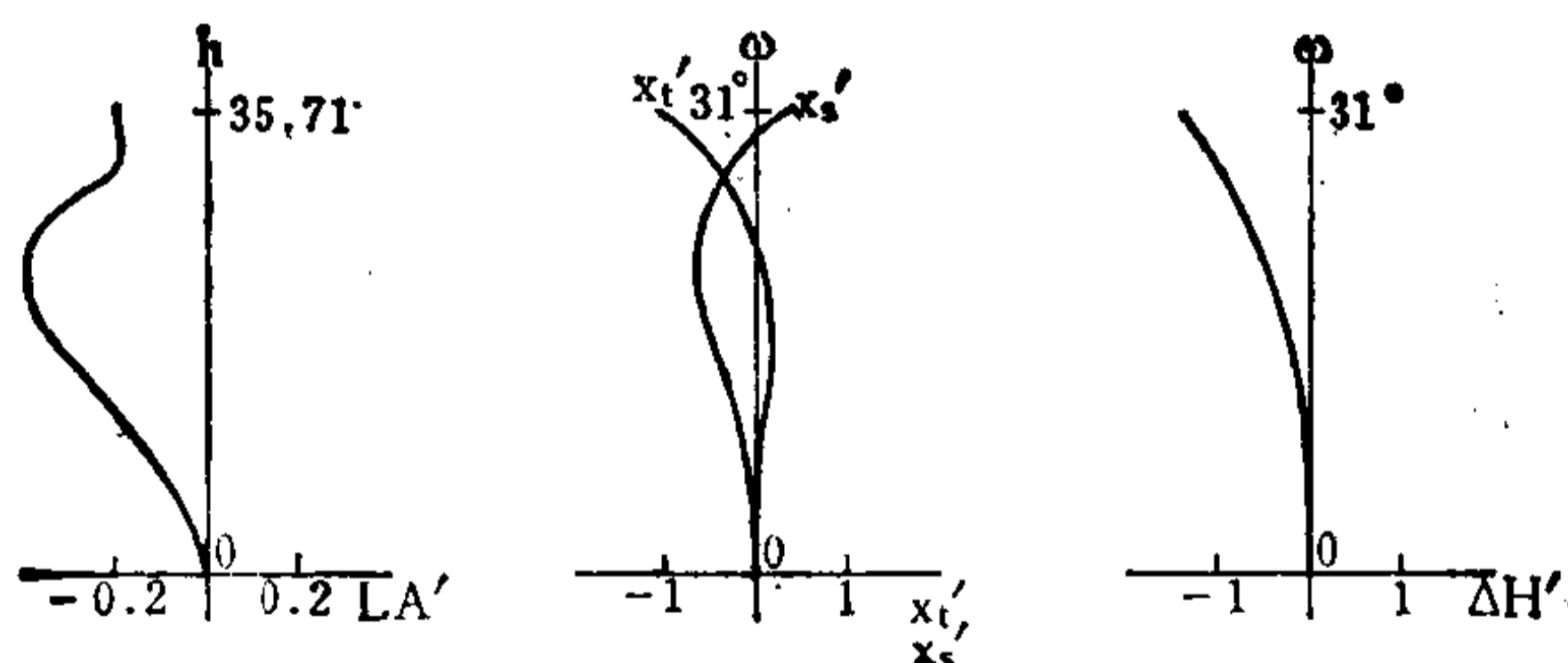
F.A. = ±31°



序号	r	d	n	v	序号	r	d	n	v
1	129.722	5.833	1.56883	56.0	9	-52.778	2.778	1.78470	26.1
2	71.111	12.222			10	515.056	4.722		
3	138.889	5.833	1.54814	45.9	11	-314.667	11.111	1.77250	49.5
4	73.333	24.444			12	-87.500	0.139		
5	107.778	23.611	1.80411	46.4	13	-2777.778	10.556	1.77250	49.5
6	-116.667	44.444	1.50137	56.5	14	-151.250	0.139		
7	432.031	22.222*			15	291.669	9.444	1.71300	53.9
8	-74.194	12.222	1.80411	46.4	16	-304.097			

$22.222^* = 7.000 + 15.222$

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.501	0.199	0.192	-0.713	-1.211	60.1	-2.3%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{T1}$	$K'_{T0.7}$
100	-0.199	-1.404	-1.121	0.357	-1.478	-2.055	-0.294
70	-0.396	-0.648	-0.052	-0.637	0.585	-0.998	-0.065



编号: 03-02-032

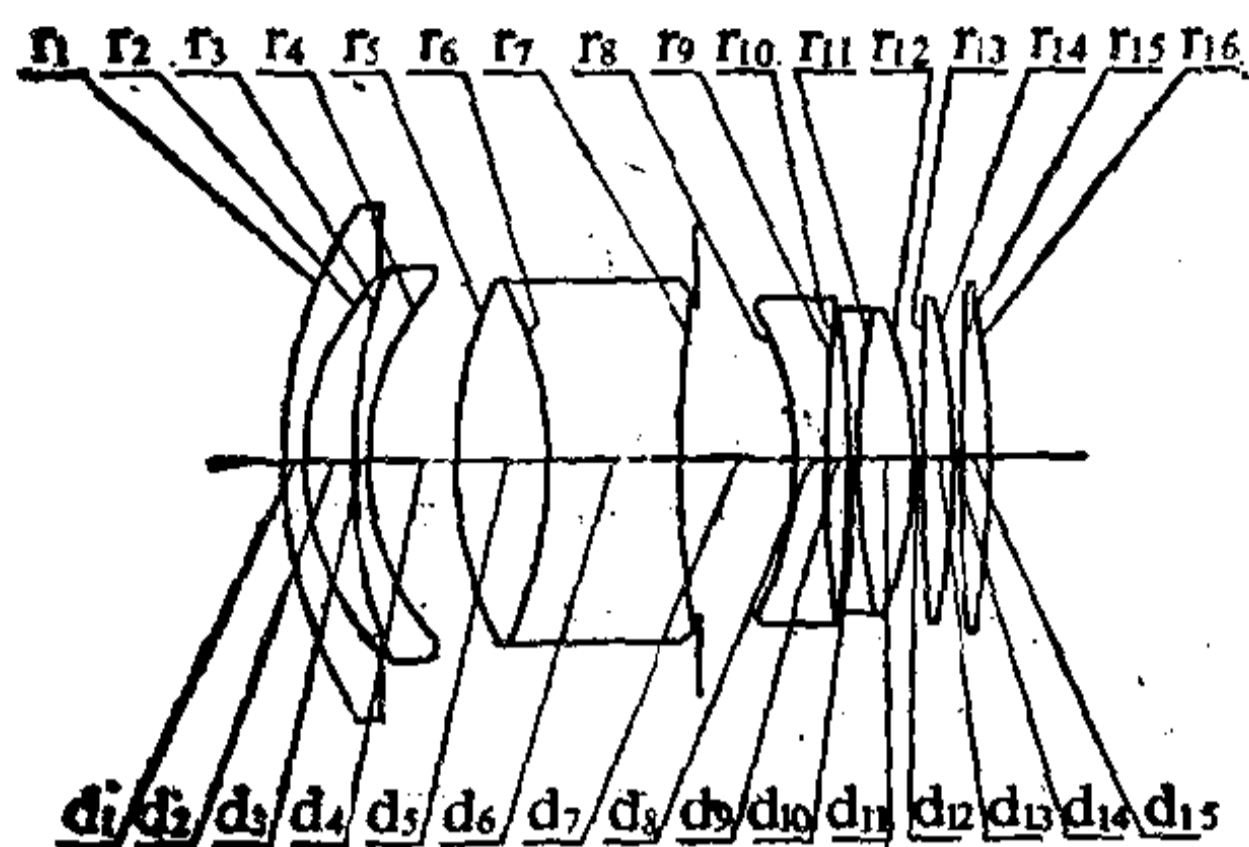
# 大孔径广角摄影物镜

E.F.L=100

B.F.L=107.77

FNo.=1.4

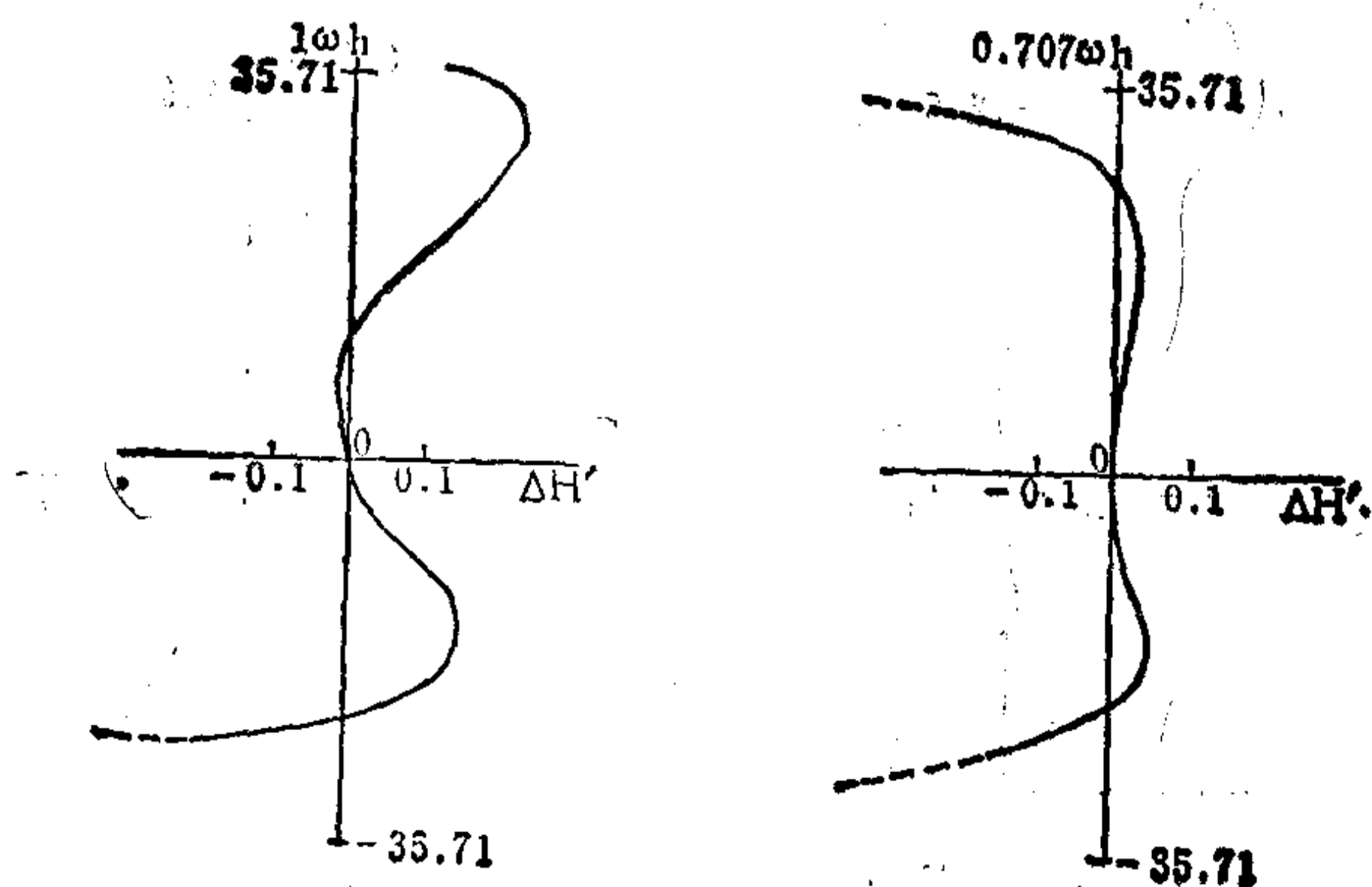
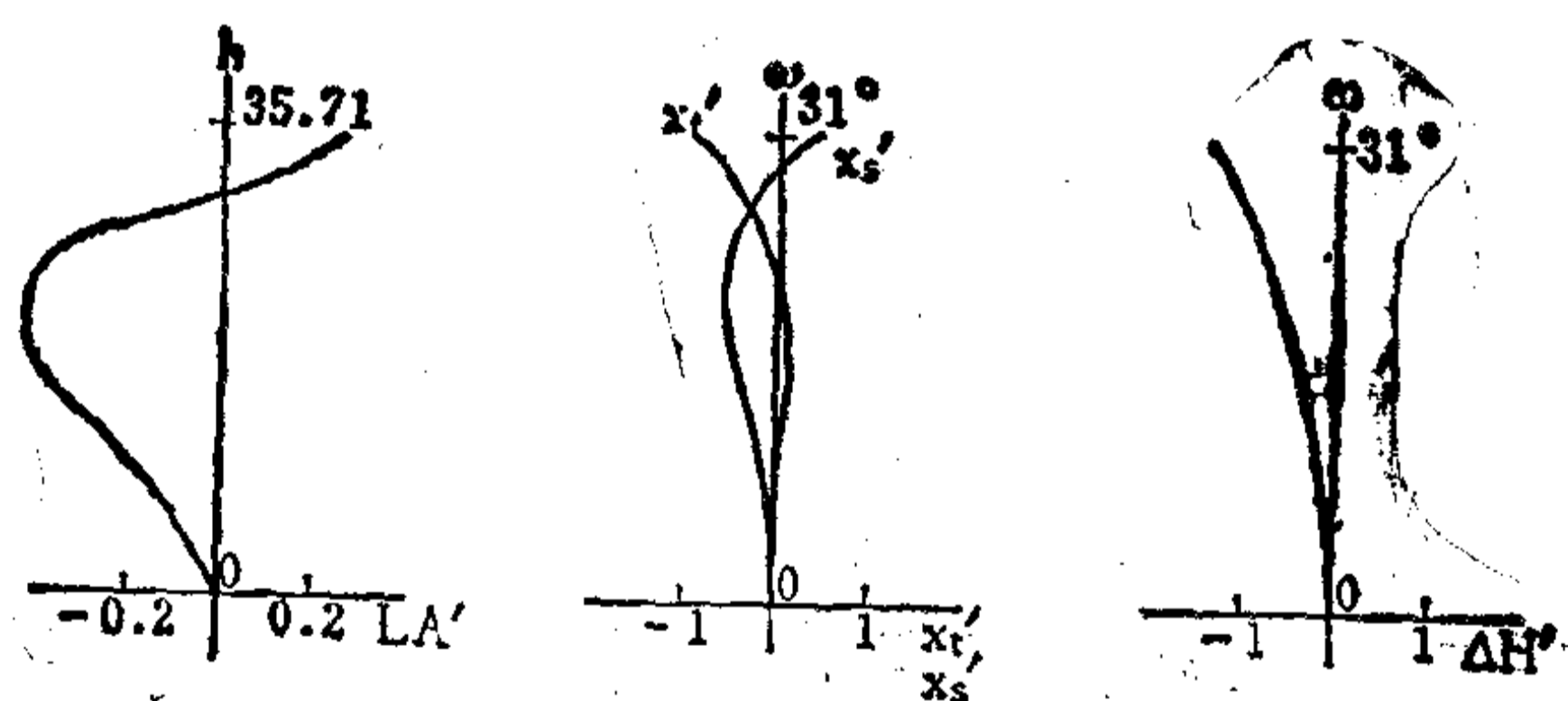
F<sub>1/2</sub>A = ±31°



序号	r	d	n	v	序号	r	d	n	v
1	123.611	5.556	1.56883	58.0	9	388.889	5.000		
2	67.722	11.667			10	-361.111	2.778	1.78470	26.1
3	123.611	5.556	1.54814	45.9	11	166.667	15.000	1.76684	46.2
4	69.778	22.222			12	-93.056	0.278		
5	108.333	23.611	1.80411	46.4	13	1861.111	9.444	1.74443	49.4
6	-106.944	34.722	1.50137	56.5	14	-154.167	0.278		
7	333.33	28.889*			15	444.444	8.333	1.74443	49.4
8	-83.889	7.778	1.78470	26.1	16	-267.586			

28.889\* = 7.000 + 21.889

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.615	0.164	0.211	-0.717	-1.256	60.1	-2.3%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{ti}$	$K'_{i0.7}$
100	0.256	±1.393	-1.062	0.427	-1.489	1.626	-0.018
70	-0.413	-0.660	-0.010	-0.622	0.612	-1.235	-0.054



编号: 03-02-033

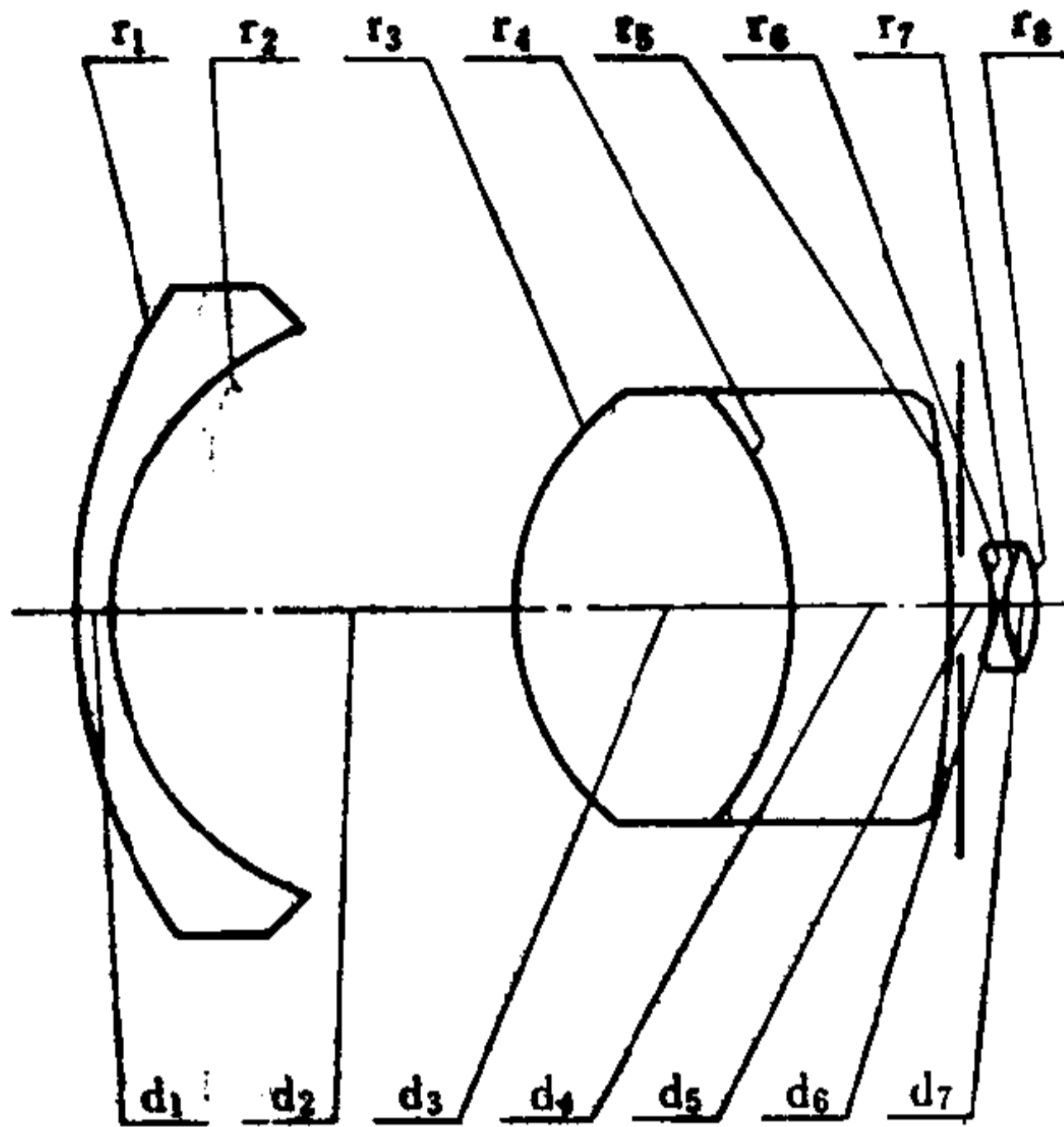
### 长后截距广角物镜

E.F.L=99.8

B.F.L=74.5

FNo.=4

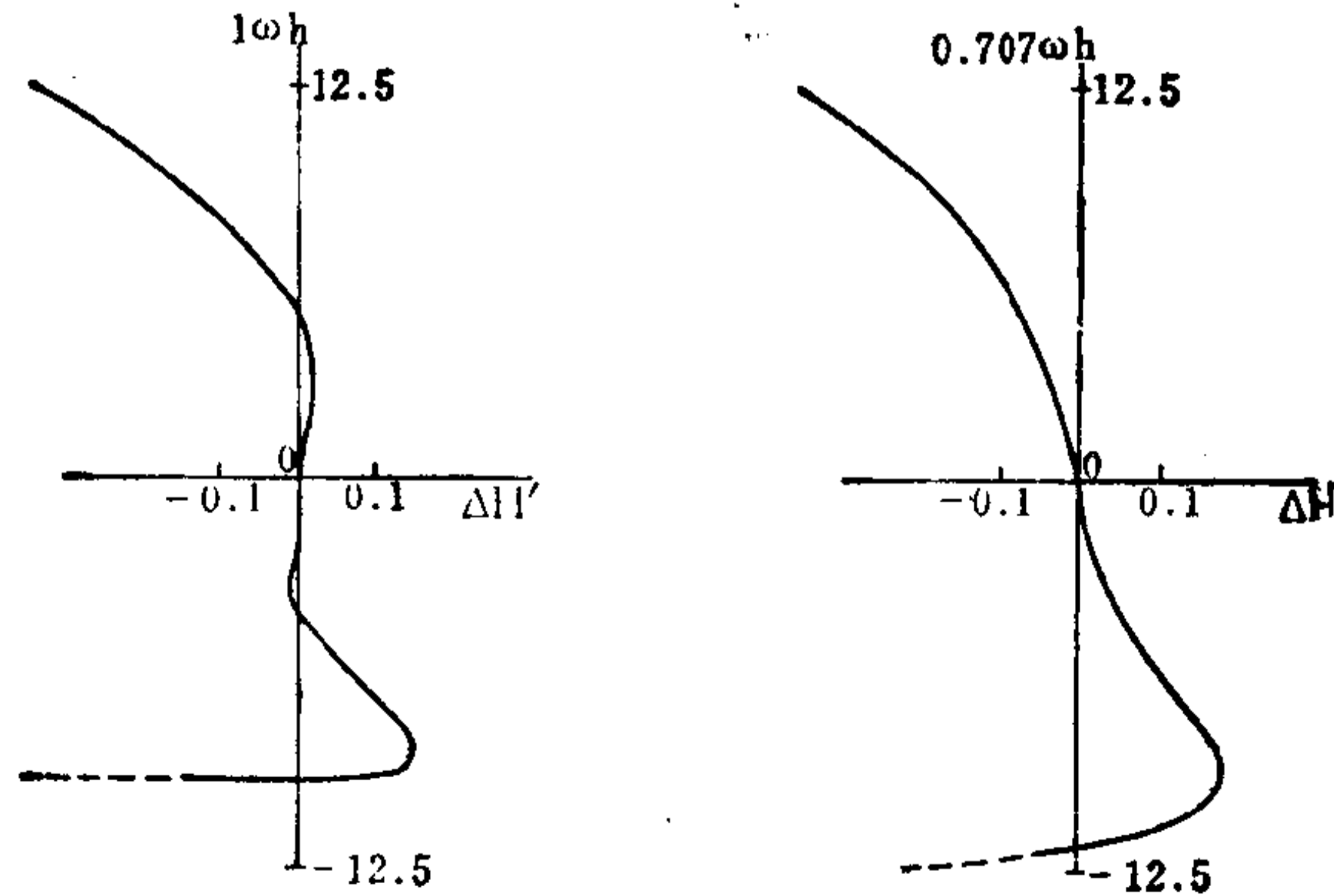
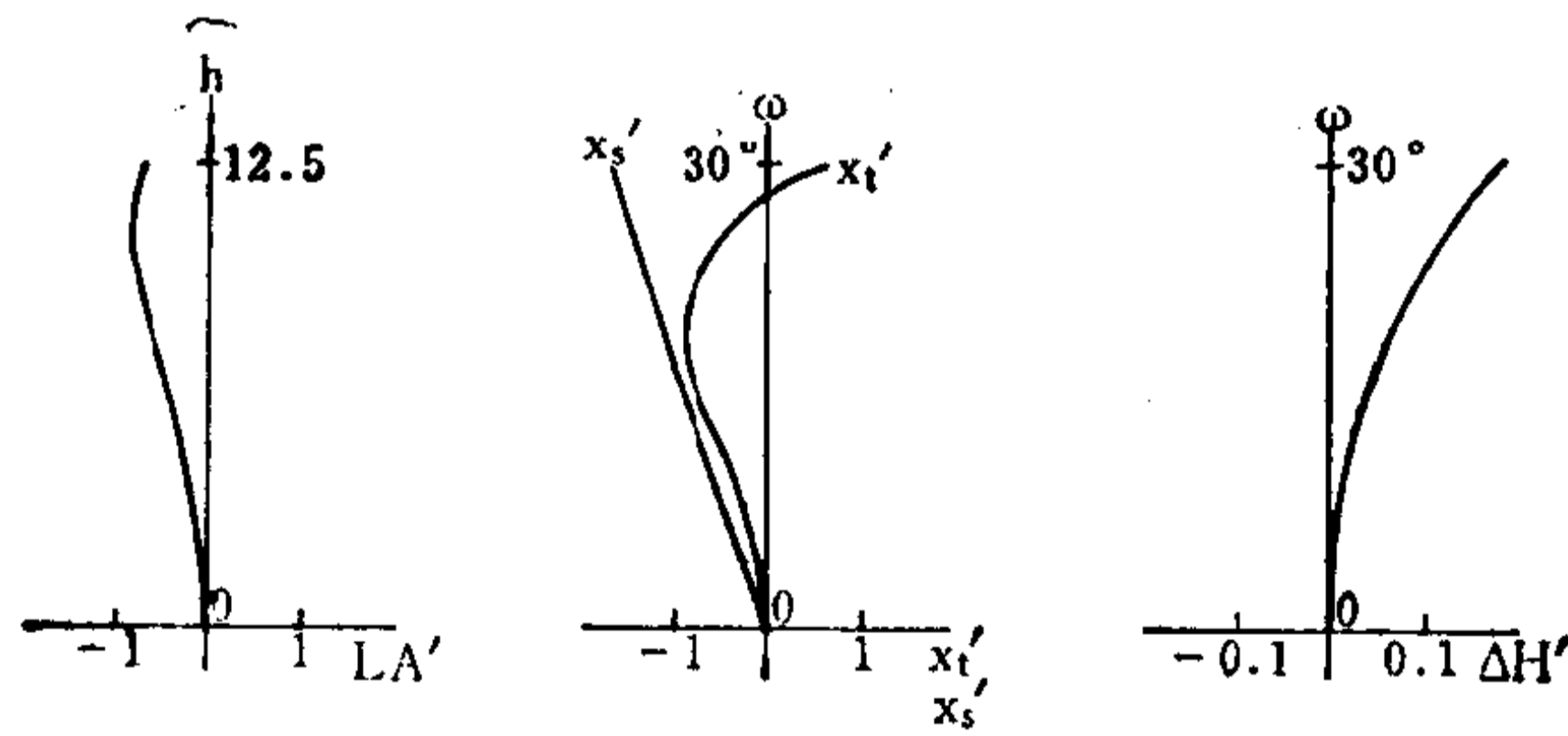
F.A.=±30°



序号	r	d	$n_e$	$v_e$	序号	r	d	$n_e$	$v_e$
1	99.80	5.94	1.76256	31.58	5	-204.50	7.43*		
2	53.61	71.20			6	-22.80	2.36	1.62408	36.11
3	48.17	48.95	1.67133	41.64	7	214.00	4.64	1.56181	60.96
4	-58.18	27.70	1.76859	26.31	8	-27.79			

$7.43^\circ = 1.71 + 5.72$

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.0534	0.0009	-0.0067	-0.0835	0.0454	57.6	0.3%
h 或 $\omega\%$	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{T1}$	$K'_{T0.7}$
100	-0.725	0.170	0.621	-1.725	2.346		0.0180
70	-0.667	0.075	-0.893	-1.229	0.336	-0.4110	0.0019





编号: 03-02-034

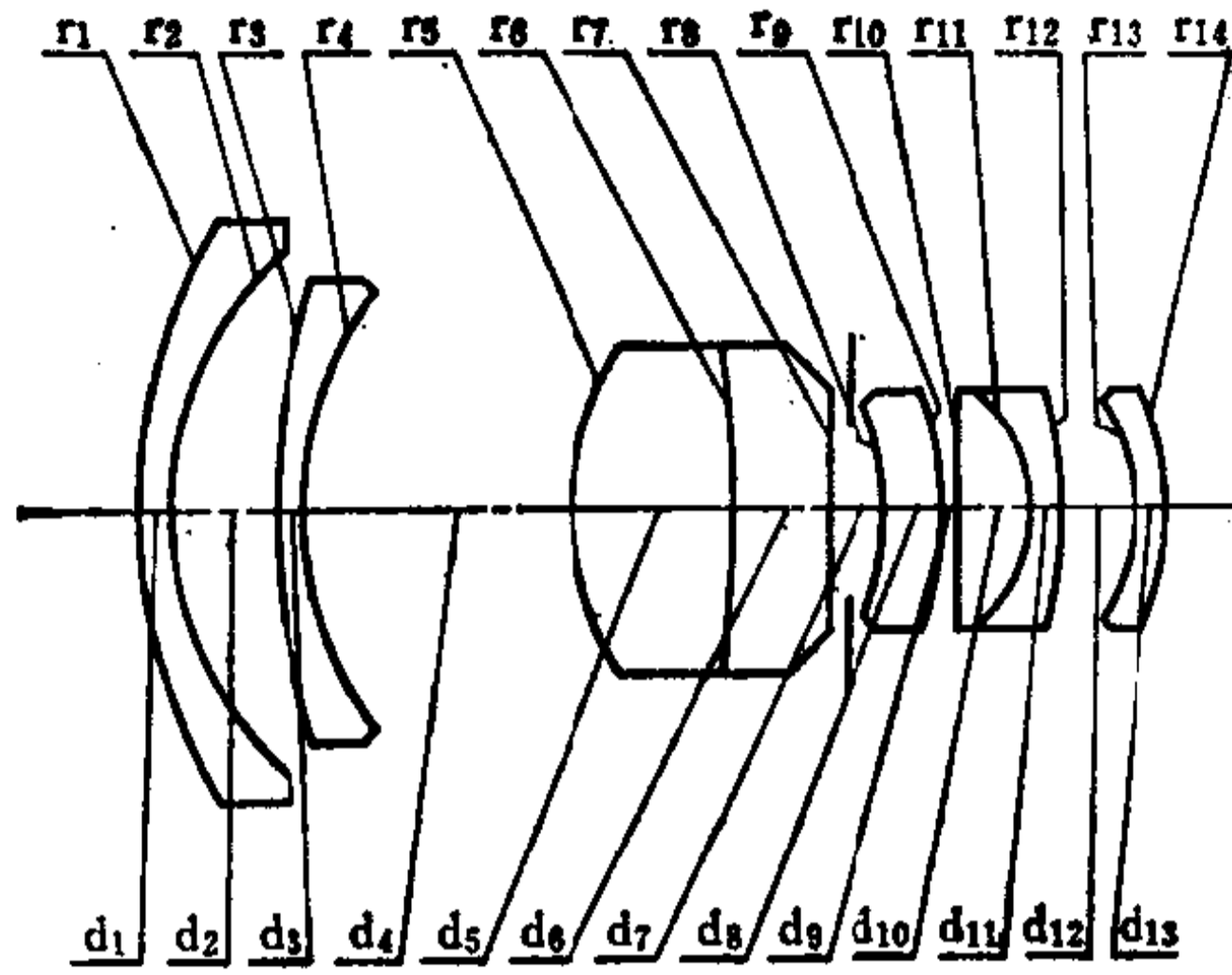
# 长后截距超广角物镜

E.F.L=99.8

B.F.L=73.7

FN<sub>0</sub>. = 3.4

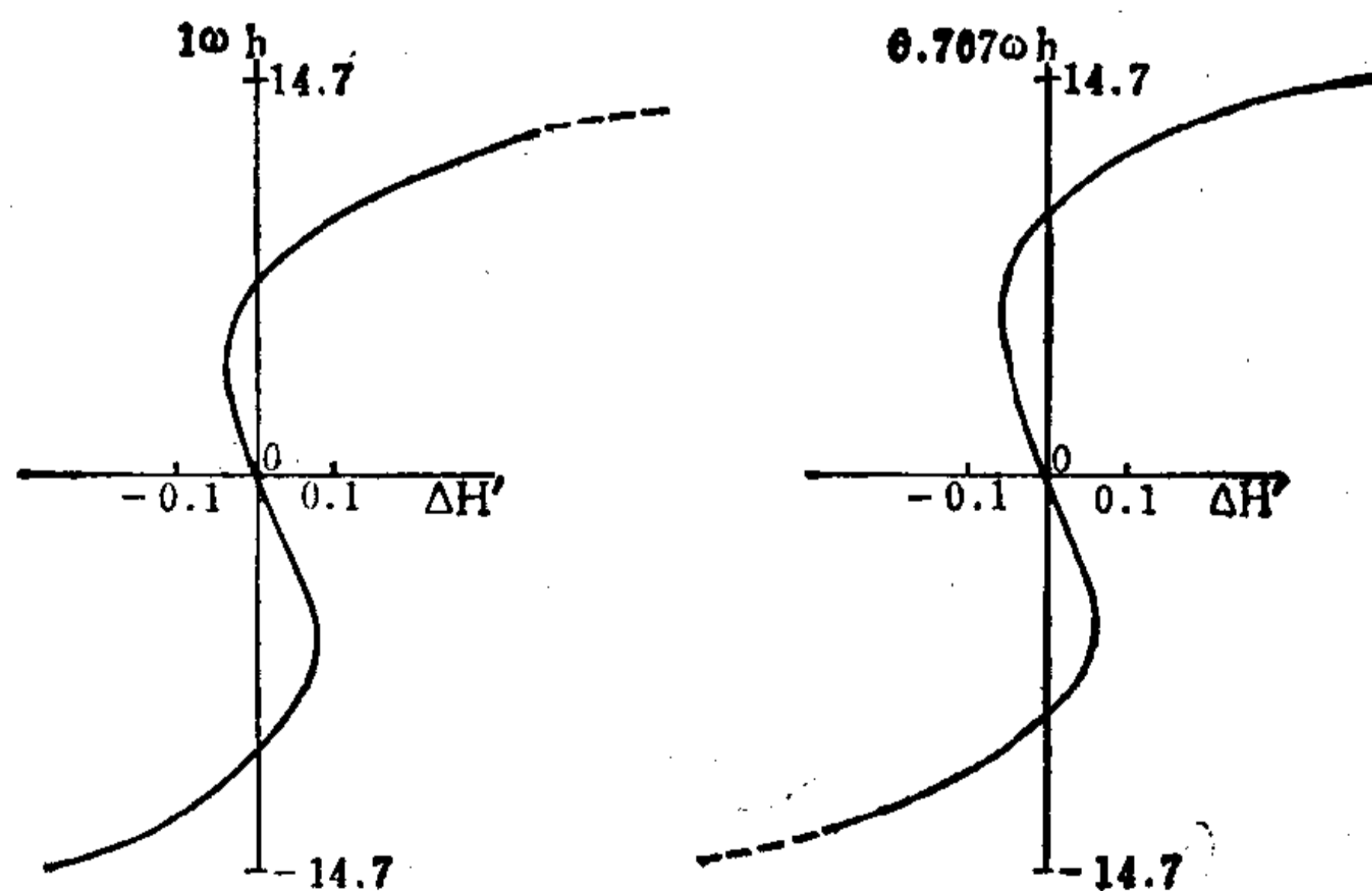
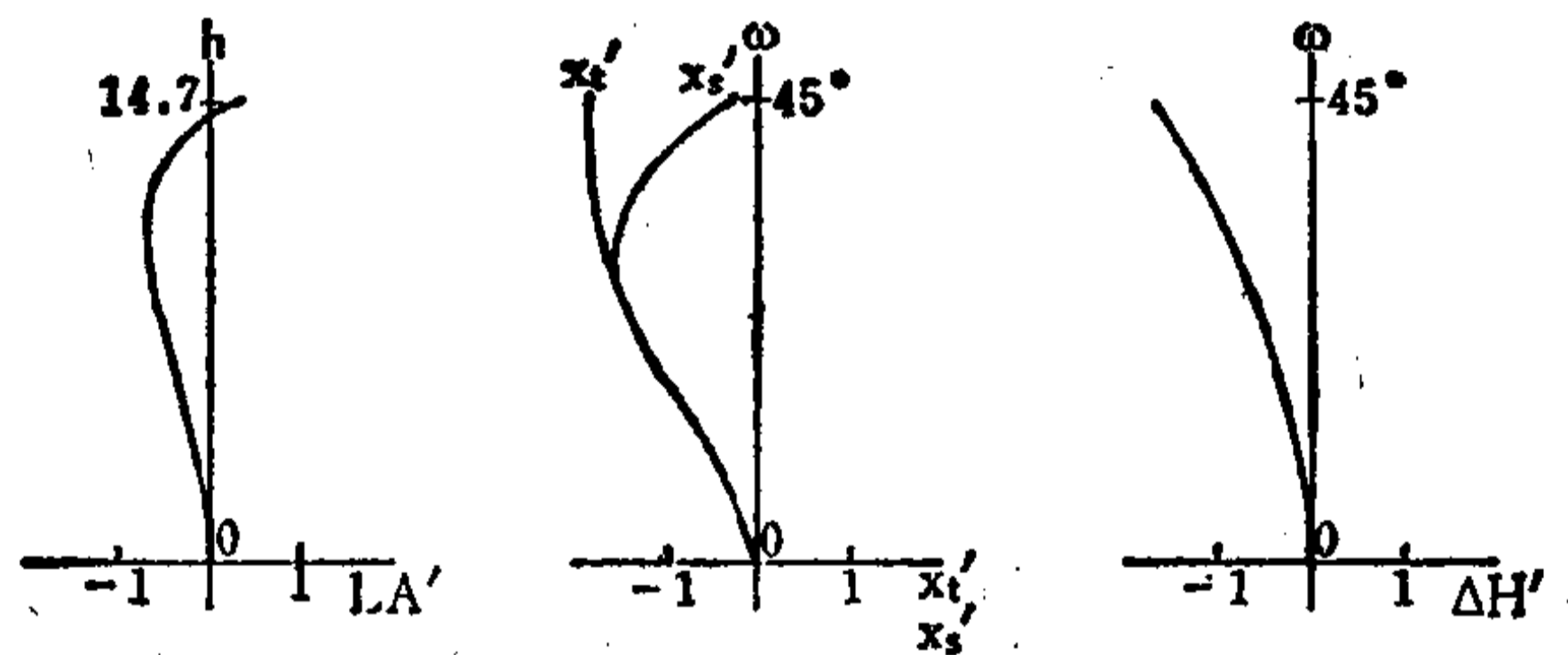
F.A. = ±45°



序号	r	d	n <sub>e</sub>	v <sub>e</sub>	序号	r	d	n <sub>e</sub>	v <sub>e</sub>
1	98.30	5.00	1.59263	40.66	8	-46.08	10.40	1.56295	46.88
2	61.23	18.30			9	-61.23	2.17		
3	133.30	5.00	1.59263	40.66	10	-1365.00	12.50	1.68585	47.92
4	63.27	47.20			11	-26.83	5.60	1.76847	26.74
5	52.00	28.30	1.74795	44.49	12	-81.37	12.50		
6	-189.30	16.20	1.76847	26.74	13	-32.98	5.00	1.56181	60.96
7	∞	9.56*			14	-49.65			

9.56\* = 2.85 + 6.71

	ΣS <sub>1</sub>	ΣS <sub>2</sub>	ΣS <sub>3</sub>	ΣS <sub>4</sub>	ΣS <sub>5</sub>	HI	QP(1ω)
	-0.0886	0.0065	-0.0157	-0.1324	-0.4939	99.8	-1.8%
h 或 ω %	LA'	ΔH'	x <sub>t</sub> '	x <sub>s</sub> '	x <sub>t</sub> ' - x <sub>s</sub> '	K <sub>f1</sub>	K <sub>f0.7</sub>
100	0.305	-1.761	-1.943	-0.380	-1.563	0.205	0.072
70	-0.672	-0.841	-1.737	-1.610	-0.127	-0.138	-0.027



编号: 03-02-035

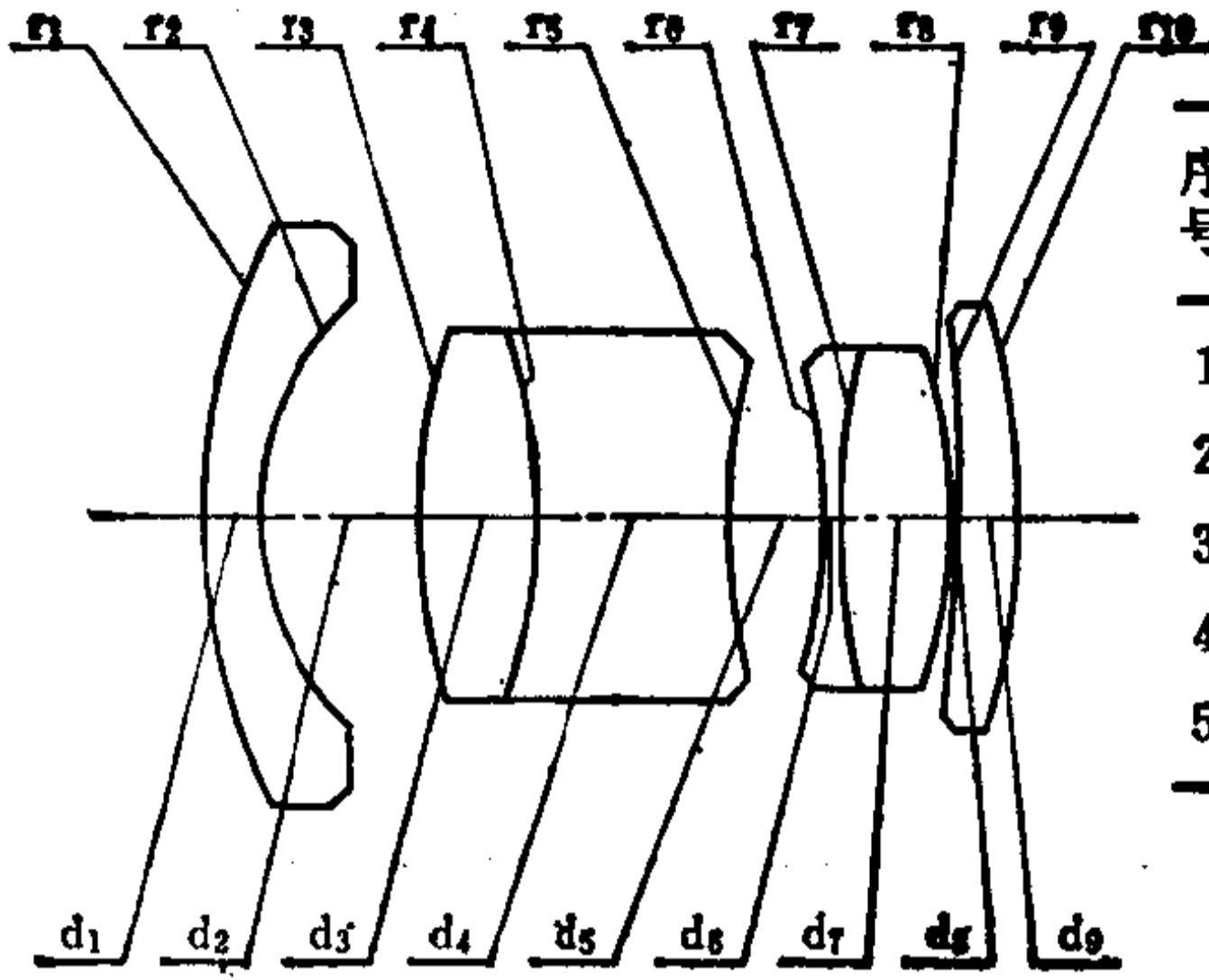
# 广角摄影物镜

E.F.L=1

B.F.L=1.0364

FNo.=2.8

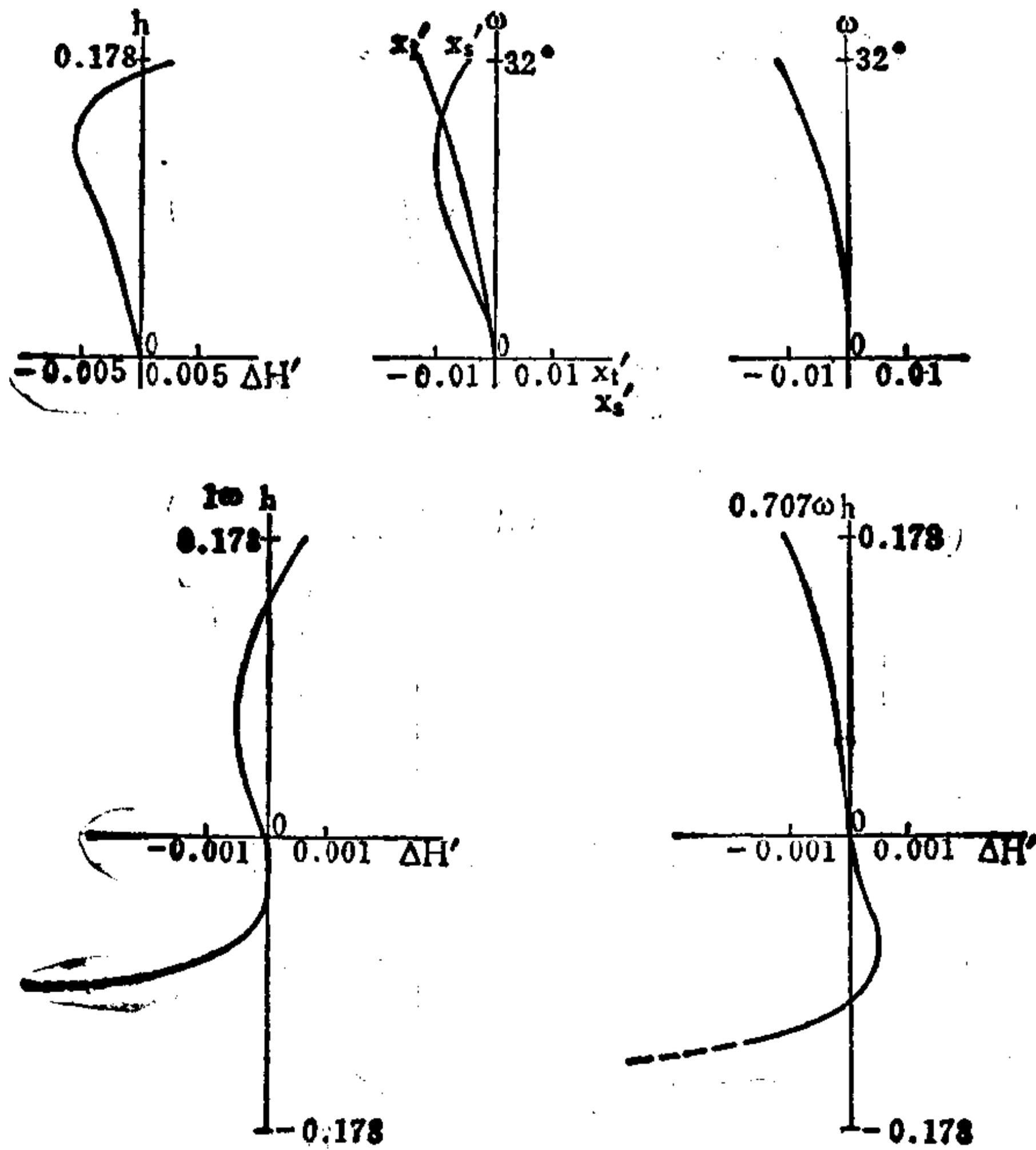
F.A.=±32°



序号	r	d	n <sub>D</sub>	v	序号	r	d	n <sub>D</sub>	v
1	0.71390	0.06805	1.47069	67.24	6	-0.62723	0.02450	1.80518	25.46
2	0.34518	0.19462			7	0.84232	0.13338	1.73520	41.00
3	0.74006	0.13822	1.72000	50.31	8	-0.53152	0.00272		
4	-0.69863	0.23681	1.50173	56.46	9	-5.83624	0.07349	1.74400	44.90
5	0.75612	0.10888*			10	-0.89233			

0.10888\* = 0.05000 + 0.05888

	ΣS <sub>1</sub>	ΣS <sub>2</sub>	ΣS <sub>3</sub>	ΣS <sub>4</sub>	ΣS <sub>5</sub>	HI	QP(1ω)
	-0.00135	0.00059	0.00014	-0.00205	-0.00410	0.63	-1.8%
h 或 ω %	LA'	ΔH'	x <sub>i</sub> '	x <sub>s</sub> '	x <sub>i</sub> ' - x <sub>s</sub> '	K <sub>T1</sub> '	K <sub>T0.7</sub> '
100	0.00237	-0.0113	-0.0127	-0.0046	-0.0081	-0.030	-0.006
70	-0.00598	-0.0047	-0.0078	-0.0108	0.0030	-0.010	-0.001





编号: 03-02-036

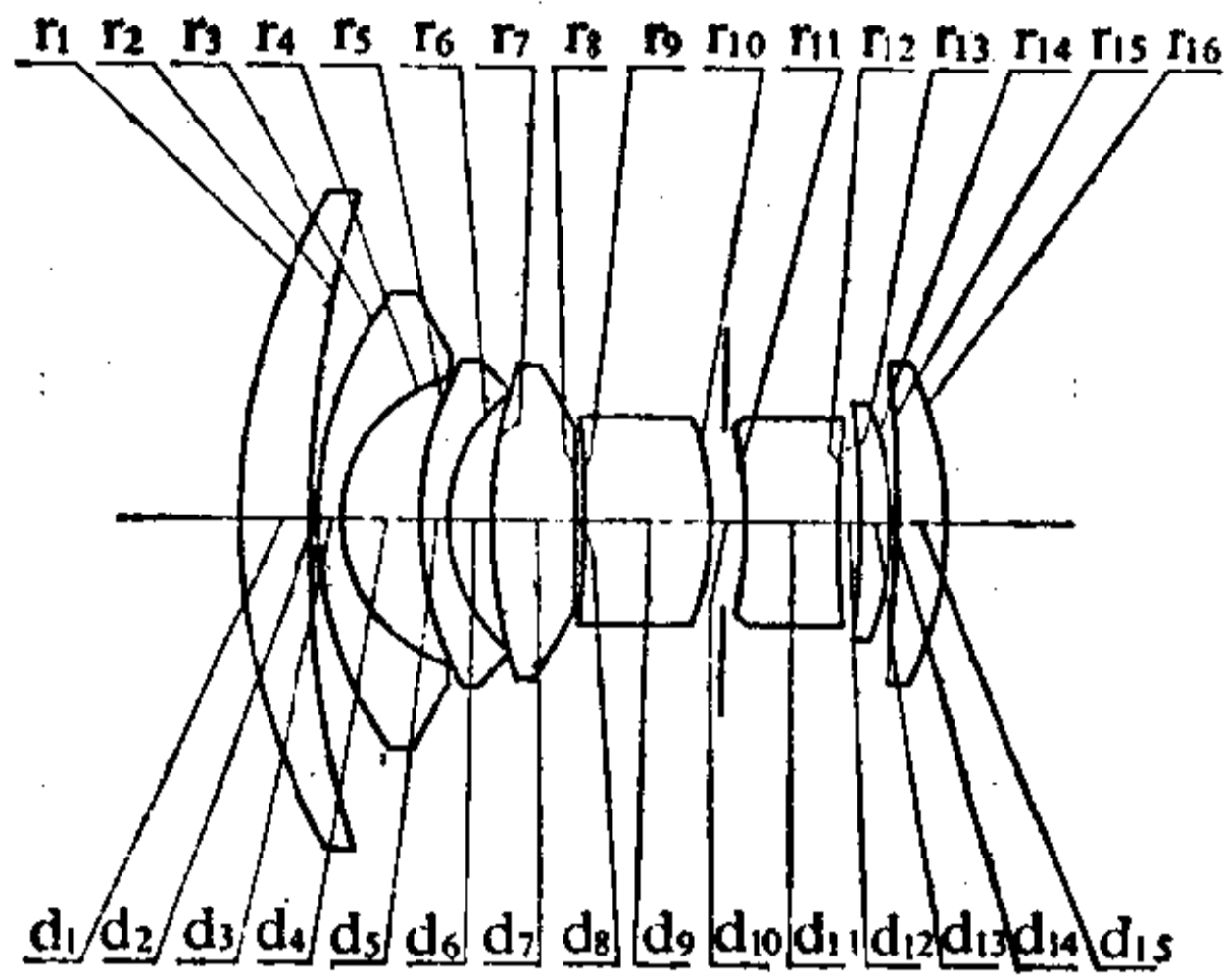
# 超 广 角 镜 头

E.F.L=1

B.F.L=1.7321

FNo.=3.5

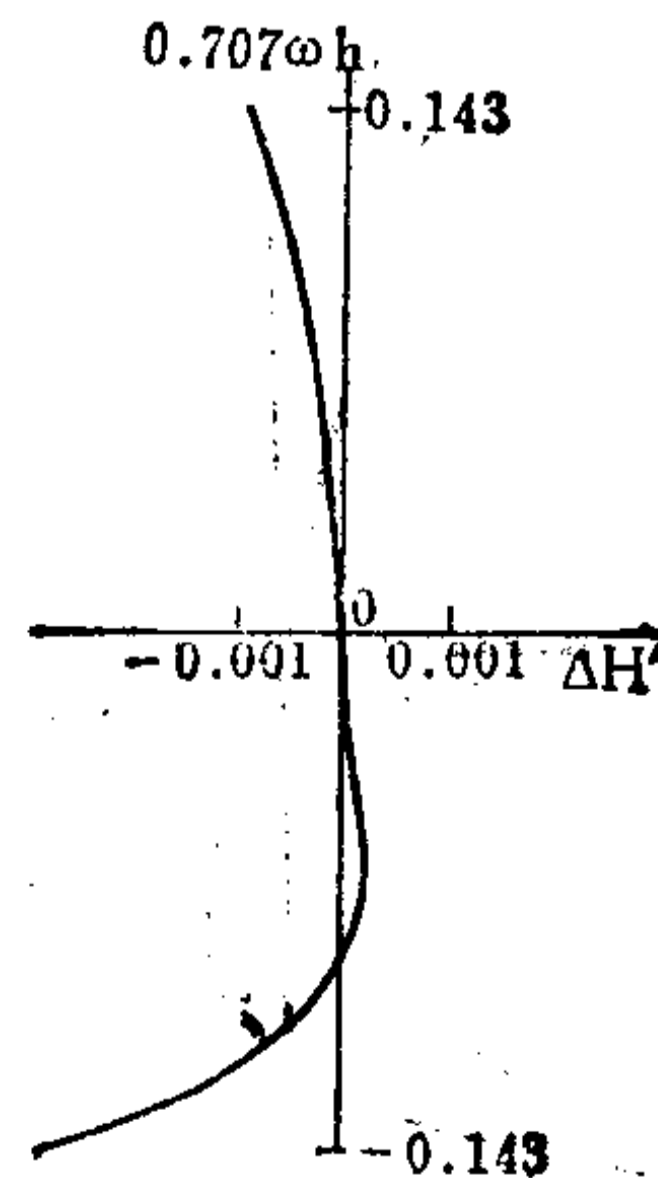
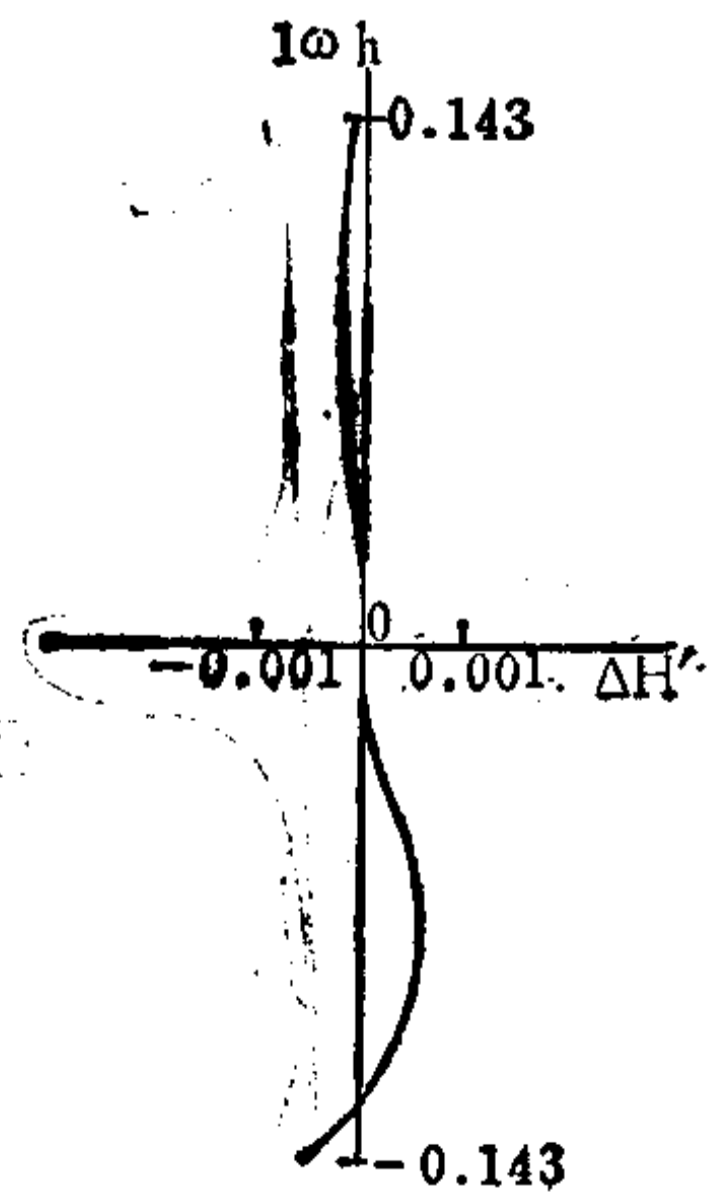
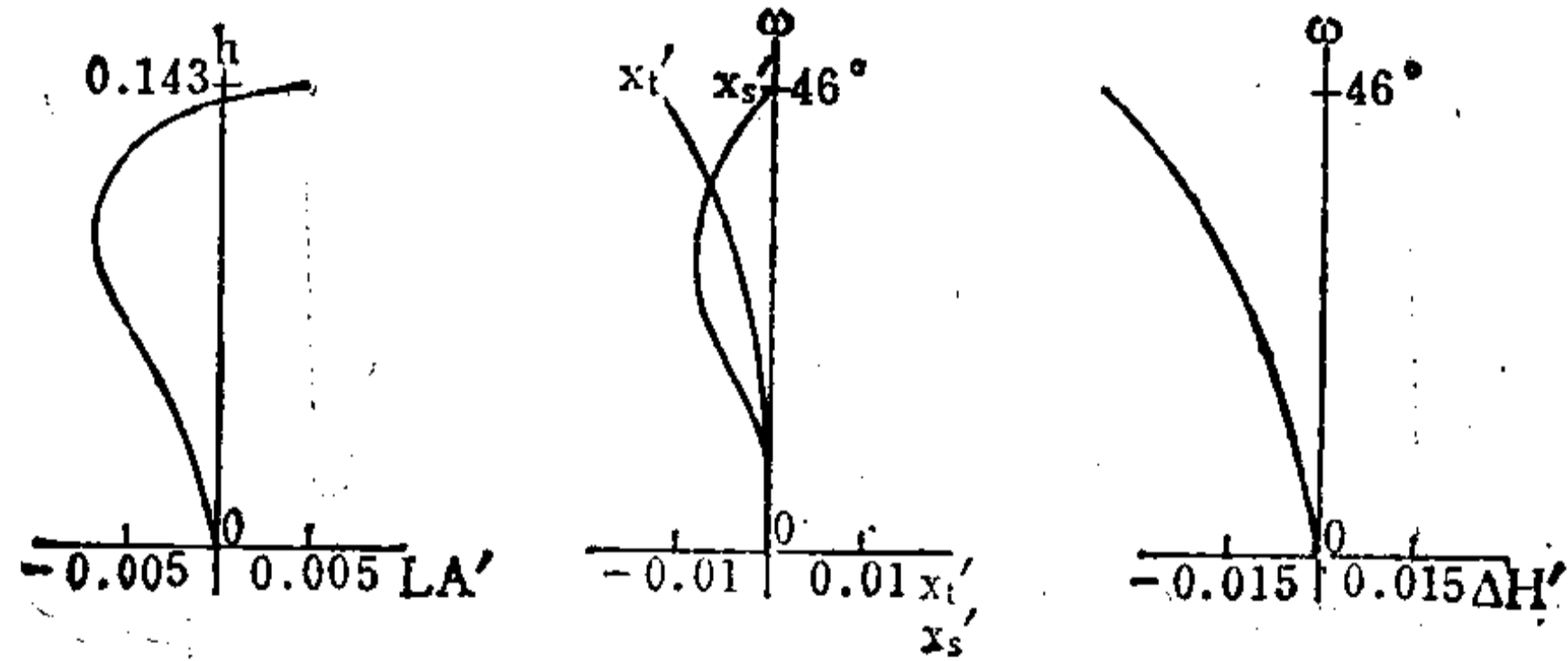
F.A.=±46°



序号	r	d	n	v	序号	r	d	n	v
1	1.6748	0.1856	1.7200	42.1	9	-28.0687	0.3550	1.6166	36.6
2	3.2590	0.0046			10	-0.6238	0.0743*		
3	0.9455	0.0696	1.6180	63.4	11	-1.0704	0.2506	1.8467	23.9
4	0.3825	0.2098			12	2.9904	0.0510		
5	0.9313	0.0696	1.7130	54	13	-2.3107	0.0849	1.6180	63.4
6	0.4333	0.1132			14	-0.7426	0.0070		
7	1.2940	0.2251	1.5955	39.2	15	-14.3292	0.1369	1.6180	63.4
8	-7.4482	0.0070			16	-0.9751			

$0.0743^* = 0.0343 + 0.0400$

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.00108	0.00109	-0.00088	-0.00087	-0.01018	1.04	-3.5%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{T1}$	$K'_{T0.7}$
100	0.0045	-0.0364	-0.0125	0.0003	-0.0128	-0.00029	0.00014
70	-0.0070	-0.0186	-0.0053	-0.0082	0.0029	-0.00195	-0.00036



编号: 03-02-037

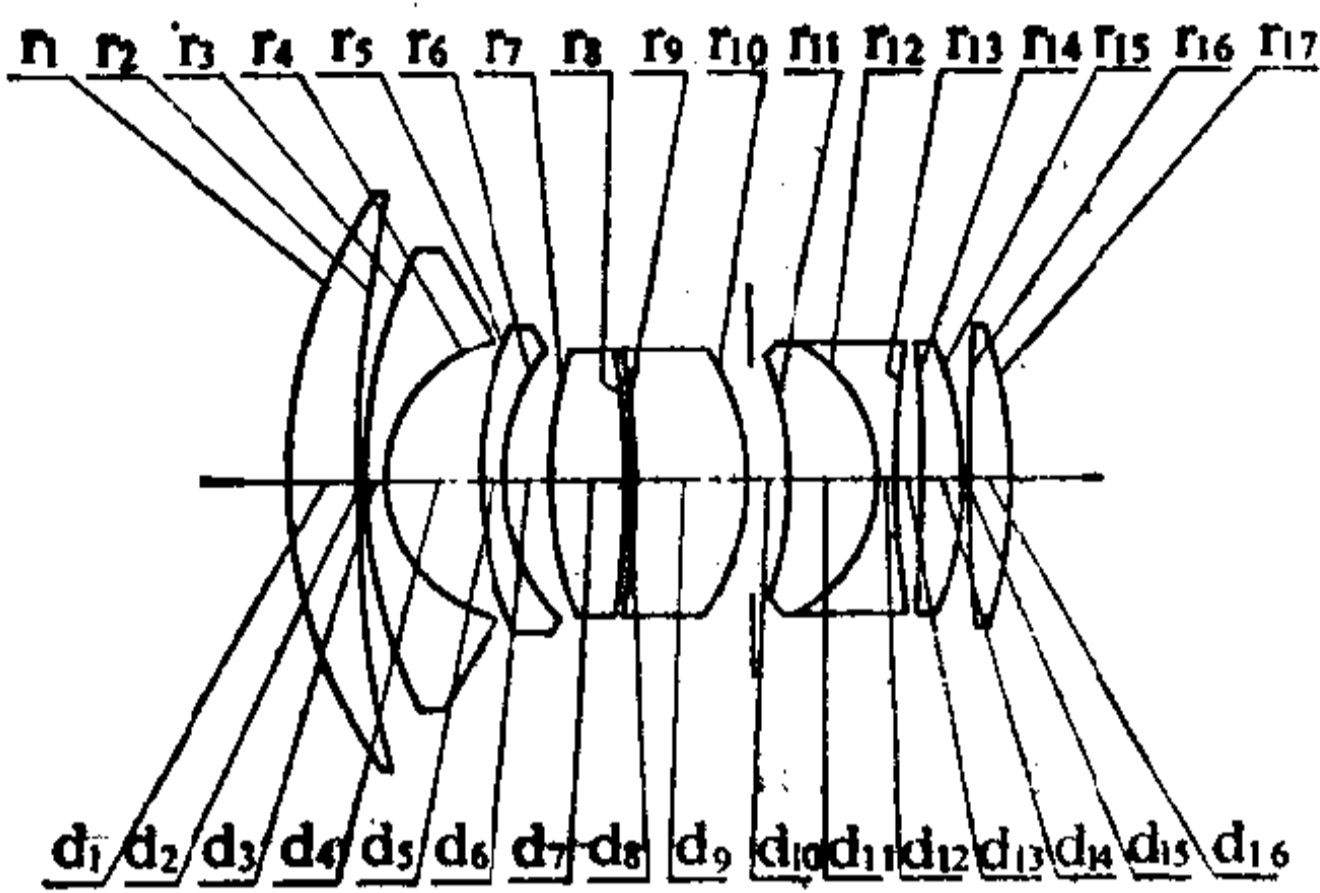
# 超 广 角 镜 头

E.F.L=1

B.F.L=1.5976

FNo.=2.8

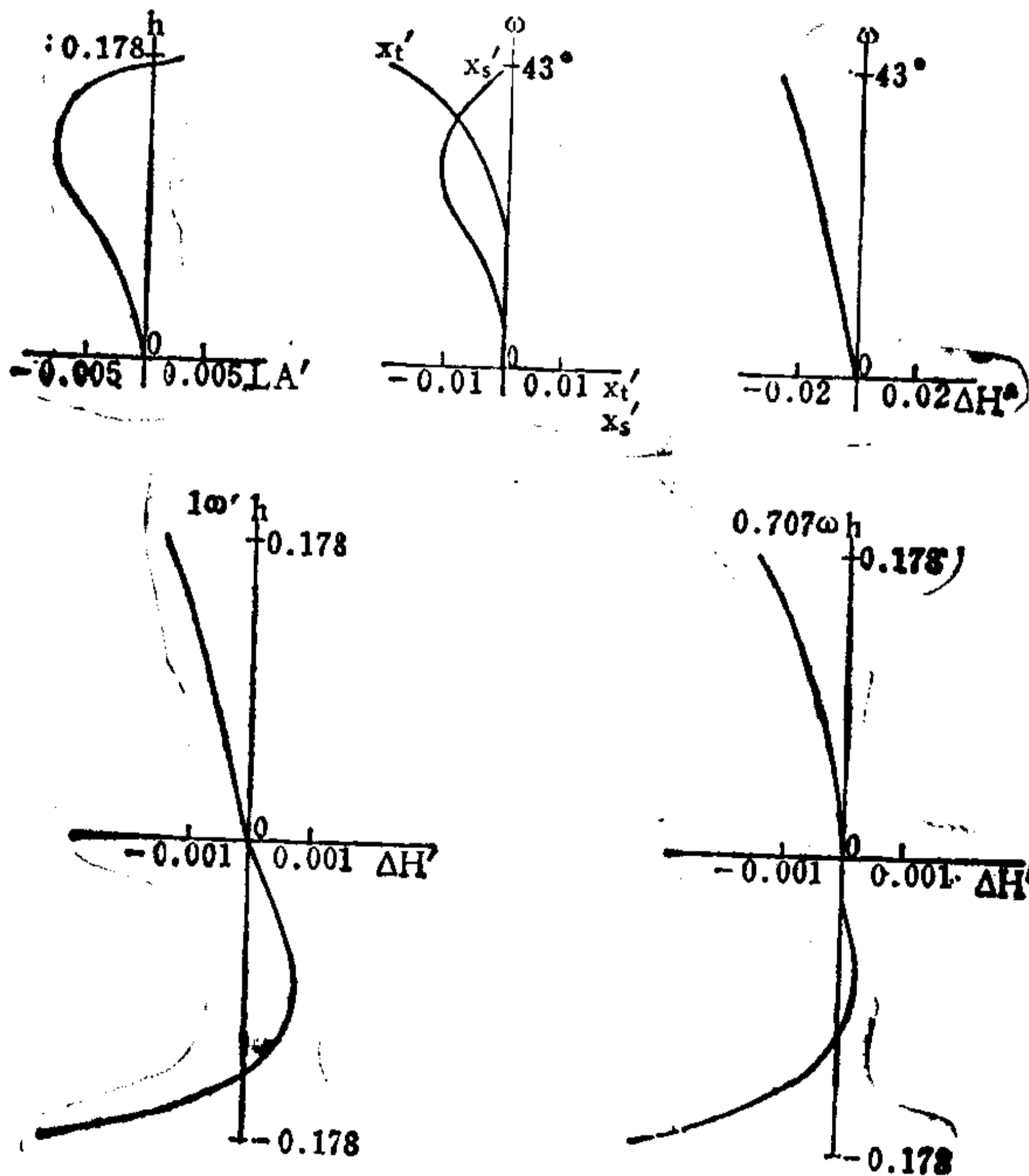
F.A.=±43°



序号	r	d	n	v	序号	r	d	n	v
1	1.3095	0.1749	1.7200	50.3	10	-0.5647	0.1053*		
2	3.4224	0.0042			11	-0.9260	0.2394	1.7618	27.1
3	1.2860	0.0625	1.6228	57.0	12	-0.3966	0.0562	1.8052	25.4
4	0.3527	0.2498			13	2.8183	0.0587		
5	0.9089	0.0625	1.7130	54.0	14	-4.4221	0.1041	1.6204	60.3
6	0.5181	0.1066			15	-0.8160	0.0062		
7	1.0384	0.1940	1.5927	35.5	16	8.8073	0.0999	1.6228	57.0
8	-2.8818	0.0208			17	-1.2339			
9	-2.3420	0.2831	1.6134	43.8					

0.1053\* = 0.0400 + 0.0653

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.00173	0.00133	-0.00048	-0.00204	-0.01297	0.93	-3%
h 或 $\omega$ %	LA'	$\Delta H'$	$x_t'$	$x_s'$	$x_t' - x_s'$	$K_{T1}'$	$K_{T0.7}'$
100	0.0027	-0.0284	-0.0212	-0.0001	-0.0211	-0.00243	-0.00027
70	-0.0082	-0.0170	-0.0041	-0.0109	0.0068	-0.00380	-0.00053



编号: 03-02-038

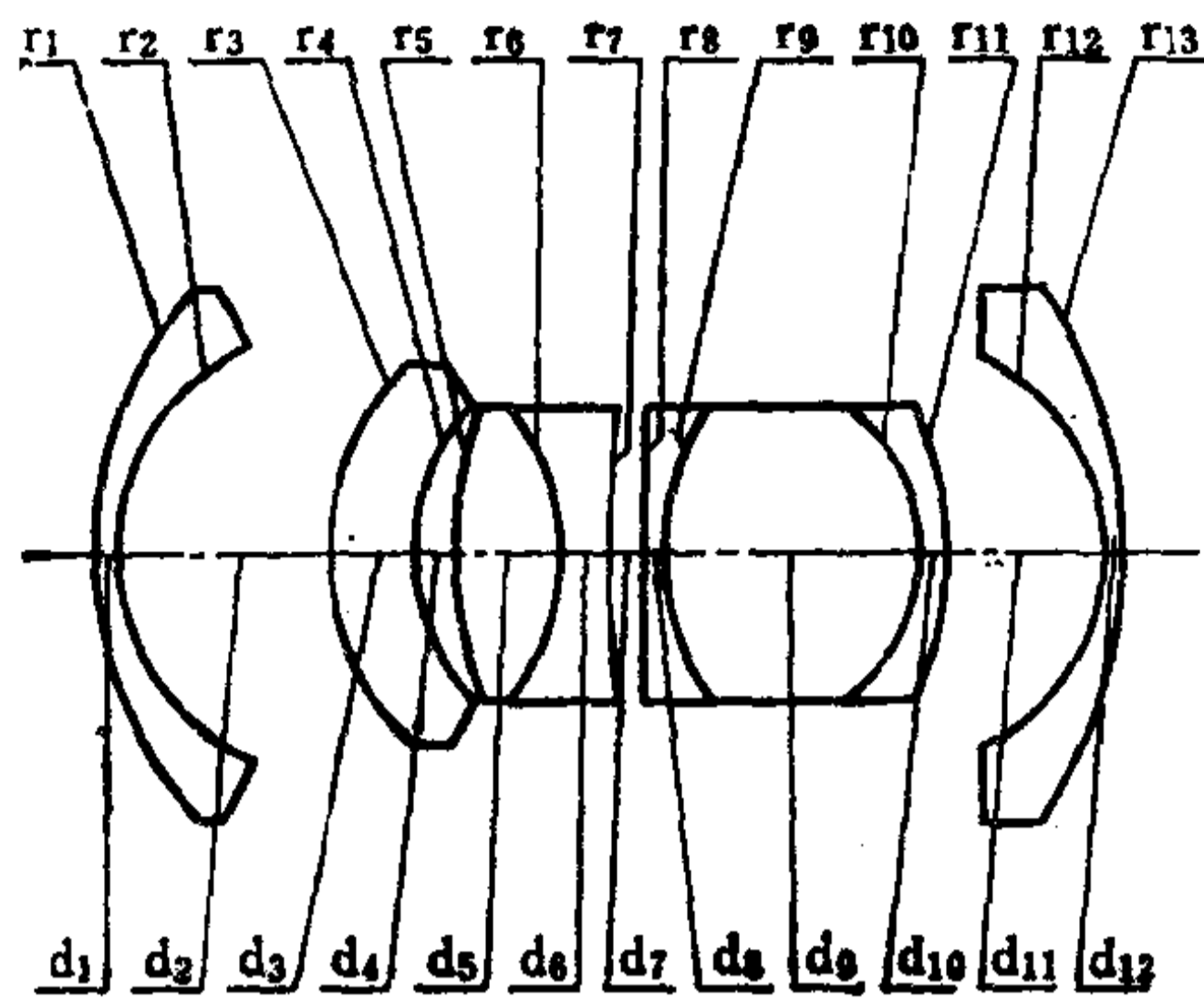
# 大孔径超广角镜头

E.F.L=1

B.F.L=0.3693

FNo.=2.8

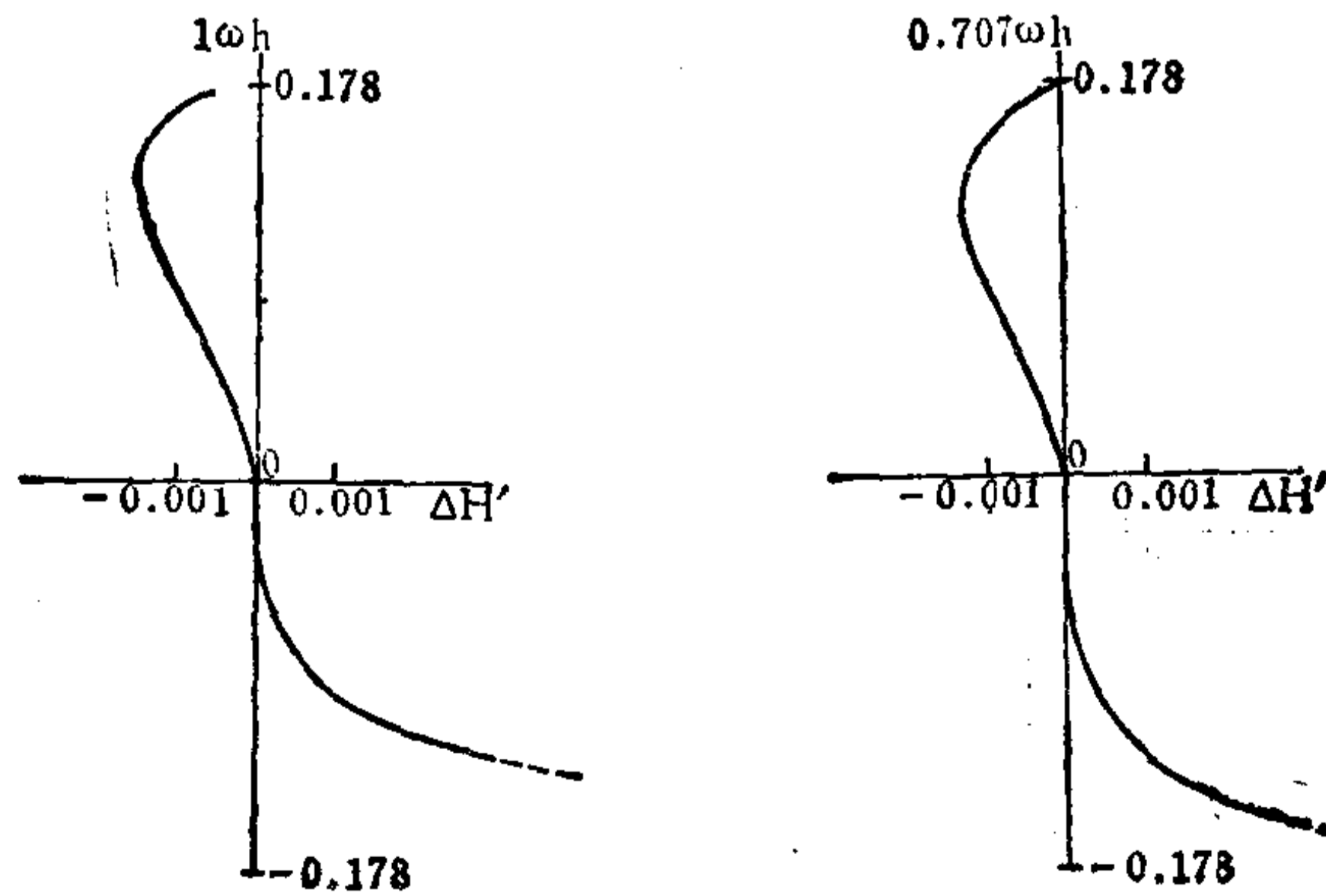
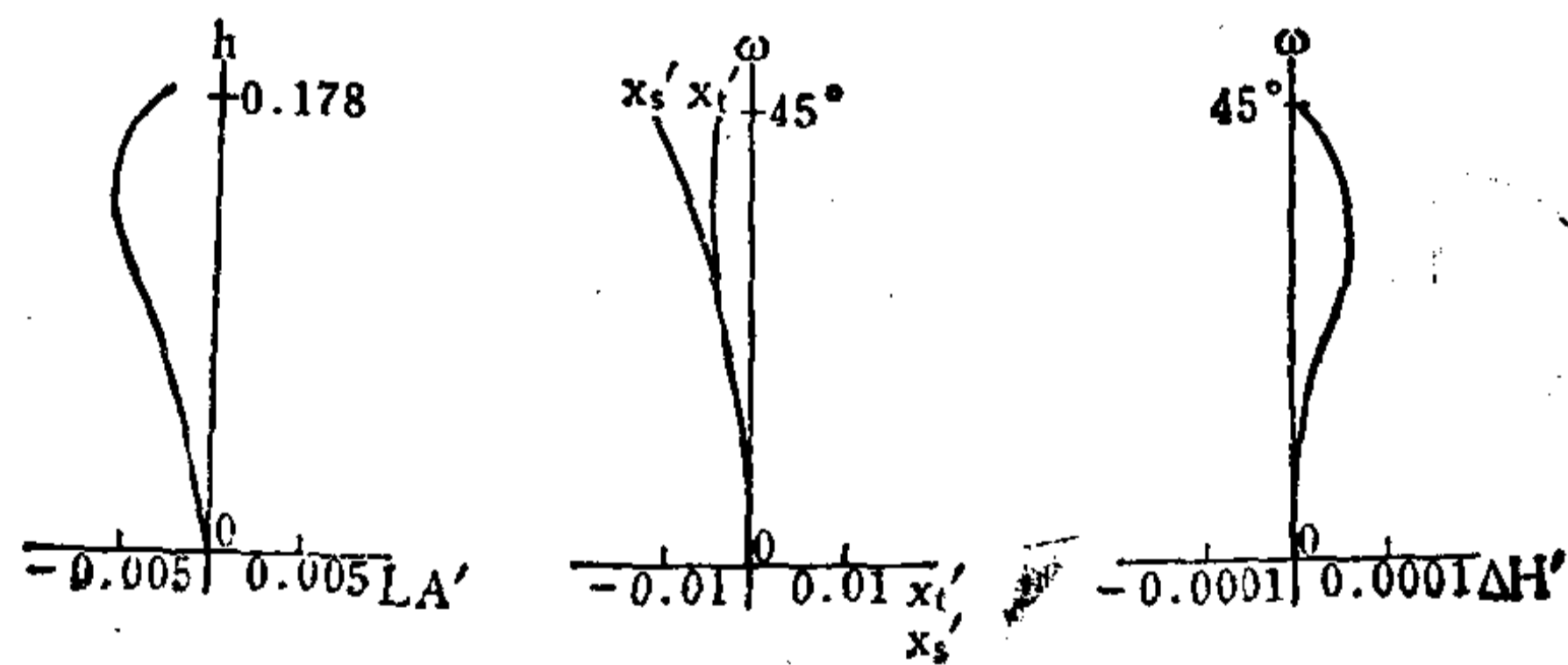
F.A.=±45°



序号	r	d	n	v	序号	r	d	n	v
1	0.8431	0.0394	1.73520	41.58	8	5.8838	0.0495	1.46450	65.70
2	0.4845	0.4580			9	0.4845	0.5396	1.68273	44.51
3	0.5436	0.1803	1.80518	25.43	10	-0.3821	0.0495	1.84666	23.82
4	0.4443	0.0821			11	-0.8133	0.3523		
5	0.9460	0.2202	1.78831	47.37	12	-0.4607	0.0329	1.71300	53.85
6	-0.4845	0.1067	1.63980	34.60	13	-0.9598			
7	2.1179	0.0694*							

$0.0694^* = 0.0350 + 0.0344$

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.00081	-0.00021	-0.00015	-0.00037	0.00002	1	-0.0002%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_i$	$x'_s$	$x'_i - x'_s$	$K'_{T1}$	$K'_{\Gamma 0.7}$
100	-0.0037	-0.000002	-0.0037	-0.0110	0.0073	0.0100	0.00089
70	-0.0050	0.000070	-0.0048	-0.0059	0.0011	0.0030	-0.00020



编号: 03-02-039

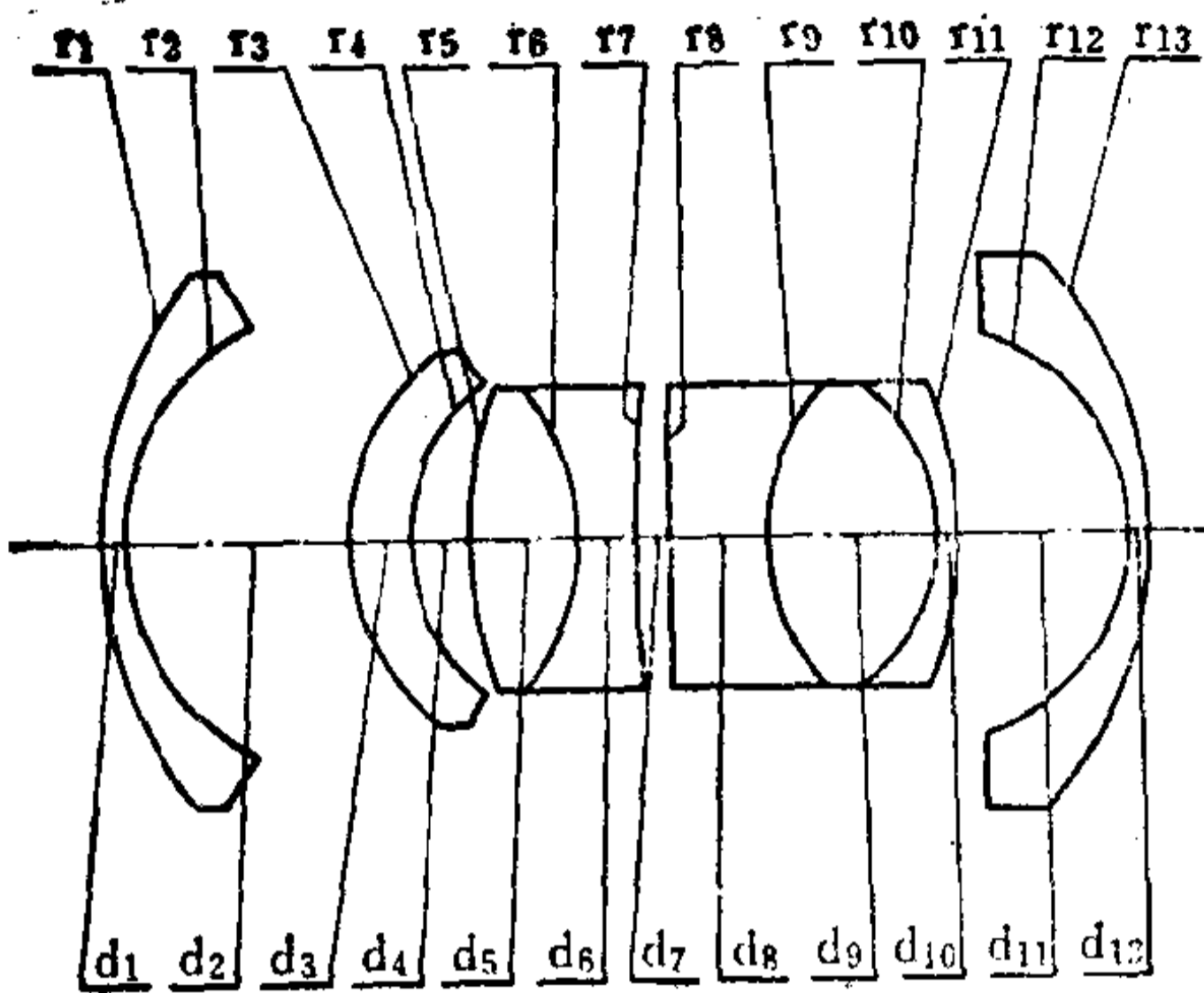
# 大孔径超广角镜头

E.F.L=1

B.F.L=0.3529

FNo.=2.8

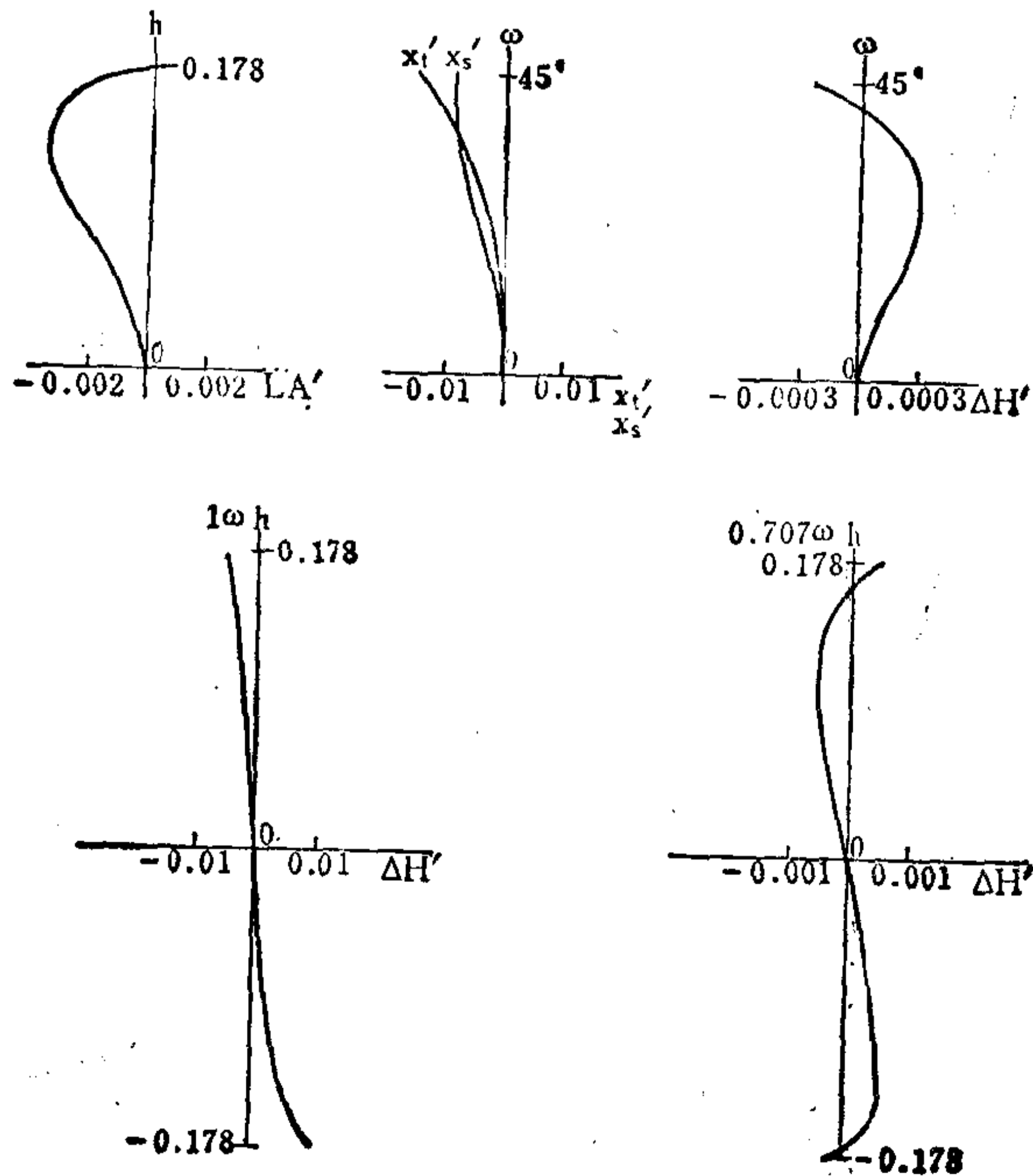
F.A.  $\approx \pm 45^\circ$



序号	r	d	n	v	序号	r	d	n	v
1	0.91002	0.0517	1.58893	51.39	8	$\infty$	0.2222	1.62299	58.06
2	0.51913	0.5011			9	0.49004	0.3681	1.74400	44.77
3	0.50438	0.1330	1.78470	26.08	10	-0.40358	0.0310	1.84666	23.82
4	0.41531	0.1266			11	-0.87148	0.3849		
5	0.97786	0.2299	1.78831	47.37	12	-0.45932	0.0336	1.71300	53.85
6	-0.51913	0.1318	1.65446	33.67	13	-0.92317			
7	4.46321	0.0697*							

$0.0697^* = 0.0350 + 0.0347$

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.00067	-0.00005	-0.00019	-0.00055	0.00031	1	-0.03%
h 或 $\omega\%$	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{f1}$	$K'_{f0.7}$
100	0.00013	-0.00029	-0.0152	-0.0092	-0.0060	0.002720	0.000038
70	-0.00350	0.00033	-0.0052	-0.0068	0.0016	0.000099	0.000030



编号: 03-02-040

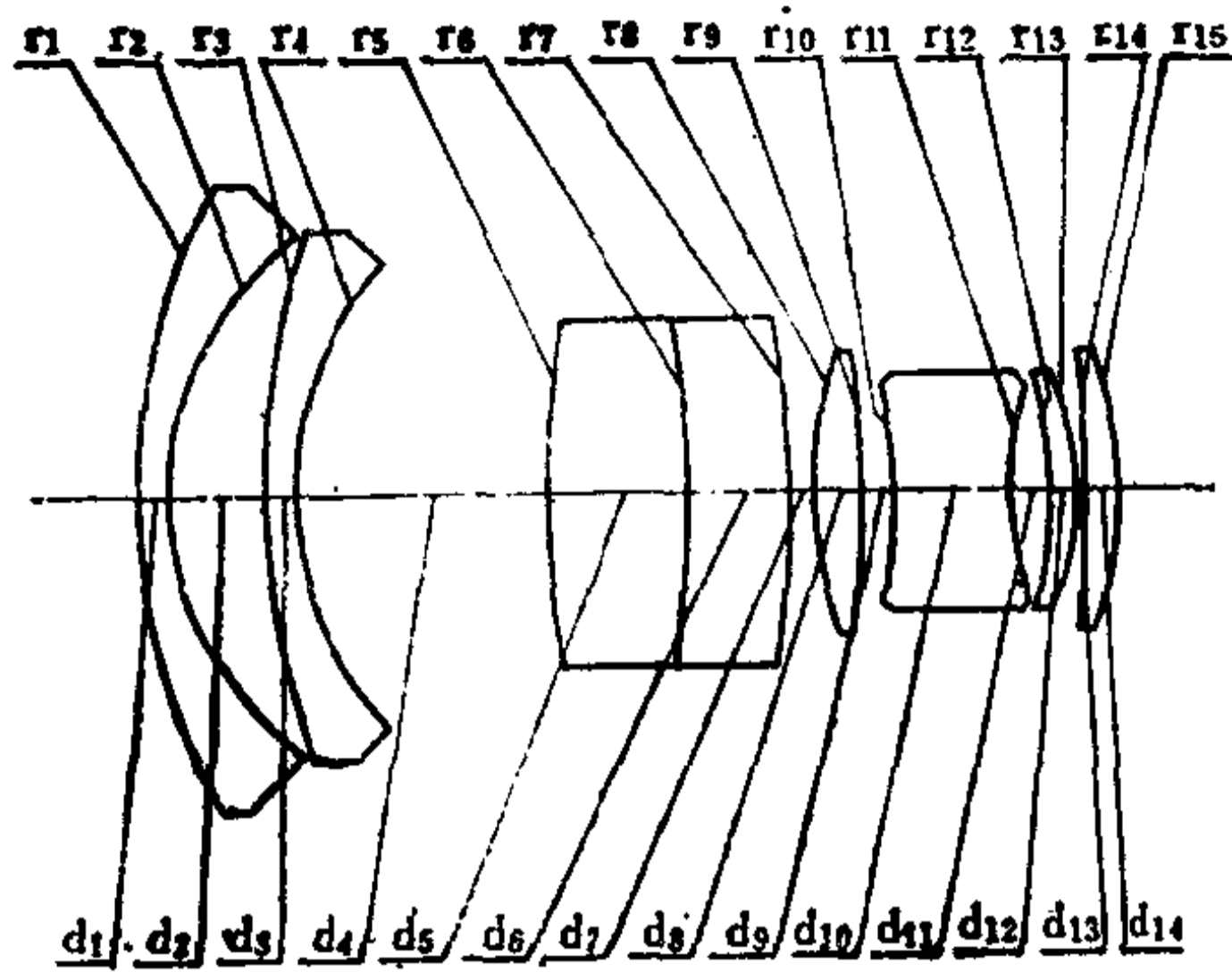
# 反远距型广角镜头

E.F.L = 99.99

B.F.L = 130.06

FNo. = 2.8

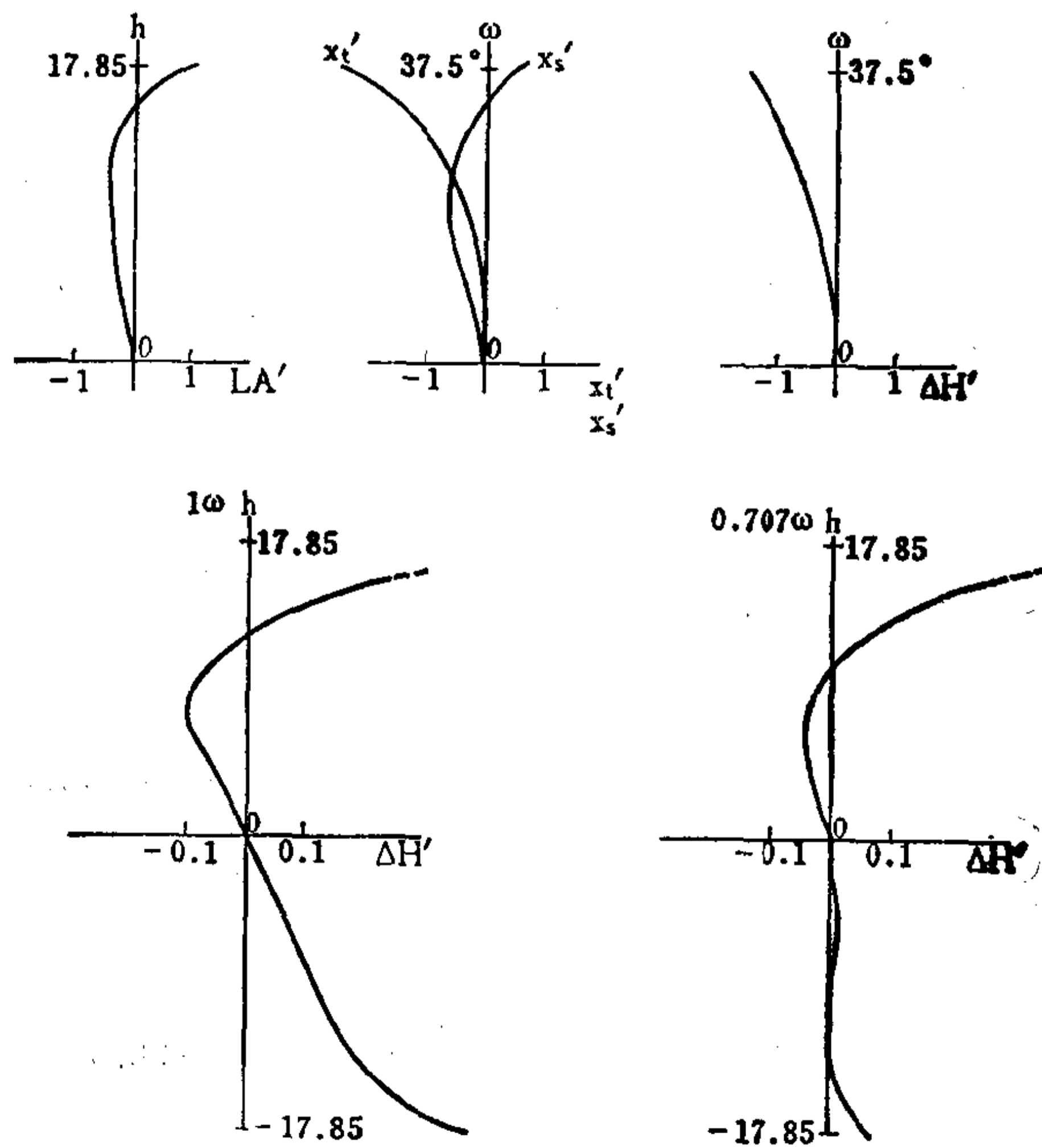
F.A. = ±37.5°



序号	r	d	n	v	序号	r	d	n	v
1	160.34	6.94	1.51633	64.1	9	-261.91	8.67*		
2	78.42	22.55			10	-122.46	27.75	1.80518	25.4
3	187.33	6.94	1.58913	61.1	11	90.19	8.60		
4	81.33	62.44			12	-109.64	7.28	1.69350	50.8
5	242.83	34.69	1.62004	36.3	13	-68.62	0.49		
6	-242.83	24.28	1.51633	64.1	14	-648.62	8.67	1.71300	54.0
7	-222.49	5.20			15	-118.08			
8	103.19	11.45	1.81554	44.5					

8.67\* = 4.00 + 4.67

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.1071	-0.0178	0.0215	-0.1259	-0.5852	76.01	-1.9%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K_{T1}^0$	$K_{T0.7}^0$
100	0.974	-1.446	-2.567	0.508	-3.075	0.498	0.086
70	-0.357	-0.659	-0.679	-0.536	-0.143	0.390	0.030



编号: 03-02-041

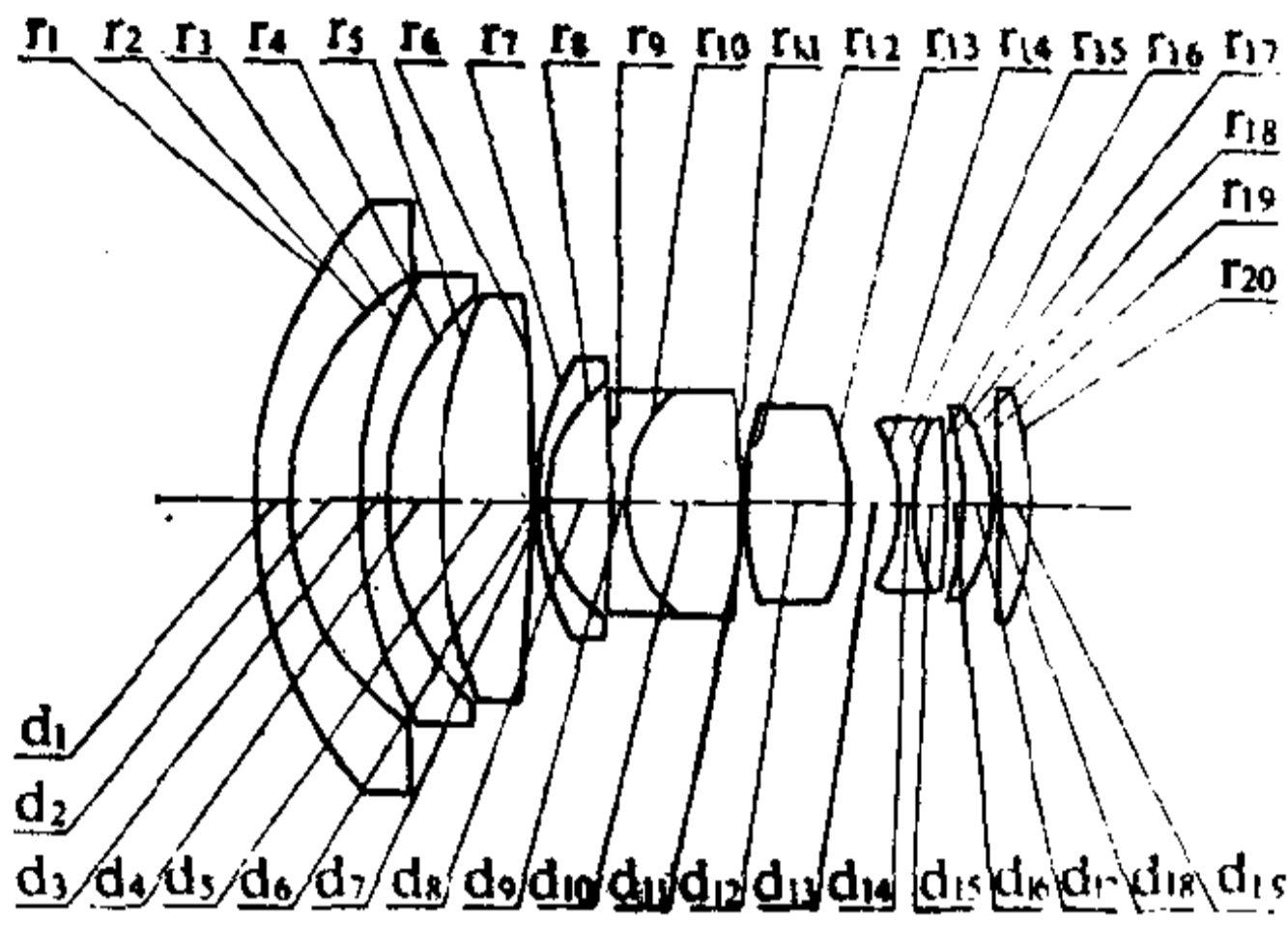
# 反远距型超广角物镜

E. F. L = 99.8

B. F. L = 185.2

FNo. = 3.3

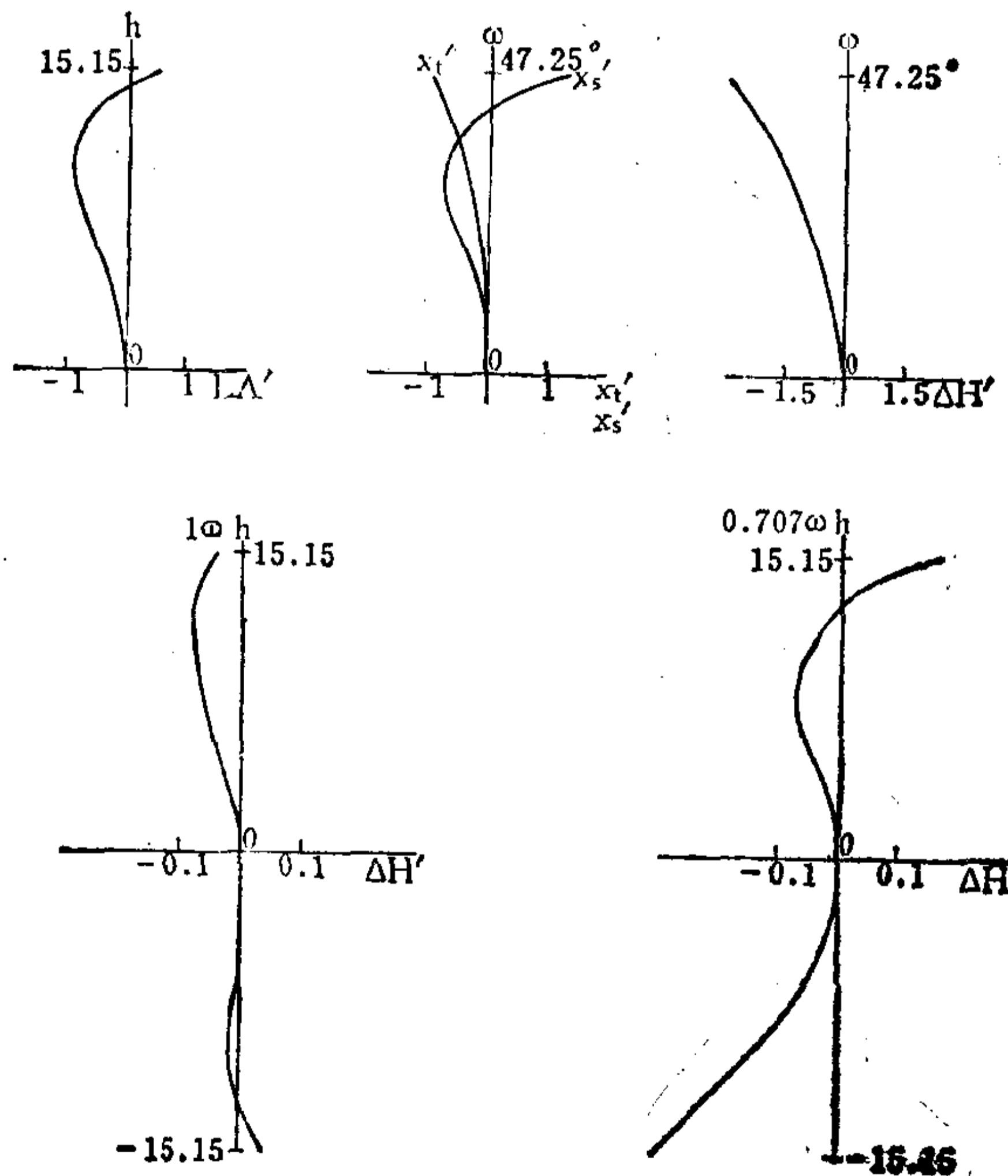
F. A. = ± 47.25°



序号	r	d	n	v	序号	r	d	n	v
1	174.64	13.64	1.72000	50.3	11	-503.70	0.49		
2	103.78	26.70			12	138.77	40.93	1.60717	40.2
3	182.73	9.55	1.71700	47.9	13	-102.62	19.05*		
4	106.48	21.90			14	-64.23	7.26	1.74000	28.2
5	212.01	38.11	1.69680	55.6	15	81.46	12.38	1.58144	40.8
6	-845.70	0.97			16	-557.20	4.73		
7	120.10	5.26	1.72000	50.3	17	-128.22	12.86	1.69100	54.8
8	57.33	22.42			18	-64.43	0.49		
9	-531.30	5.60	1.70154	41.1	19	-3491.00	14.28	1.64000	60.2
10	60.16	46.20	1.67270	32.2	20	-123.10			

19.05\* = 9.05 + 10.00

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.1508	0.0229	0.0766	-0.1399	-1.0422	107.4	-2.8%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K_{T1}^0$	$K_{T0.7}^0$
100	0.4450	-3.022	-0.929	1.252	-2.181	-0.0051	-0.0443
70	-0.974	-1.556	-0.435	-0.797	0.362	-0.0688	-0.1091



(39) (38)



编号: 03-02-042

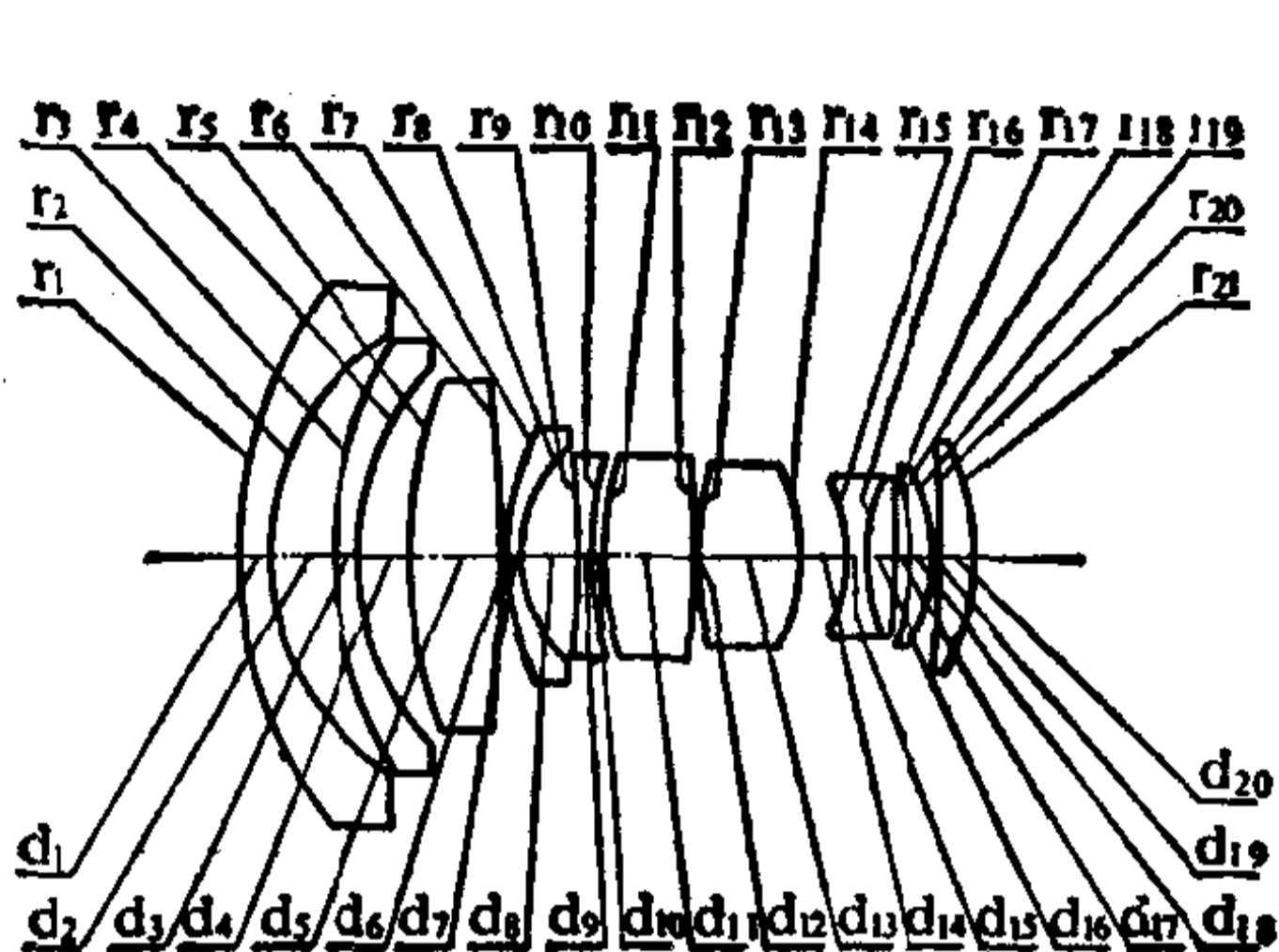
### 反远距型超广角物镜

E. F. L = 100

B. F. L = 185.4

FNo. = 8.3

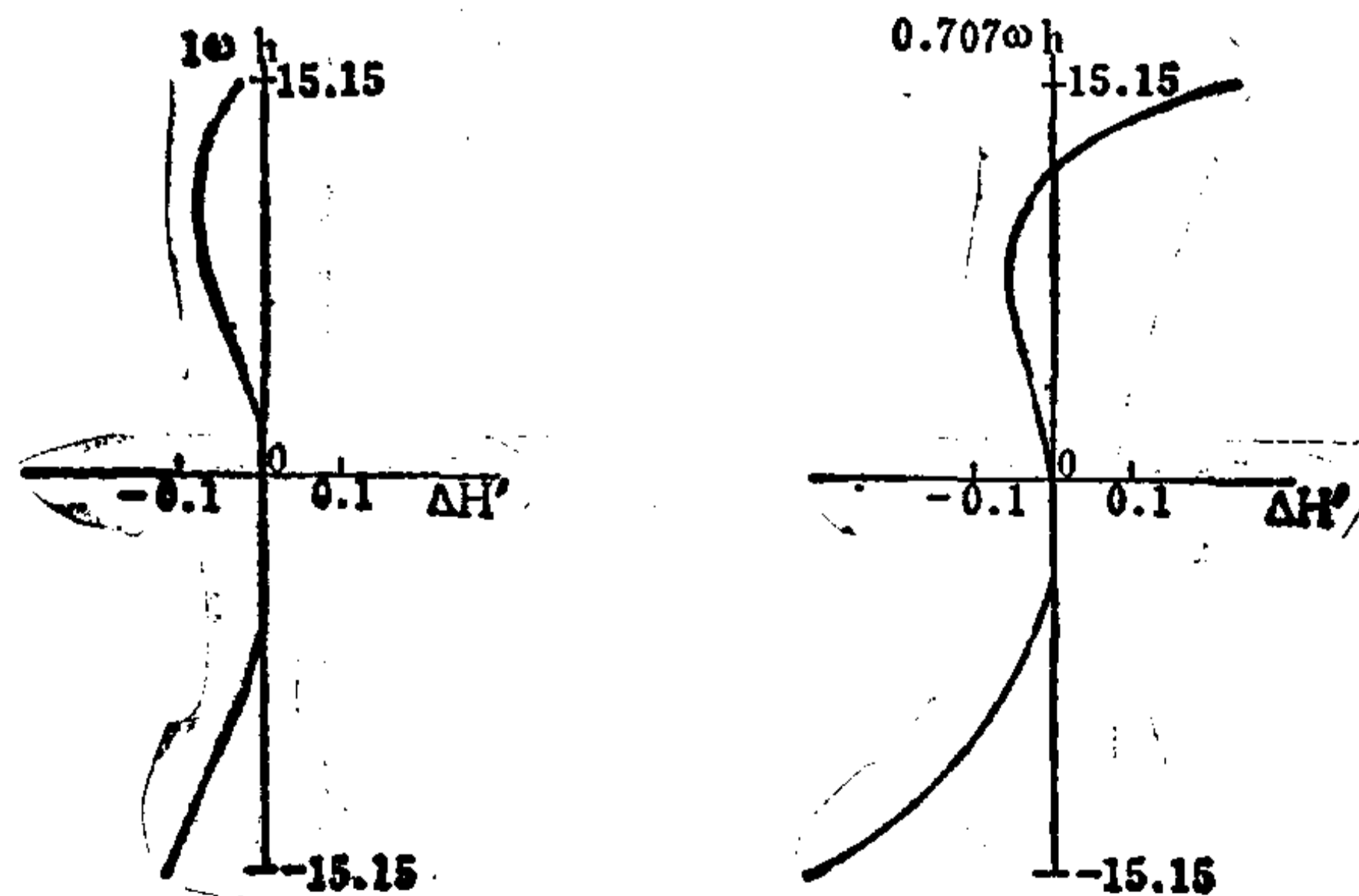
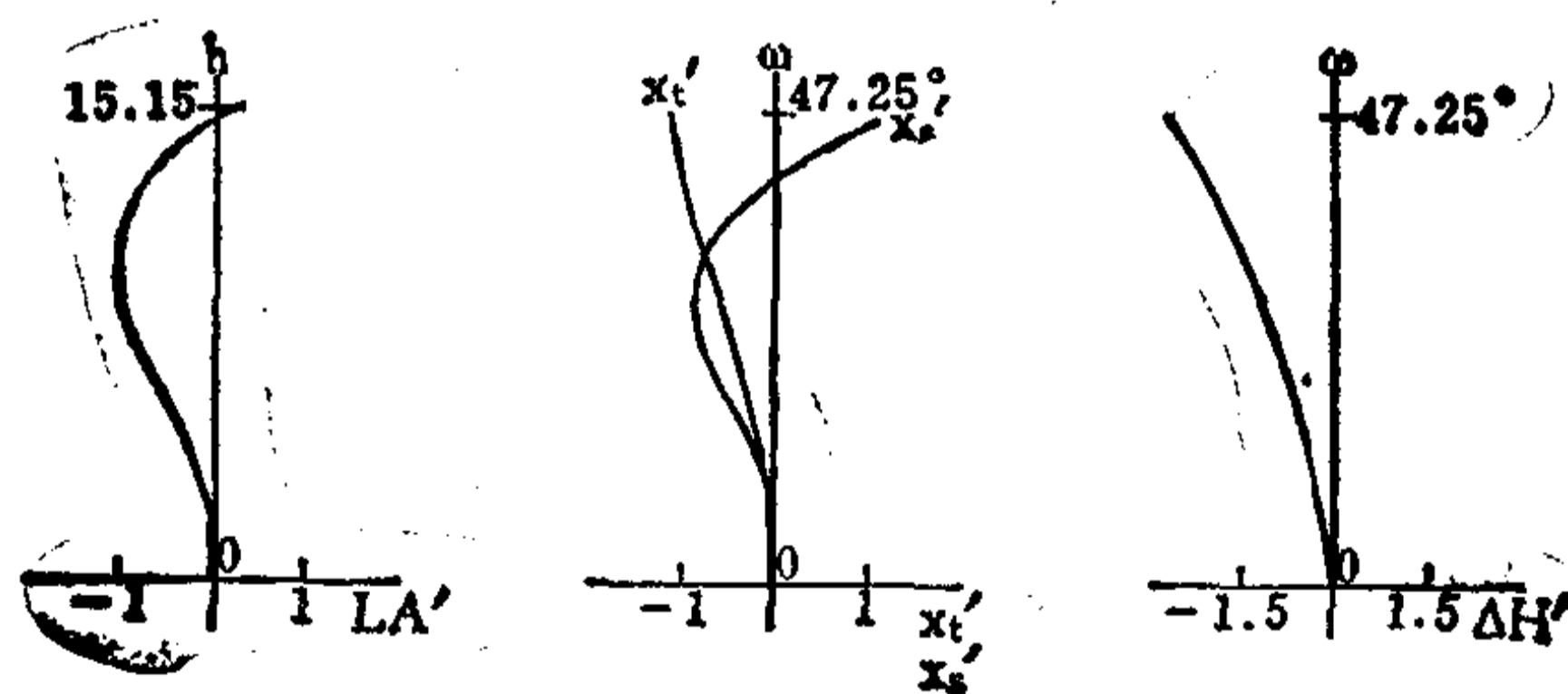
F. A. = ± 47.25°



序号	r	d	n	v	序号	r	d	n	v
1	176.83	13.65	1.72000	50.3	12	-570.70	0.49		
2	102.62	26.72			13	178.68	40.97	1.60717	40.2
3	171.91	9.56	1.71700	47.9	14	-99.96	19.06*		
4	113.18	21.50			15	-66.77	7.26	1.74000	28.2
5	214.61	38.13	1.69680	55.6	16	81.43	12.38	1.58144	40.8
6	-1370.00	0.98			17	-850.00	4.73		
7	118.52	5.27	1.72000	50.3	18	-152.37	12.87	1.69100	54.8
8	55.05	22.43			19	-69.18	0.49		
9	-1499.00	5.61	1.69680	55.6	20	-937.80	14.29	1.64000	60.2
10	149.72	4.39			21	-108.71			
11	160.19	38.86	1.68893	31.2					

19.06\* = 9.05 + 10.01

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.1482	0.0529	0.0299	-0.1307	-0.9866	107.6	-2.5%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_i$	$x'_o$	$x'_i - x'_o$	$K'_{T1}$	$K'_{i0.7}$
100	0.243	-2.662	-1.121	1.232	-2.353	-0.0765	-0.0682
70	-0.976	-1.511	-0.771	-0.881	0.110	-0.0264	-0.0806



编号: 03-02-043

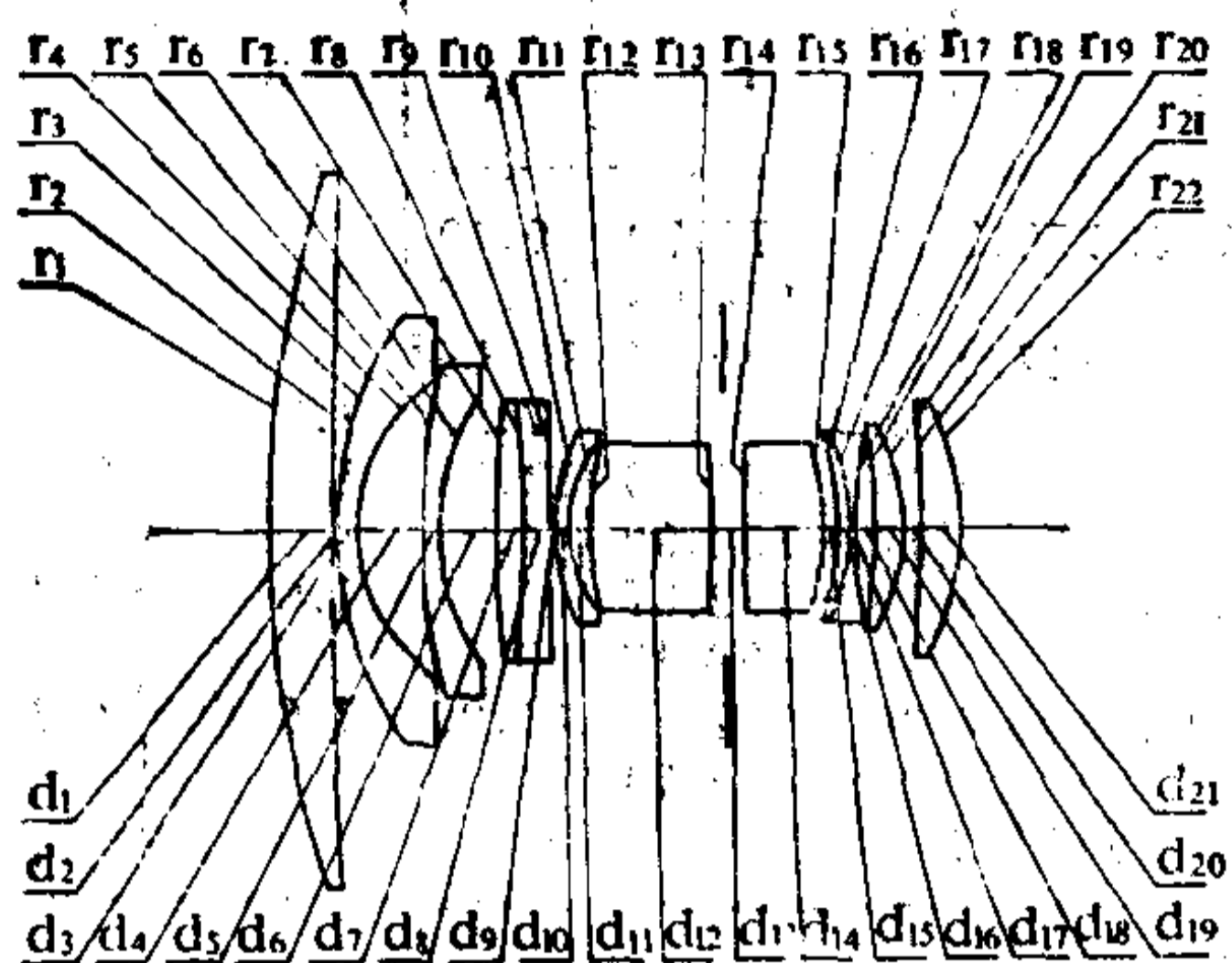
# 反远距型超广角物镜

E.F.L = 100

B.F.L = 203

FNo. = 3.5

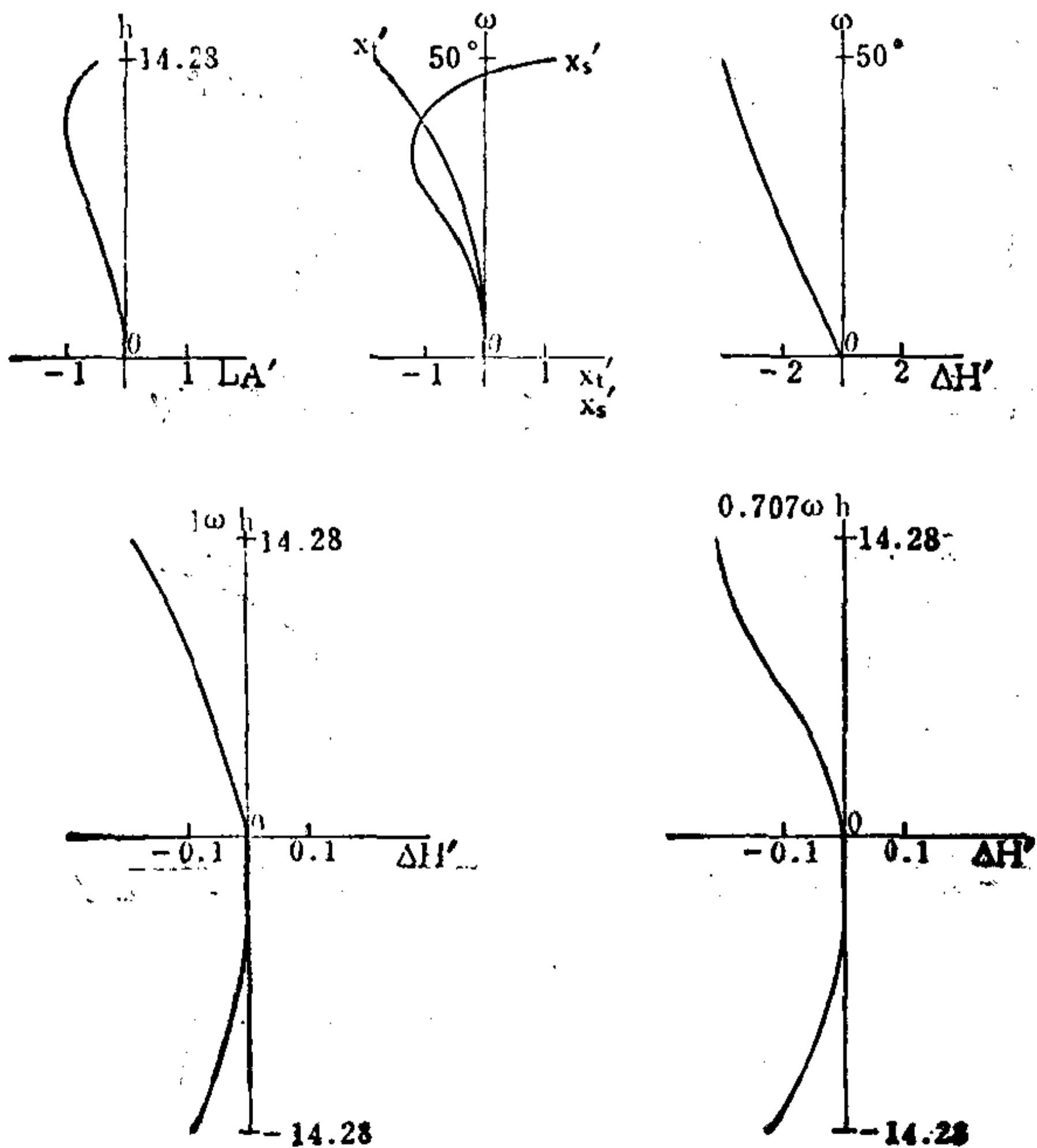
F.A. = ± 50°



序号	r	d	n	v	序号	r	d	n	v
1	495.86	20.90	1.80610	40.8	12	160.76	50.59	1.56732	42.83
2	1096.11	1.09			13	-585.01	13.10*		
3	156.51	8.73	1.67000	57.33	14	648.73	34.60	1.63980	34.58
4	74.22	26.74			15	-99.14	4.42		
5	258.96	8.62	1.67000	57.33	16	-137.99	5.46	1.80400	46.65
6	101.01	23.14			17	-109.12	3.55	1.80520	25.43
7	426.22	12.28	1.75520	27.51	18	252.34	5.73		
8	-574.85	10.91	1.83400	37.19	19	-417.21	13.10	1.61800	63.38
9	-8345.24	1.09			20	-94.77	6.82		
10	103.21	5.46	1.69680	55.62	21	-968.20	16.10	1.61800	63.38
11	54.38	9.88			22	-119.64			

13.10\* = 7.00 + 6.10

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.1289	0.0874	-0.0033	-0.1192	-1.6933	119.4	-3.5%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_i$	$x'_s$	$x'_i - x'_s$	$K'_{i1}$	$K'_{i0.7}$
100	-0.493	-4.187	-1.869	1.225	-3.094	-0.1364	-0.0710
70	-1.041	-3.089	-0.833	-1.335	0.502	-0.1713	-0.1116



编号: 03-02-044

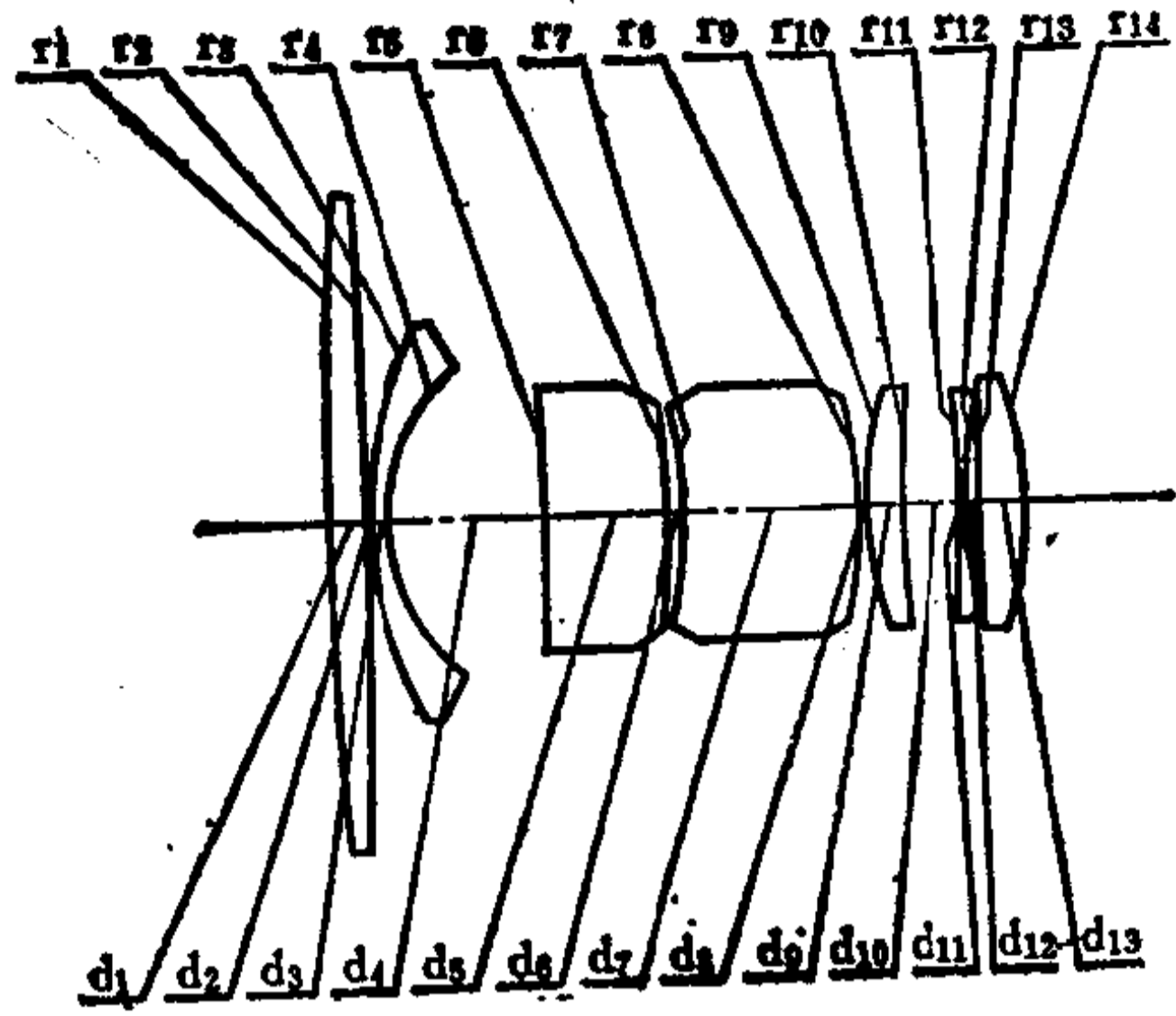
# 反远距型广角镜头

E.F.L=99.6

B.F.L=141.19

FNo. =4

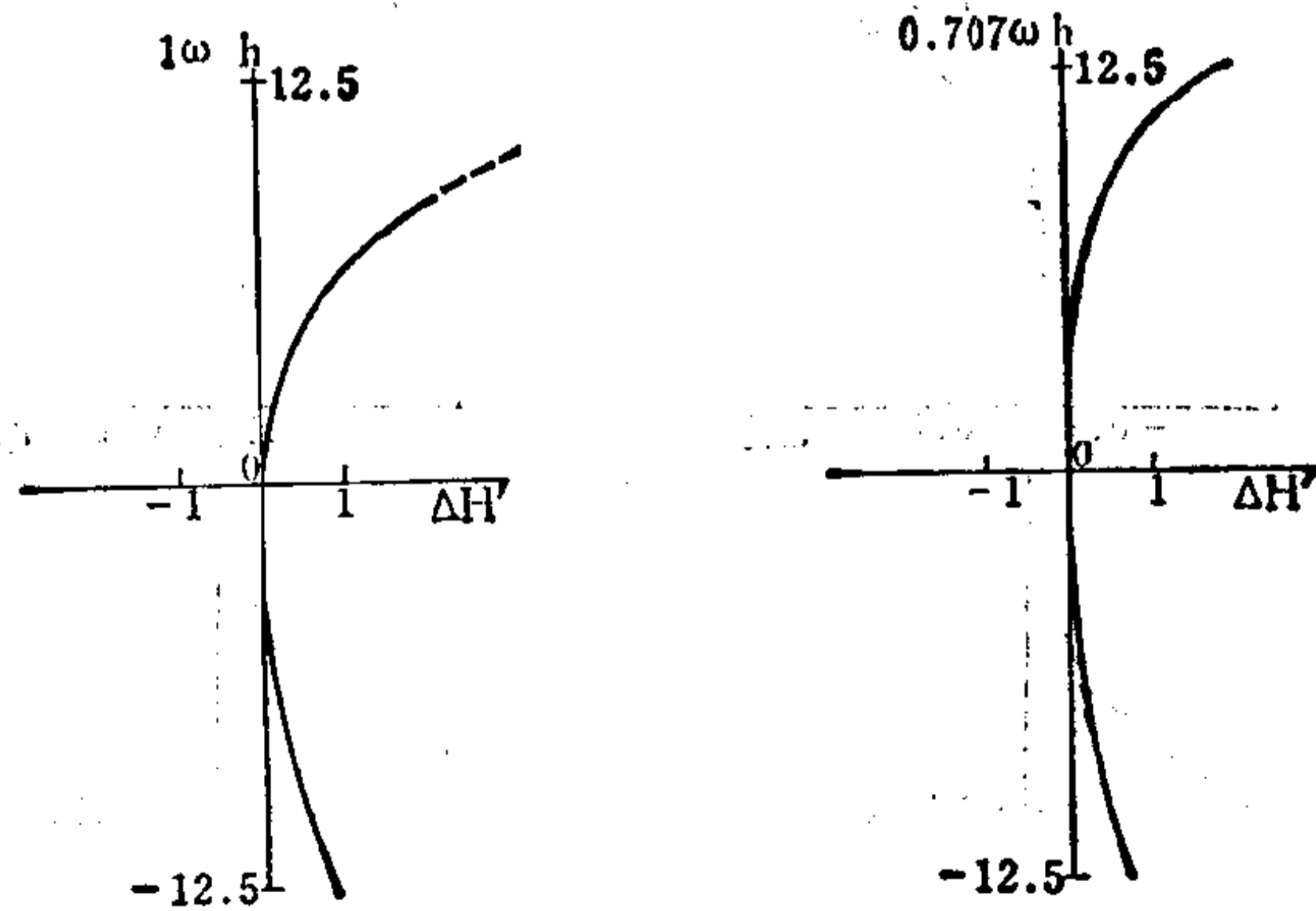
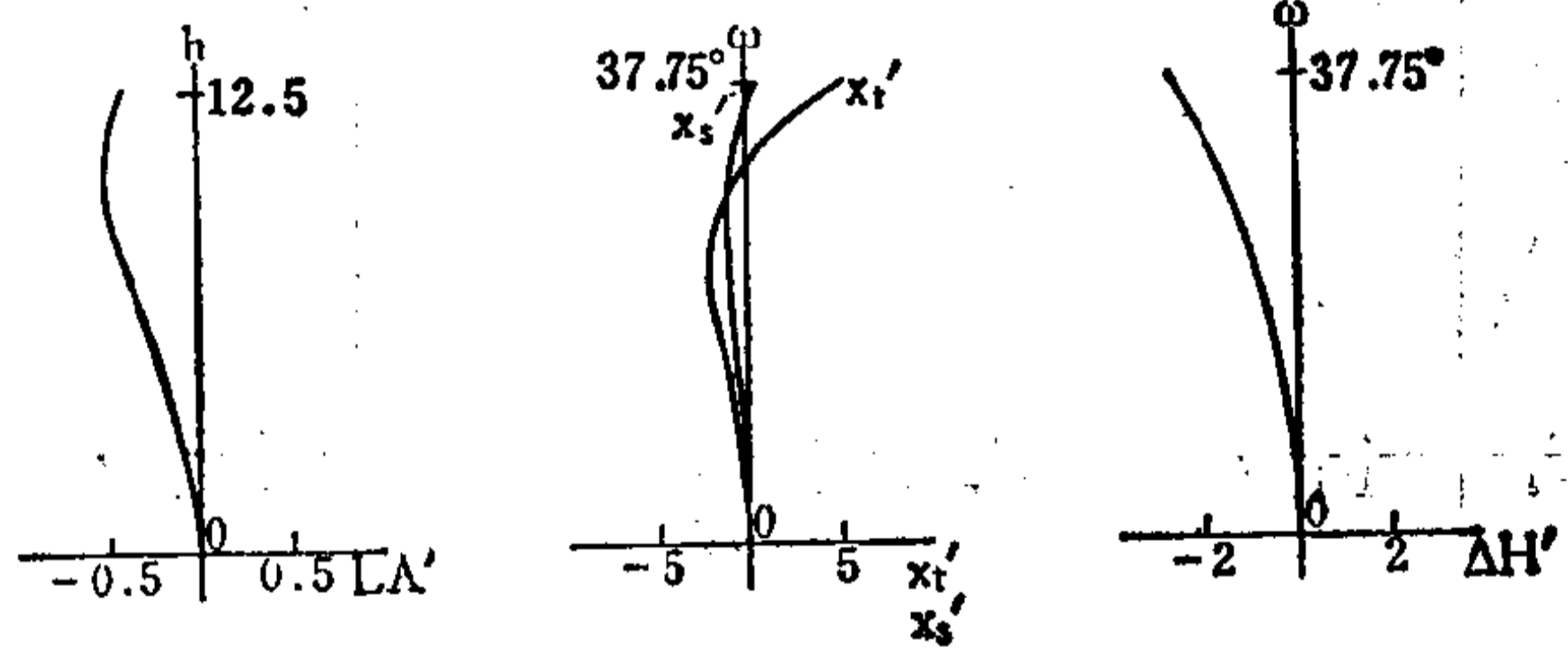
F.A. = ±87.75°



序号	r	d	n	v	序号	r	d	n	v
1	865.02	6.83	1.67003	47.3	8	-77.90	0.88		
2	-1424.08	1.05			9	67.11	6.78	1.72600	53.6
3	72.62	3.82	1.61800	63.4	10	238.28	10.35		
4	35.36	27.33			11	-370.33	0.97	1.75520	27.5
5	-463.53	22.75	1.66892	45.0	12	70.66	2.75		
6	-114.16	2.67*			13	∞	7.90	1.72600	53.6
7	-68.35	31.42	1.67790	55.3	14	-64.98			

2.67\* = 1.30 + 1.37

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.0390	0.0127	-0.0498	-0.0486	-0.7597	75.7	-3.8%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{T1}$	$K'_{T0.7}$
100	-0.438	-2.851	5.505	0.434	5.071	3.481	1.269
70	-0.458	-1.255	-1.873	-1.110	-0.763	1.283	0.450



4

编号: 03-02-045

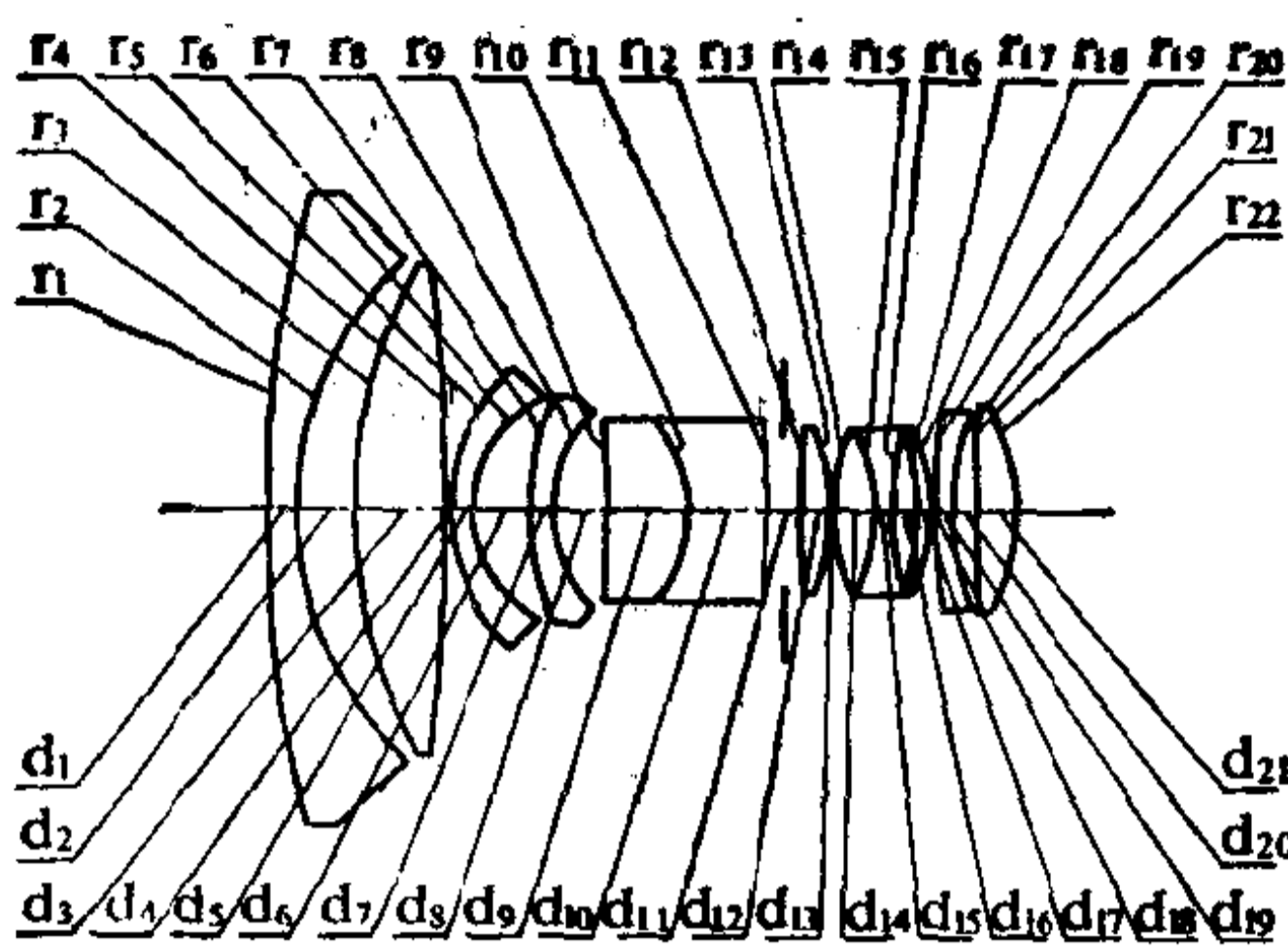
# 超广角摄影物镜

E. F. L = 100

B. F. L = 179.39

FNo. = 3.5

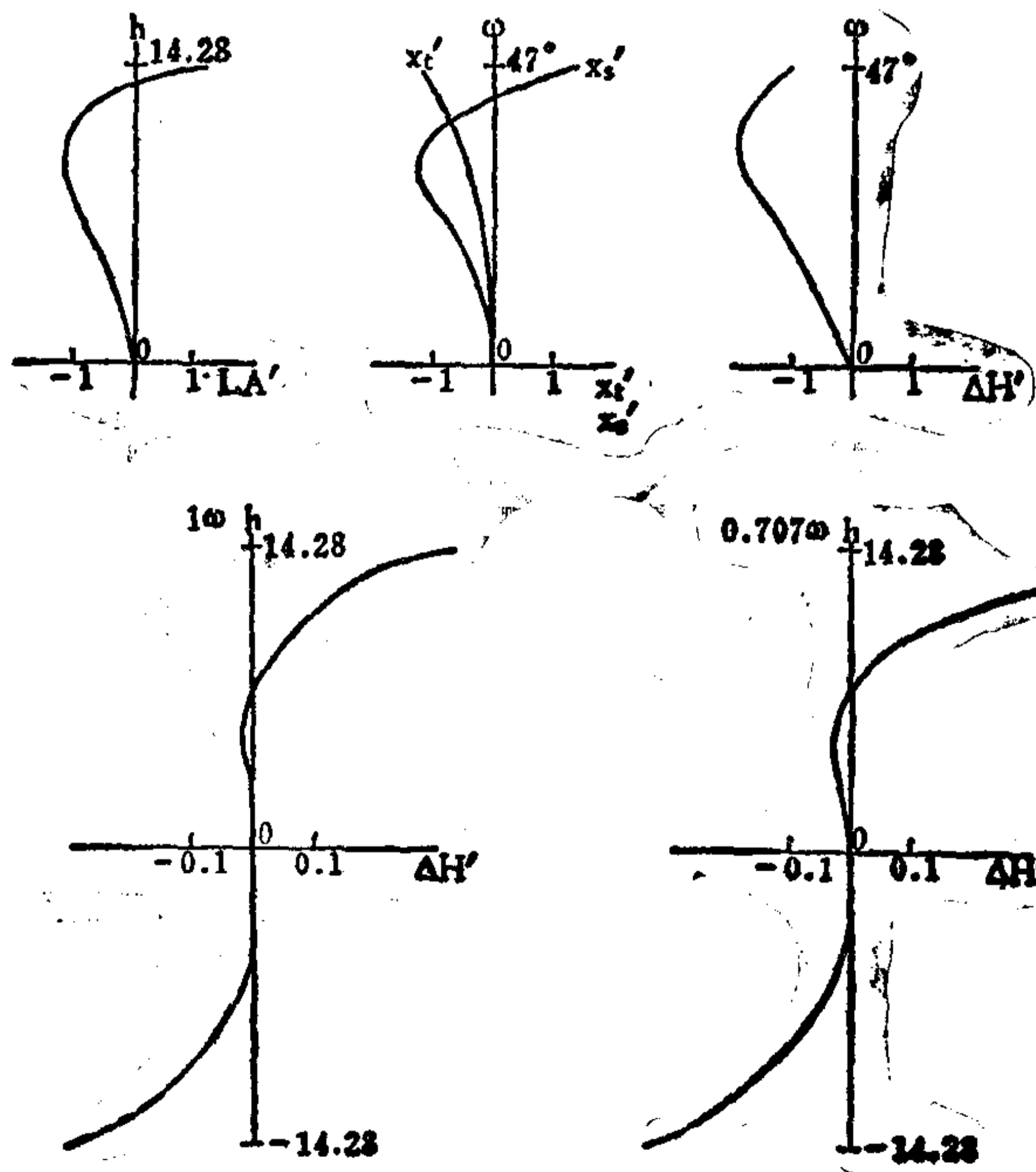
F. A. = ±47°



序号	r	d	nd	v	序号	r	d	nd	v
1	519.231	11.06	1.64000	60.2	12	649.038	10.58	1.58913	61.2
2	138.498	22.12			13	-106.296	0.48		
3	209.135	37.50	1.51633	64.1	14	83.111	16.83	1.58913	61.2
4	-757.390	0.72			15	-73.077	7.69	1.81554	44.4
5	78.365	8.99	1.64000	60.2	16	128.104	7.69		
6	49.066	24.04			17	-192.308	7.21	1.51823	59.0
7	117.788	8.99	1.64000	60.2	18	-78.832	0.48		
8	58.350	20.67			19	403.846	6.73	1.76182	26.5
9	-384.615	31.25	1.63636	35.4	20	108.806	8.17		
10	-55.288	31.25	1.58913	61.2	21	743.971	16.83	1.51190	58.2
11	-619.439	14.42*			22	-89.216			

14.42\* = 7.00 + 7.42

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(100)
	-0.1795	0.0127	0.0856	-0.1549	-1.3714	107.2	-1%
h 或 ω %	LA'	$\Delta H'$	$x'_i$	$x'_s$	$x'_i - x'_s$	$K'_{f1}$	$K'_{i0.7}$
100	1.223	-1.070	-1.179	1.447	-2.626	0.0187	-0.0184
70	-1.216	-2.068	-0.532	-1.274	0.742	0.2588	-0.0135



编号: 03-02-046

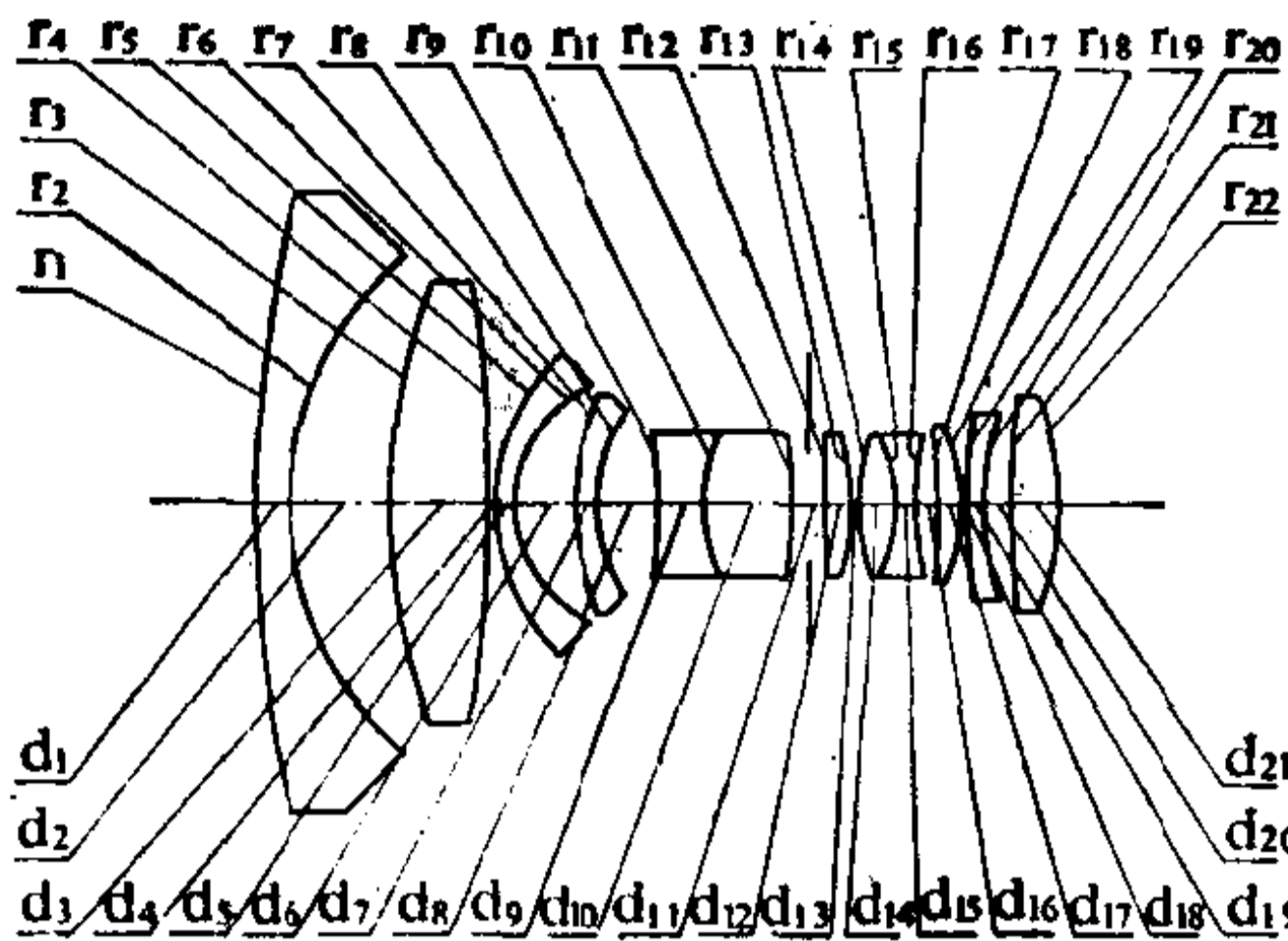
# 超广角摄影物镜

E. F. L = 98

B. F. L = 183.85

FNo. = 3.5

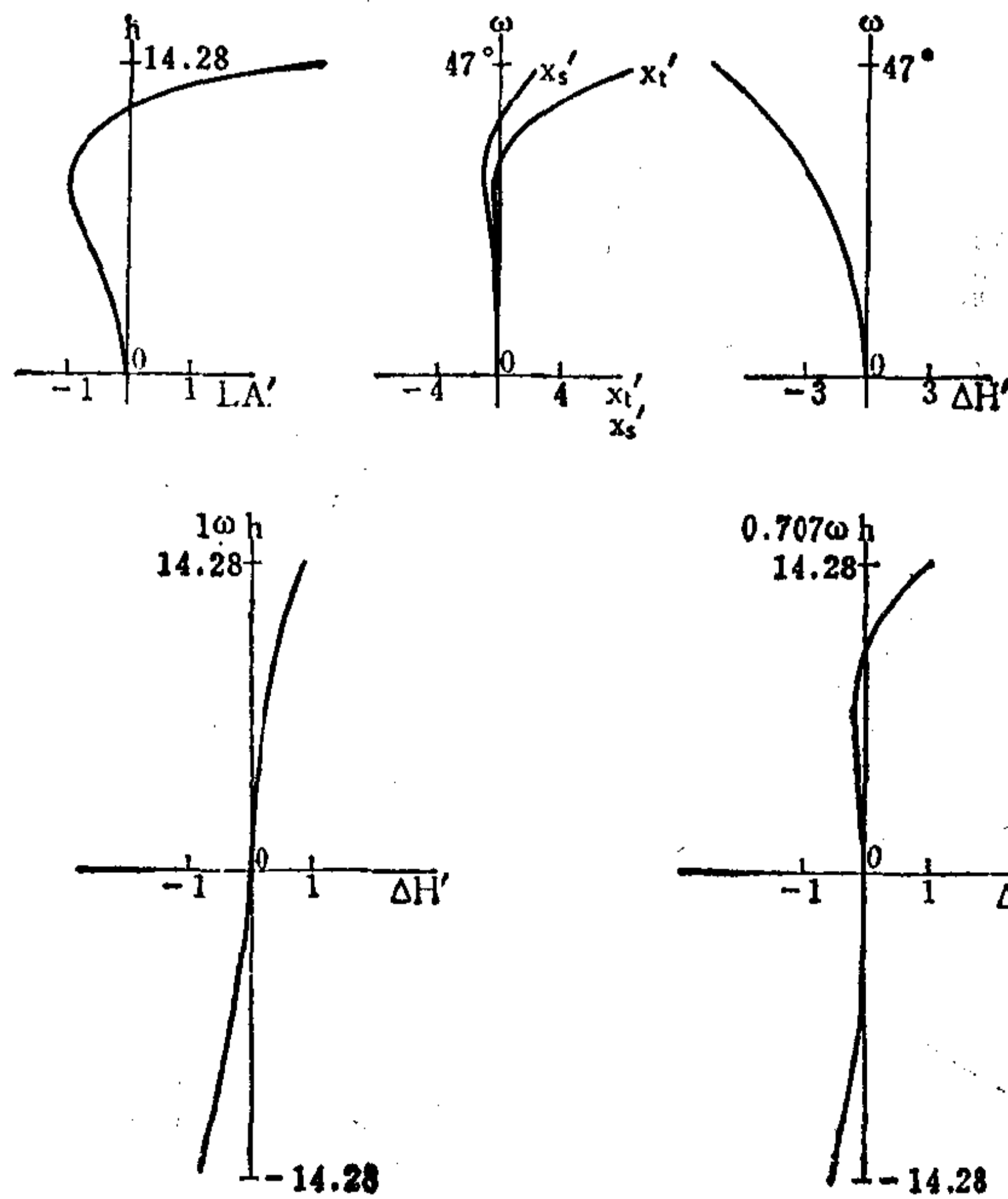
F. A. = ±47°



序号	r	d	nd	v	序号	r	d	nd	v
1	519.231	13.85	1.64000	60.2	12	3605.769	11.06	1.58913	61.2
2	130.205	40.86			13	-113.405	0.24		
3	250.000	38.46	1.51633	64.1	14	83.137	16.83	1.58913	61.2
4	-569.697	0.24			15	-69.711	8.65	1.81554	44.4
5	81.731	8.99	1.64000	60.2	16	131.757	8.65		
6	51.734	24.04			17	-199.519	9.61	1.51633	64.1
7	121.154	8.99	1.64000	60.2	18	-77.619	0.48		
8	60.657	23.08			19	353.365	6.73	1.80518	25.5
9	-173.077	19.23	1.51633	64.1	20	109.566	9.61		
10	80.288	33.65	1.62588	35.6	21	649.038	19.23	1.51633	64.1
11	-239.723	13.46*			22	-97.328			

13.46\* = 7.00 + 6.46

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.1913	-0.1082	0.0372	-0.1215	-1.6599	105.07	-7%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{f1}$	$K'_{f0.7}$
100	3.283	-7.418	8.412	2.004	6.408	0.0968	-0.0112
70	-0.959	-2.965	0.538	-0.709	1.247	0.3329	-0.0411





编号: 03-02-047

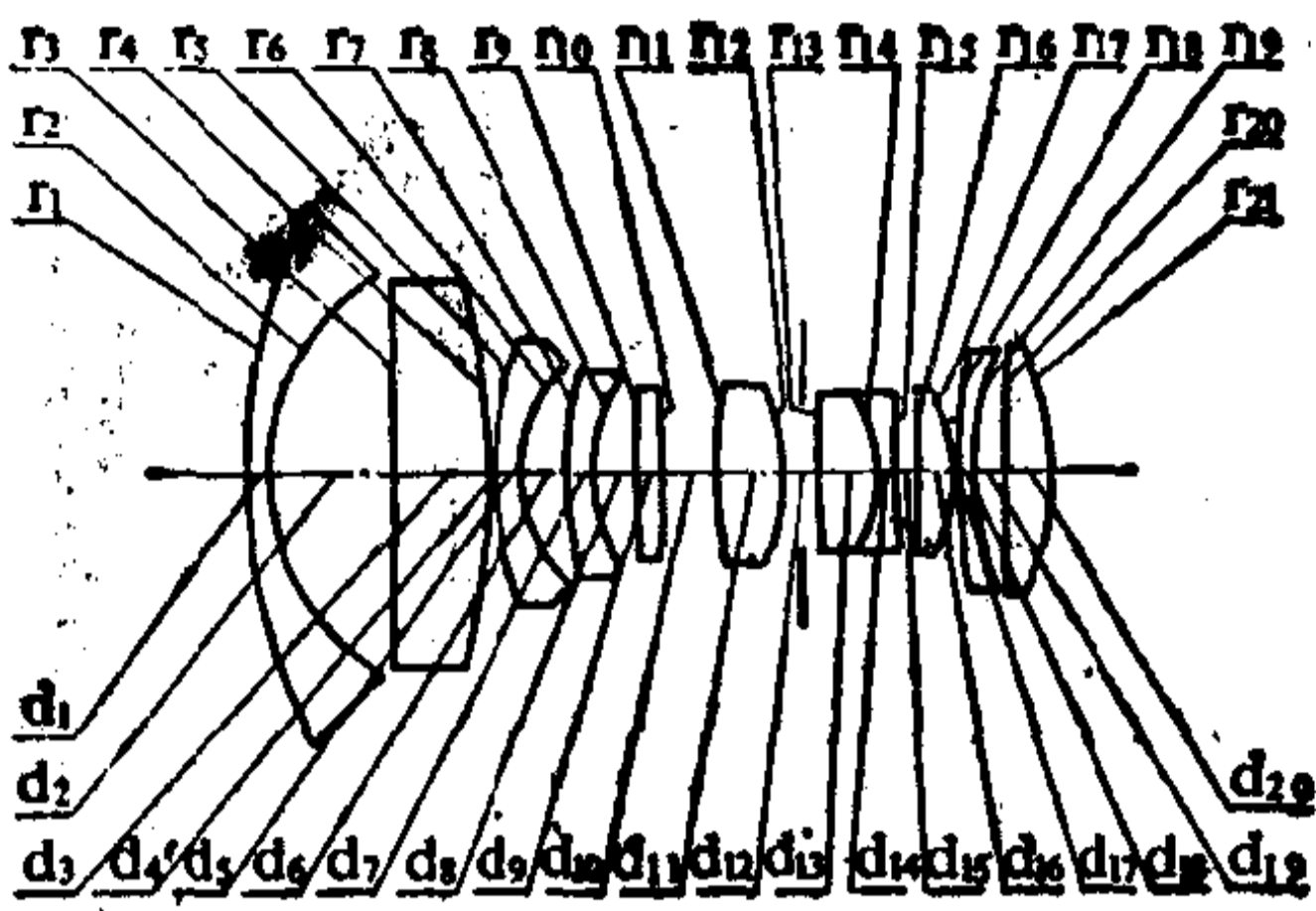
# 具有长后截距的超广角物镜

E. F. L = 99.99

B. F. L = 199.71

FNo. = 3.5

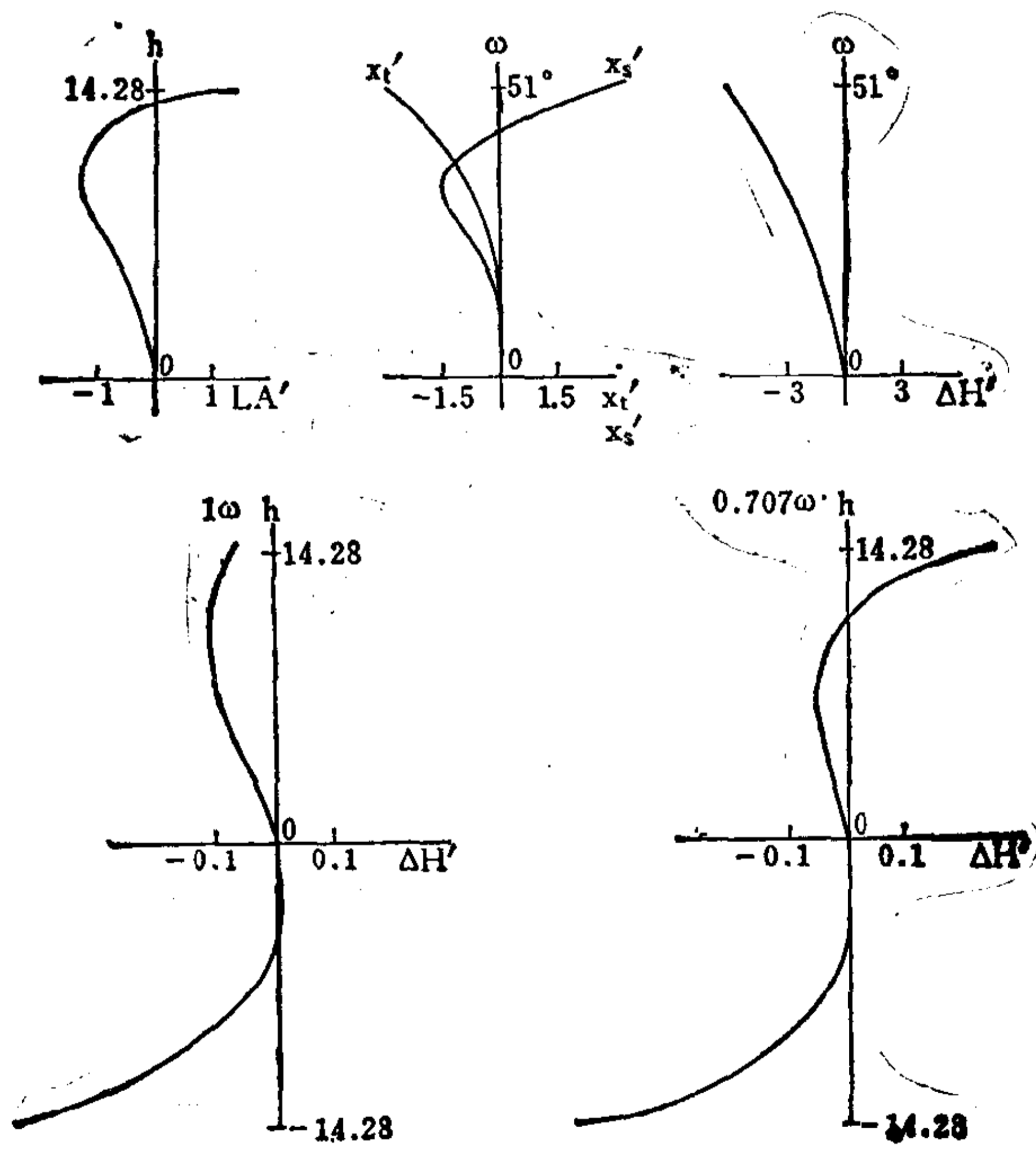
F. A. = ±51°



序号	r	d	n	v	序号	r	d	n	v
1	229.52	8.84	1.64000	60.2	12	-95.77	15.68*		
2	94.56	47.57			13	424.27	23.24	1.51633	64.1
3	∞	38.89	1.51633	64.1	14	-58.17	6.40	1.83400	37.2
4	-312.73	1.62			15	253.87	8.11		
5	150.12	9.62	1.64000	60.2	16	-1502.70	14.59	1.48749	70.1
6	56.47	18.91			17	-72.53	0.54		
7	167.82	9.62	1.51633	64.1	18	324.32	5.78	1.80518	25.4
8	65.37	16.22			19	121.74	10.81		
9	333.50	9.62	1.64000	60.2	20	1043.14	18.92	1.51633	64.1
10	-1093.72	21.62			21	-106.74			
11	181.10	25.40	1.62588	35.7					

15.68\* = 8.00 + 7.68

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1ω)
	-0.1917	-0.0822	0.0469	-0.1748	-1.7521	123.5	-4.8%
h 或 ω %	LA'	ΔH'	$x_t'$	$x_s'$	$x_t' - x_s'$	$K_{f1}'$	$K_{f0.7}'$
100	1.250	-5.944	-3.114	3.174	-6.288	-0.2606	-0.1305
70	-1.302	-3.344	-0.976	-1.595	0.619	-0.1109	-0.0696





编号: 03-02-048

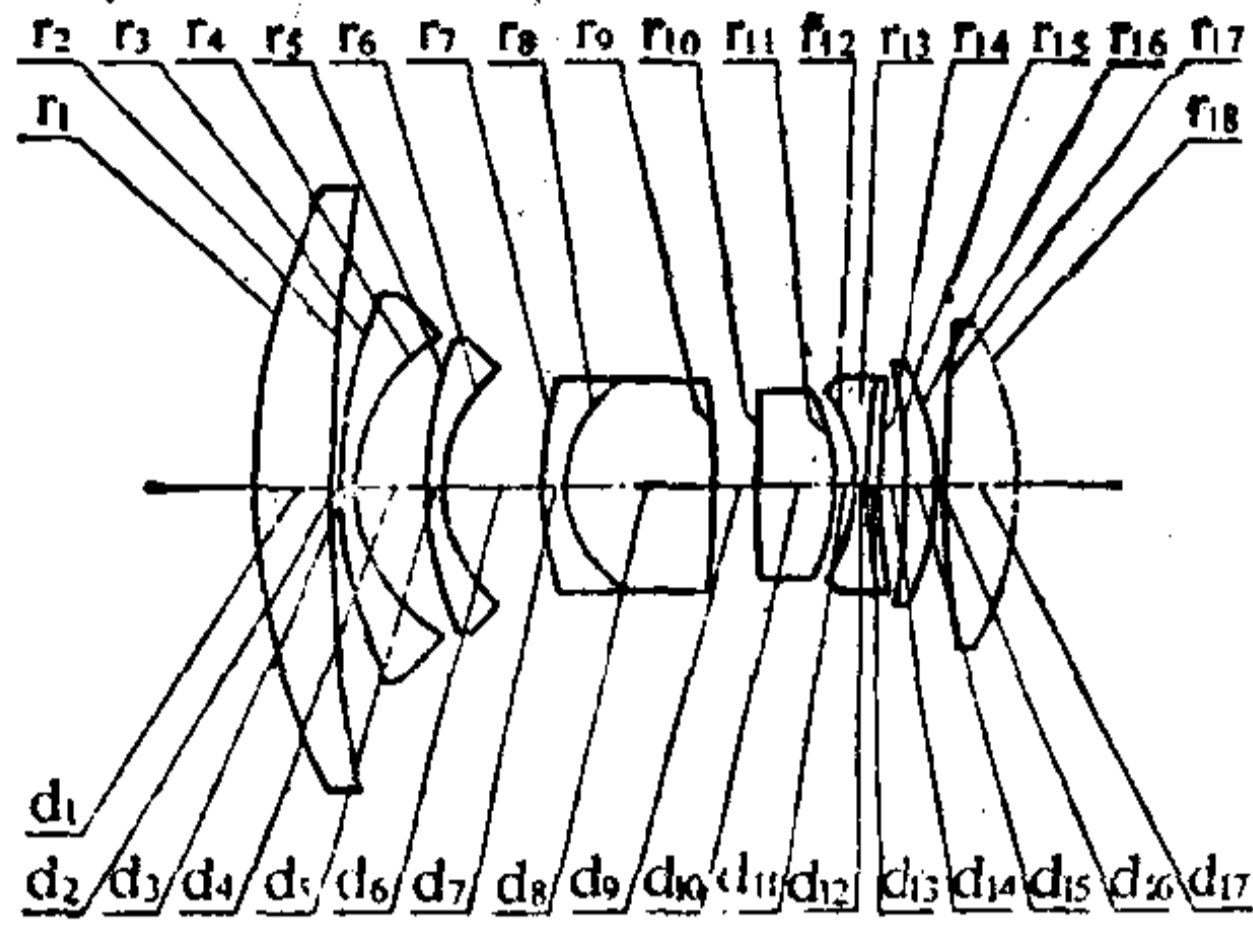
# 大孔径超广角镜头

E. F. L = 100.6

B. F. L = 191.38

FNo. = 2.4

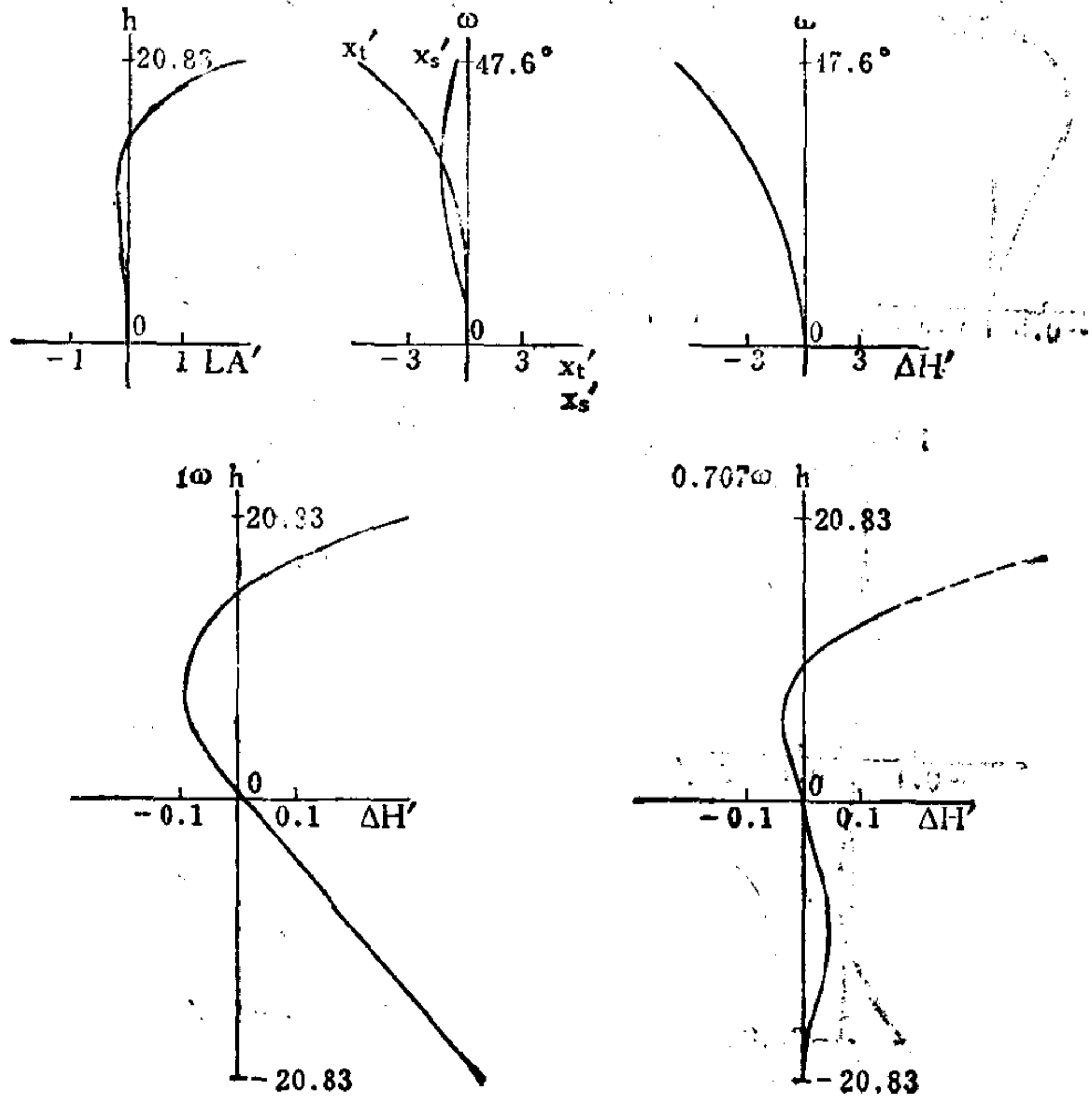
F. A. = ±47.6°



序号	r	d	n	v	序号	r	d	n	v
1	326.282	40.61	1.64000	60.2	10	740.533	39.45	1.65160	58.6
2	949.626	0.49			11	-100.524	10.47		
3	297.067	9.98	1.78590	44.2	12	-81.327	4.97	1.80518	25.4
4	88.291	38.62			13	228.834	7.50	1.48749	70.1
5	230.832	5.99	1.58913	61.1	14	340.745	9.88		
6	80.421	50.89			15	-409.070	21.91	1.51633	64.1
7	276.609	11.59	1.75700	47.9	16	-104.702	0.49		
8	60.873	78.01	1.74950	35.2	17	598.995	36.08	1.77250	49.6
9	-349.170	20.89*			18	-162.162			

20.89\* = 4.00 + 16.89

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.1267	0.0170	0.1018	-0.1993	-2.6229	110	-6.3%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{f1}$	$K'_{T0.7}$
100	2.118	-6.910	-5.969	-0.426	-5.543	0.3695	0.1510
70	-0.020	-3.189	-1.431	-1.230	-0.201	0.6205	0.1320



编号: 03-02-049

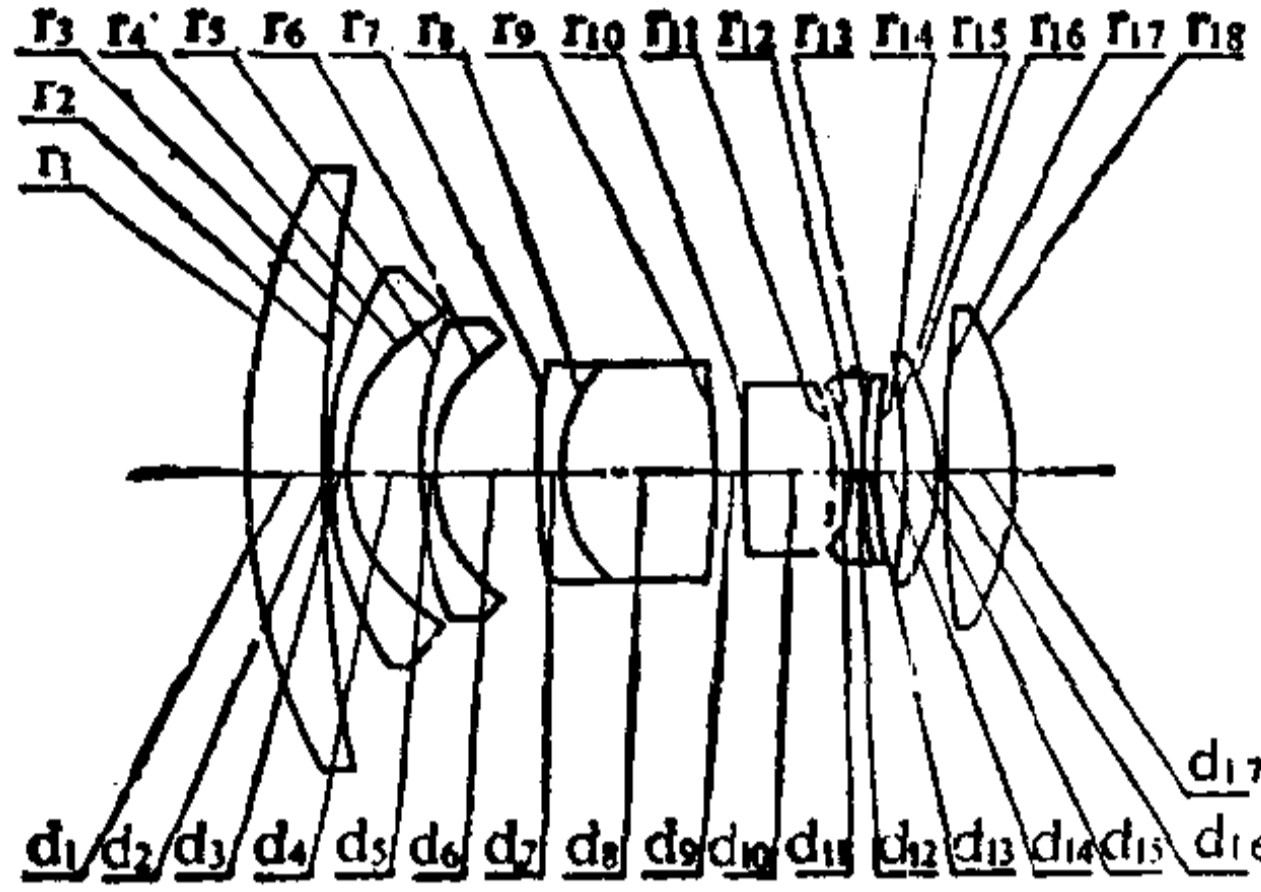
# 大孔径广角镜头

E. F. L = 100

B. F. L = 182.54

FNo. = 2.4

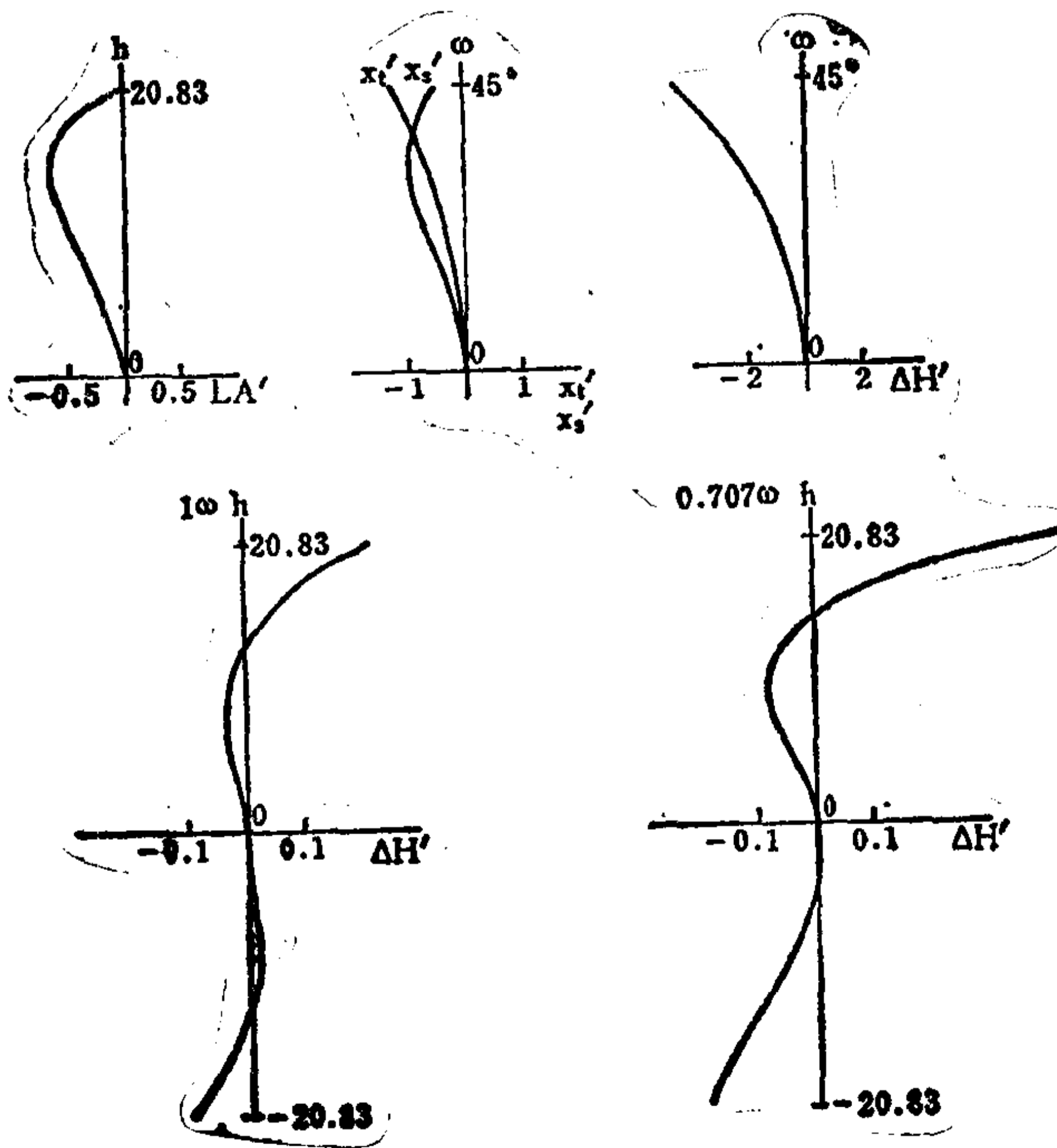
F. A. =  $\pm 45^\circ$



序号	r	d	n	v	序号	r	d	n	v
1	316.035	40.70	1.64100	56.9	10	742.100	45.35	1.65160	58.6
2	860.727	0.50			11	-99.663	10.00		
3	192.992	10.00	1.78800	47.5	12	-81.765	6.00	1.80518	25.4
4	85.423	38.70			13	243.745	6.00	1.48749	70.1
5	224.740	6.00	1.58913	61.1	14	307.472	9.90		
6	79.827	54.40			15	-409.540	21.95	1.56873	63.1
7	273.245	11.60	1.75500	52.5	16	-112.317	0.50		
8	76.470	78.15	1.74950	35.2	17	577.870	36.15	1.77250	49.6
9	-358.257	16.05*			18	-160.725			

$16.05^* = 8.00 + 8.05$

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.1904	0.0509	0.1287	-0.2063	-2.1410	100	-4.8%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_i$	$x'_s$	$x'_i - x'_s$	$K'_{T1}$	$K'_{r0.7}$
100	-0.068	-4.825	-1.281	-0.466	-0.815	0.0613	0.0042
70	-0.648	-2.266	-0.614	-1.008	0.394	0.1318	-0.0579



编号: 03-02-050

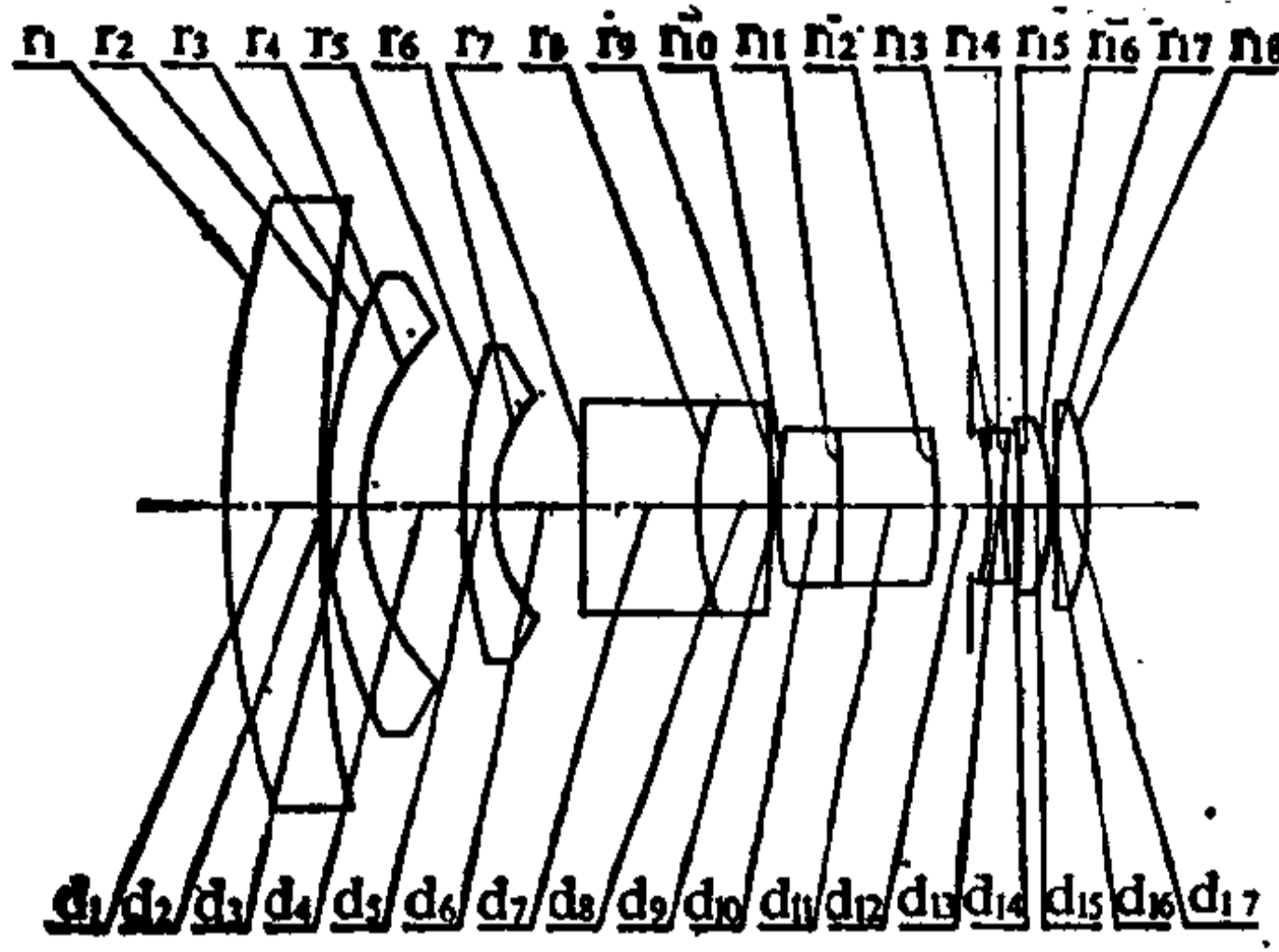
## 具有长后截距的超广角物镜

E. F. L = 100

B. F. L = 173.92

FNo. = 4

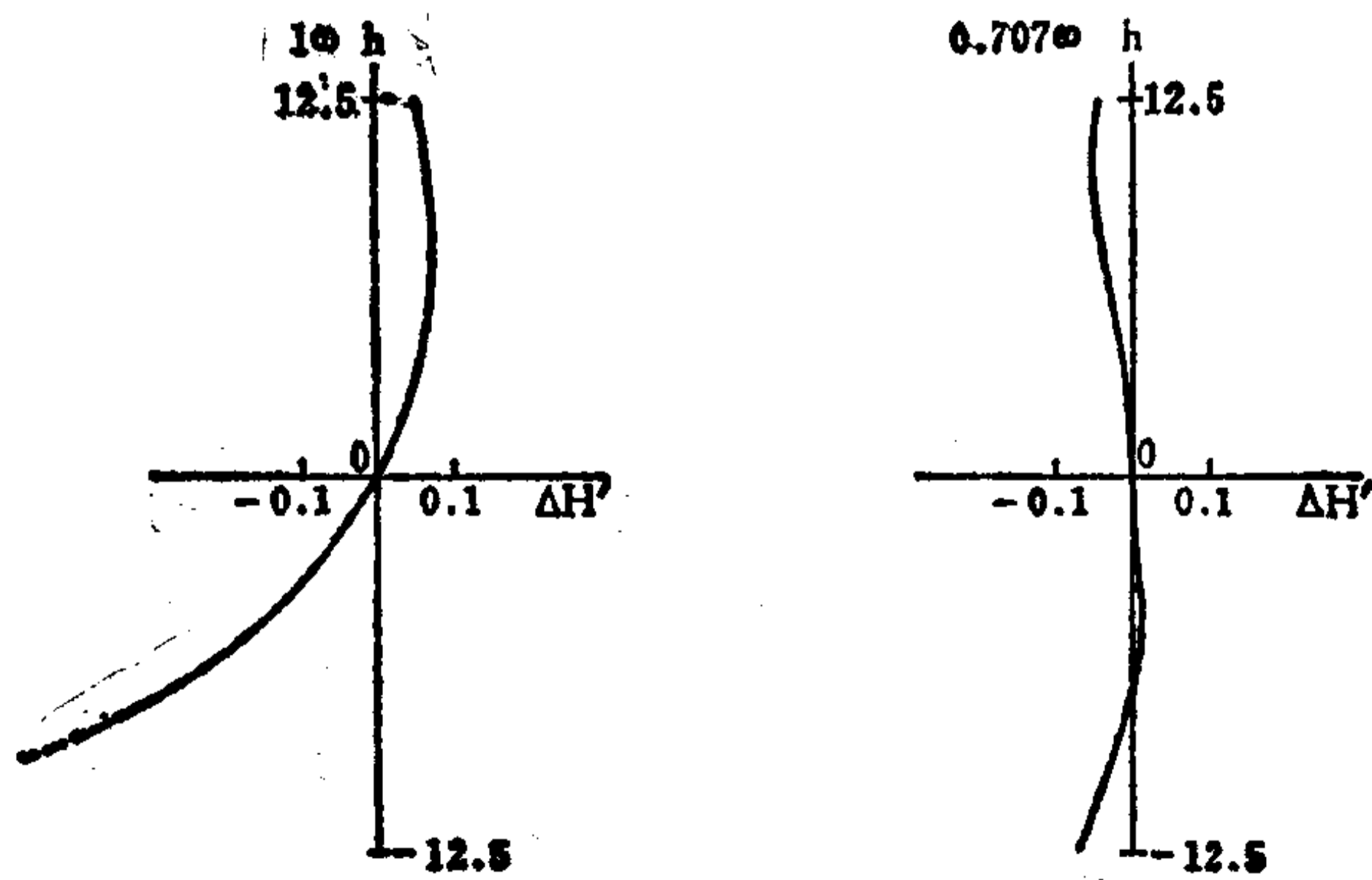
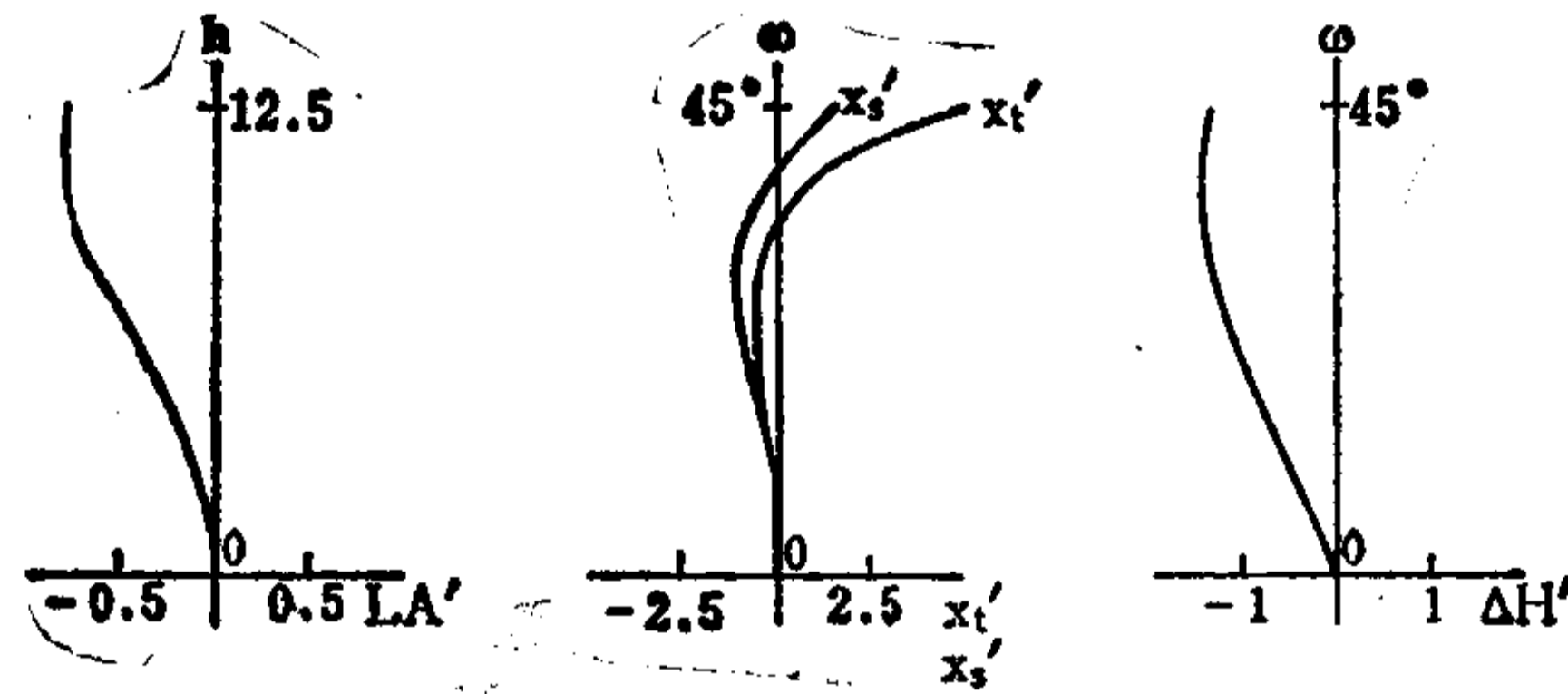
F. A. = ± 45°



序号	r	d	$n_e$	$v_e$	序号	r	d	$n_e$	$v_e$
1	285.31	27.68	1.52736	64.31	10	112.07	18.54	1.61114	45.92
2	887.45	0.46			11	-346.45	26.76	1.53430	48.66
3	138.37	10.15	1.62287	60.06	12	-100.72	13.84*		
4	72.02	27.68			13	-72.25	5.08	1.74618	27.97
5	146.90	8.30	1.66104	57.08	14	216.52	3.23		
6	48.35	25.38			15	-259.71	9.23	1.62287	60.06
7	∞	32.30	1.62287	60.06	16	-65.93	0.46		
8	81.52	20.30	1.53530	45.67	17	∞	9.23	1.59142	61.03
9	-274.84	0.92			18	-97.77			

$13.84^* = 5.00 + 8.84$

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.0587	0.0988	-0.1549	-0.0601	-0.4946	100	-1.3%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_i$	$x'_s$	$x'_i - x'_s$	$K'_{f1}$	$K'_{f0.7}$
100	-0.792	-1.269	5.208	1.422	3.786	-0.332	-0.162
70	-0.712	-1.337	-0.376	-0.805	0.429	-0.071	-0.037



编号: 03-02-051

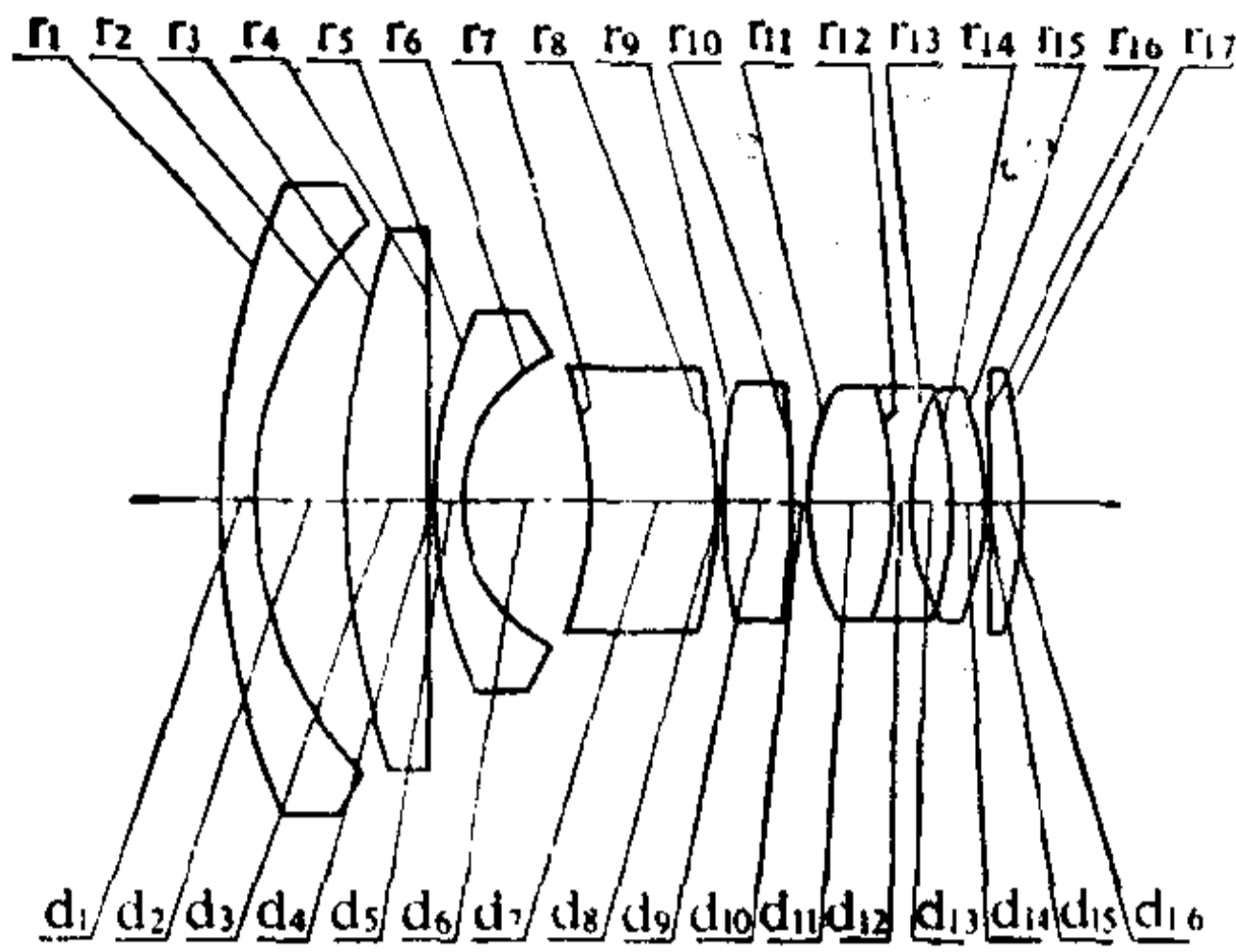
## 具有长后截距的小型广角物镜

E. F. L = 98.56

B. F. L = 147.9

FNo. = 3.5

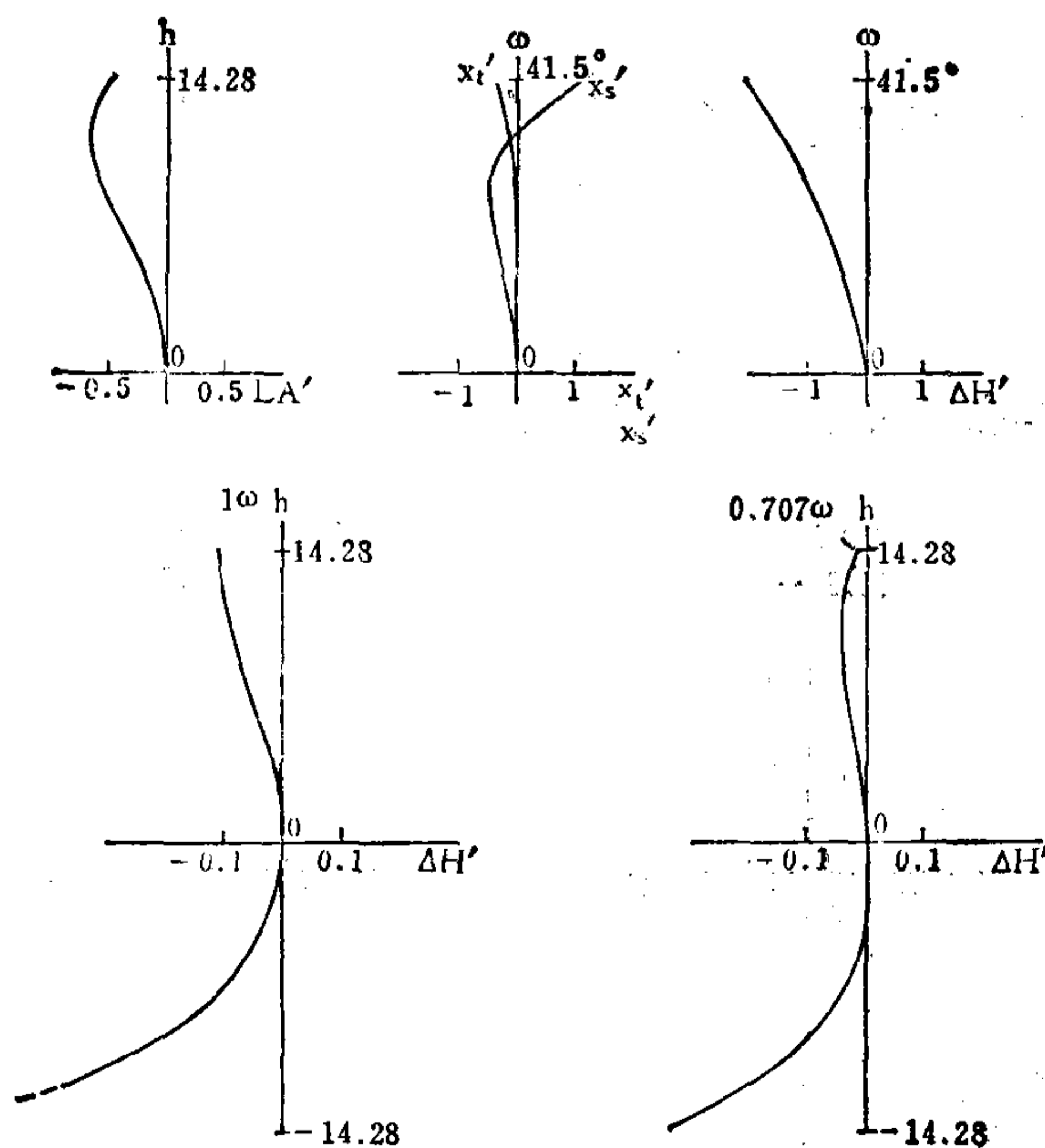
F. A. = ± 41.5°



序号	r	d	n	v	序号	r	d	n	v
1	221.0	10.0	1.51633	64.1	10	-247.9	5.0		
2	109.6	24.0			11	68.5	22.0	1.56883	56.0
3	228.0	23.5	1.83630	30.4	12	-116.0	4.5	1.69895	30.0
4	2495.6	0.5			13	63.1	11.0*		
5	133.5	7.5	1.62041	60.3	14	-124.5	10.3	1.58487	53.0
6	43.6	35.0			15	-73.4	0.5		
7	-110.0	35.0	1.51633	64.1	16	∞	9.5	1.56732	42.8
8	-138.1	0.5			17	-106.4			
9	179.0	20.0	1.55690	48.5					

11.0\* = 5.5 + 5.5

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.0699	0.0414	-0.0069	-0.0855	-0.8083	86.4	-2.5%
h 或 $\omega\%$	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{T1}$	$K'_{T0.7}$
100	-0.458	-2.190	-0.265	1.214	-1.479	-0.364	-0.159
70	-0.596	-1.222	-0.079	-0.446	0.367	-0.188	-0.078



编号: 03-02-052

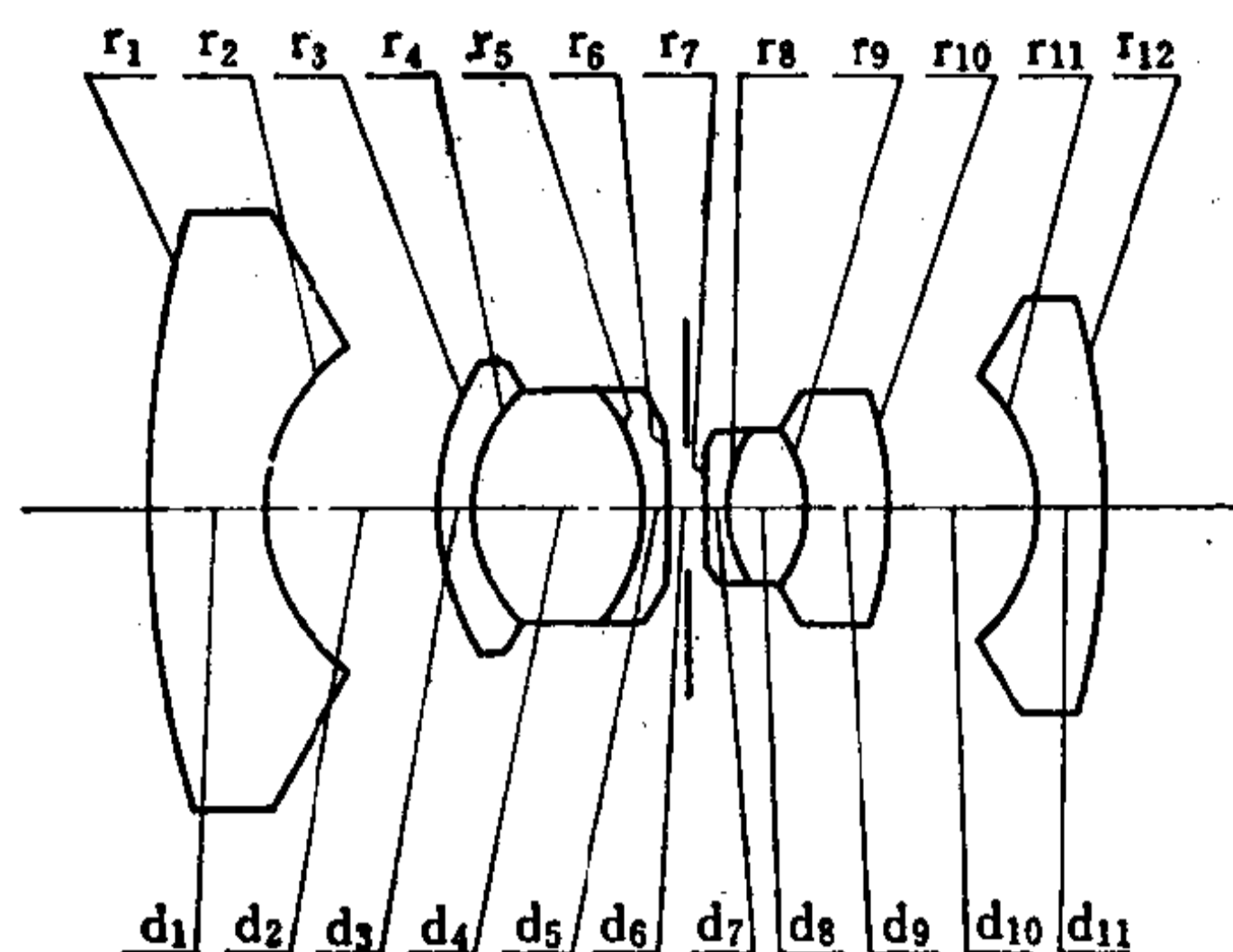
# 超广角摄影物镜

E. F. L = 100

B. F. L = 39

FNo. = 3.4

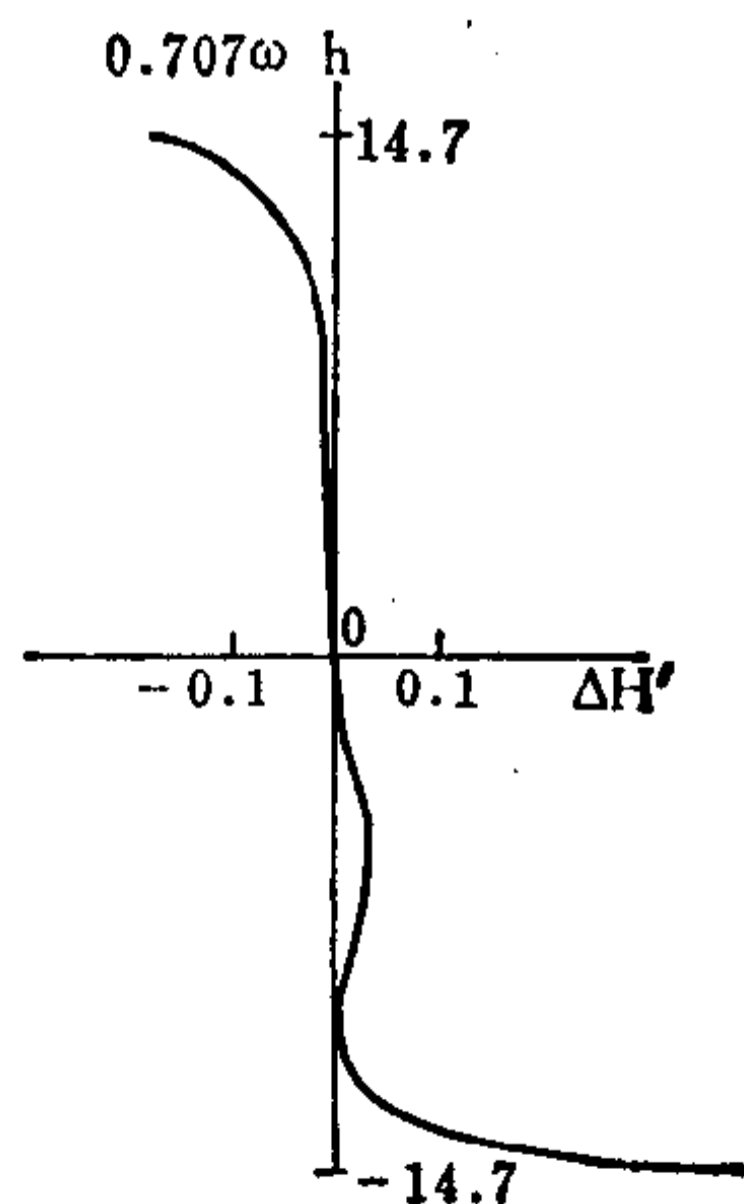
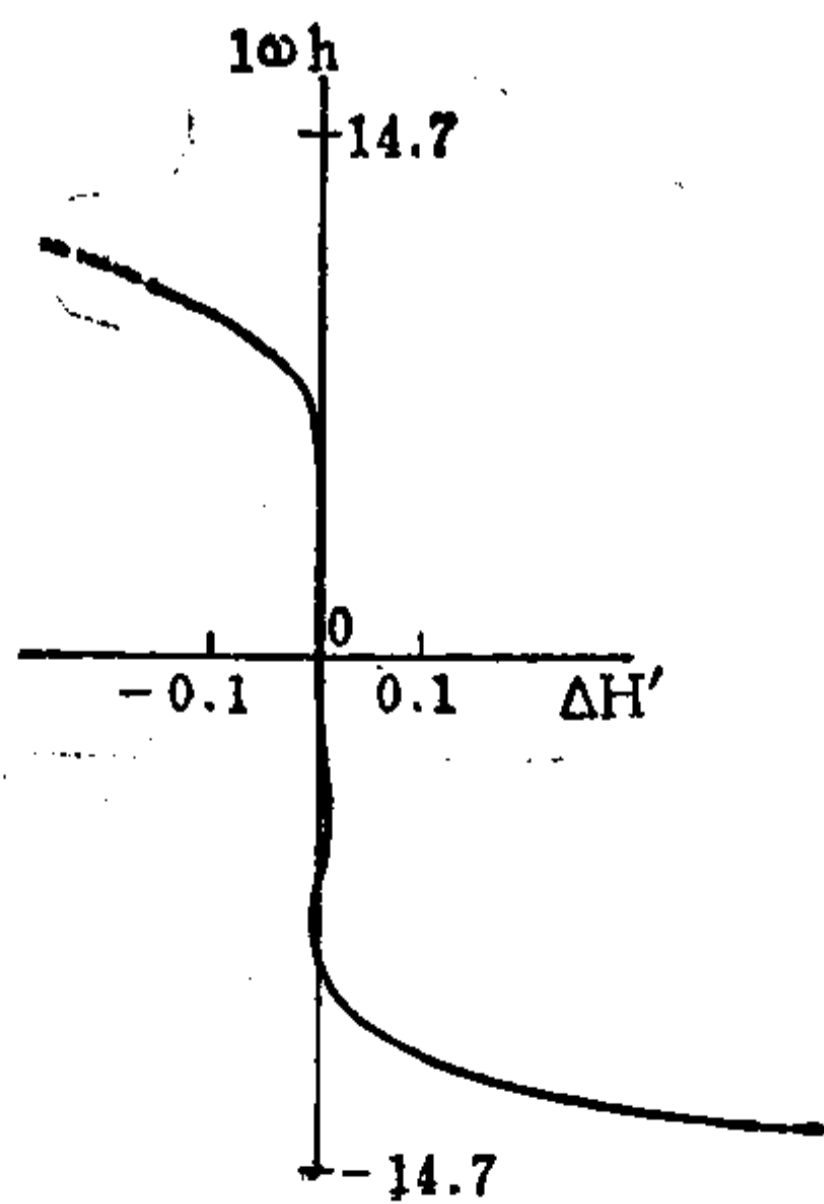
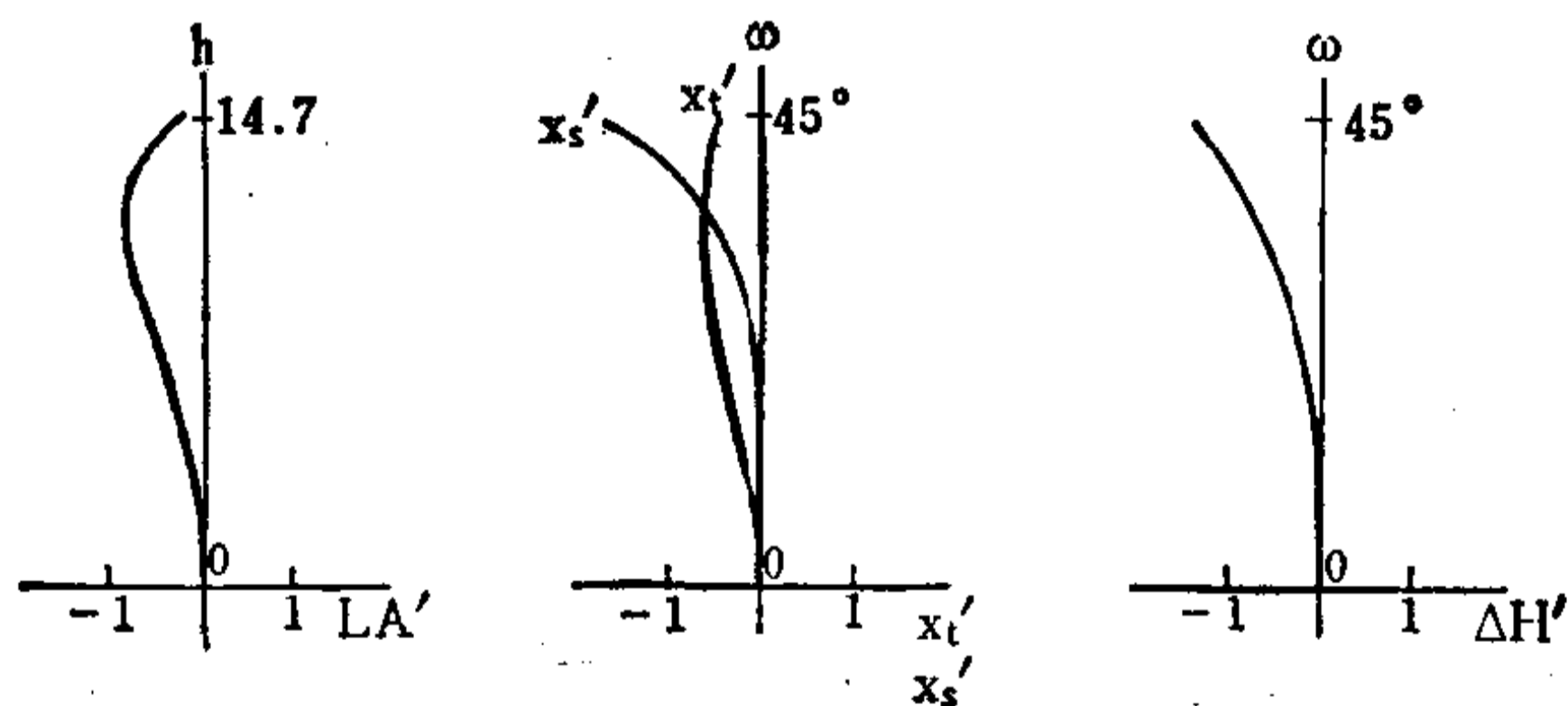
F. A. = ±45°



序号	r	d	$n_d$	$v$	序号	r	d	$n_d$	$v$
1	234.94	24.53	1.52249	59.64	7	318.75	4.62	1.56732	42.82
2	42.02	37.10			8	29.20	26.20	1.62299	58.12
3	61.73	7.25	1.72372	38.09	9	-28.48	18.39	1.71700	47.90
4	34.17	36.50	1.60729	49.29	10	-78.50	31.37		
5	-35.23	4.90	1.56013	47.03	11	-37.98	14.65	1.54072	47.22
6	-270.56	8.27*			12	-165.40			

8.27\* = 4.13 + 4.14

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.0867	-0.0299	-0.0476	0.0402	-0.3022	100	-1.4%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_i$	$x'_s$	$x'_i - x'_s$	$Kf_1$	$Kf_{0.7}$
100	-0.241	-1.408	-0.378	-1.746	1.368	-0.037	-0.065
70	-0.771	-0.492	-0.605	-0.356	-0.249	0.112	-0.011



编号: 03-02-053

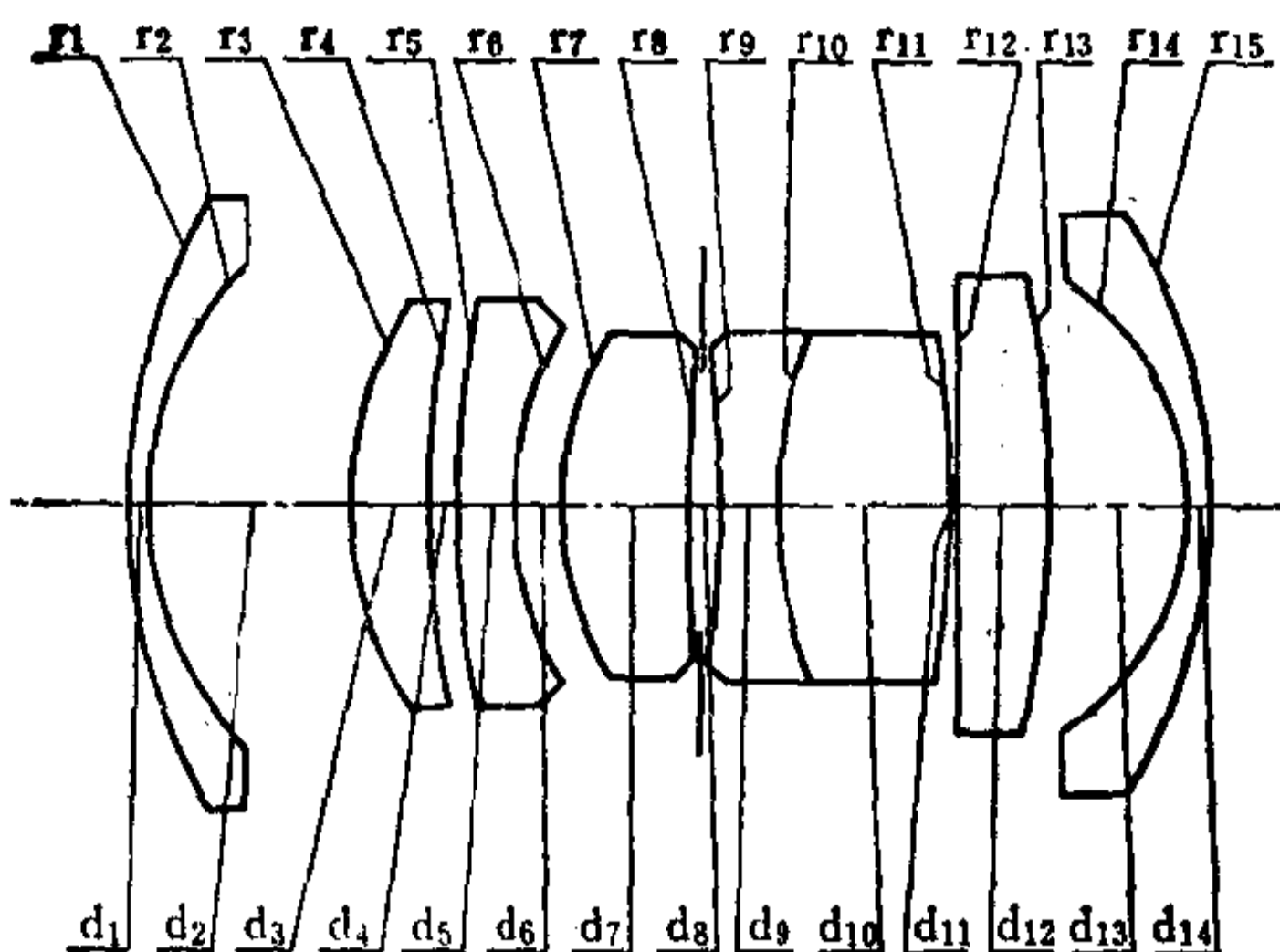
# 八片式广角物镜

E. F. L = 0.997

B. F. L = 0.624

FNo. = 5.6

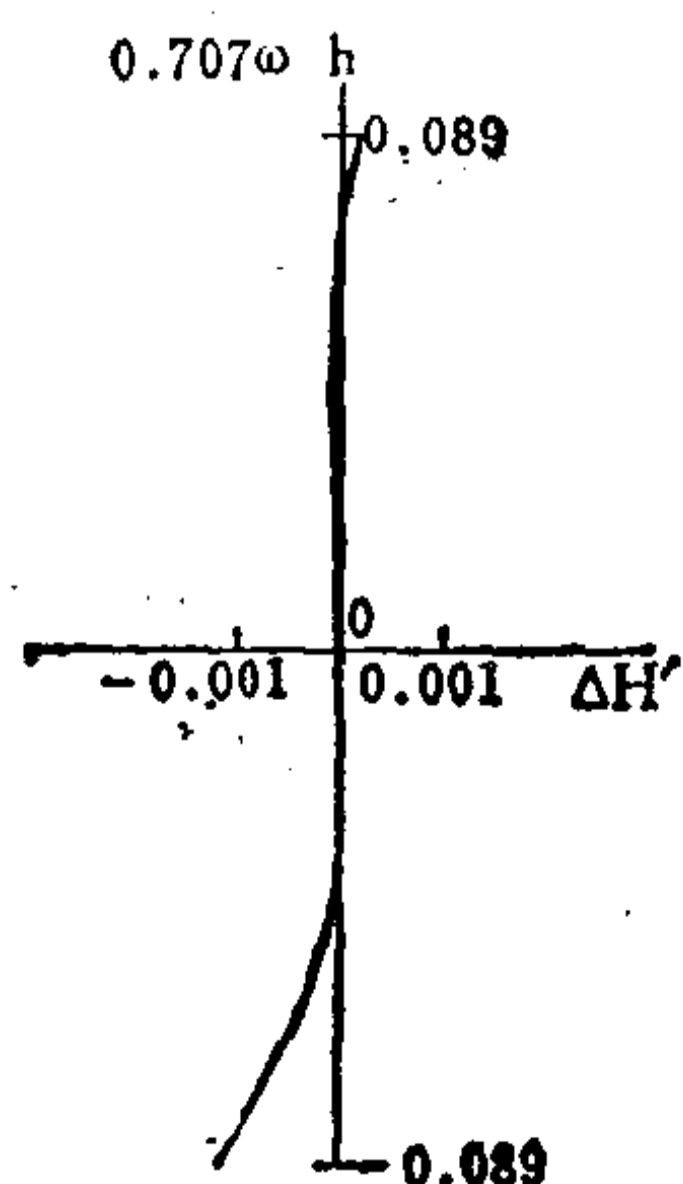
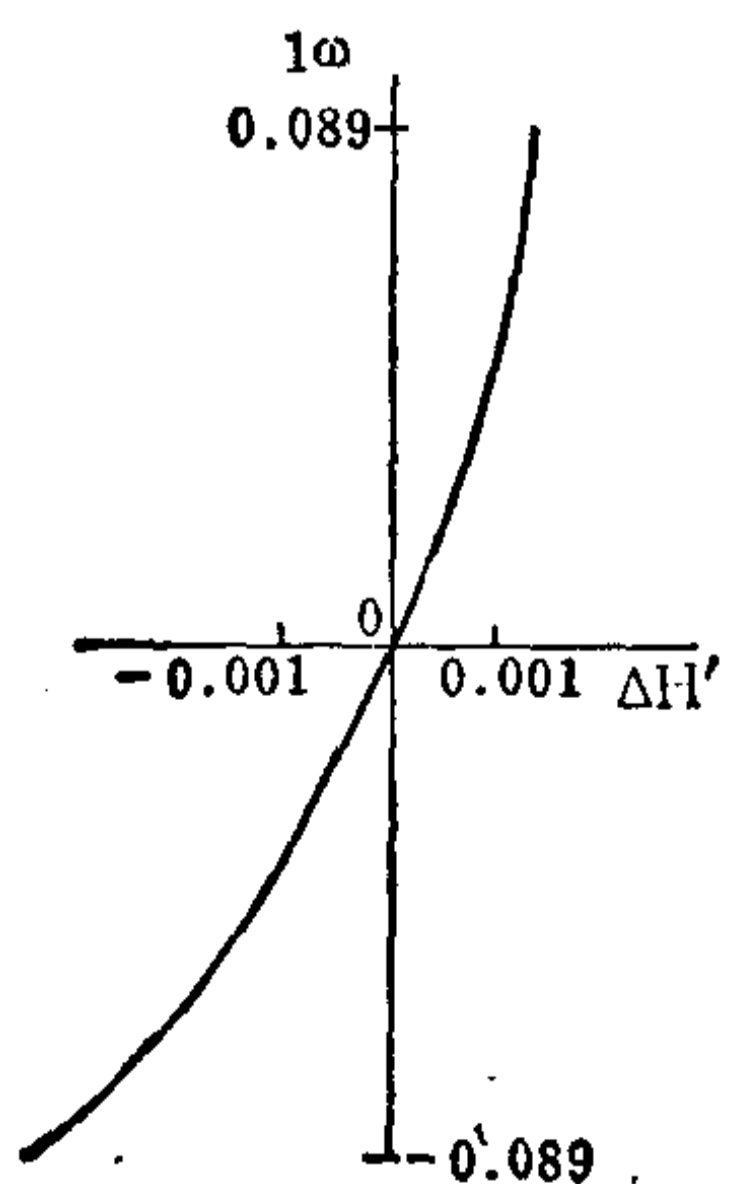
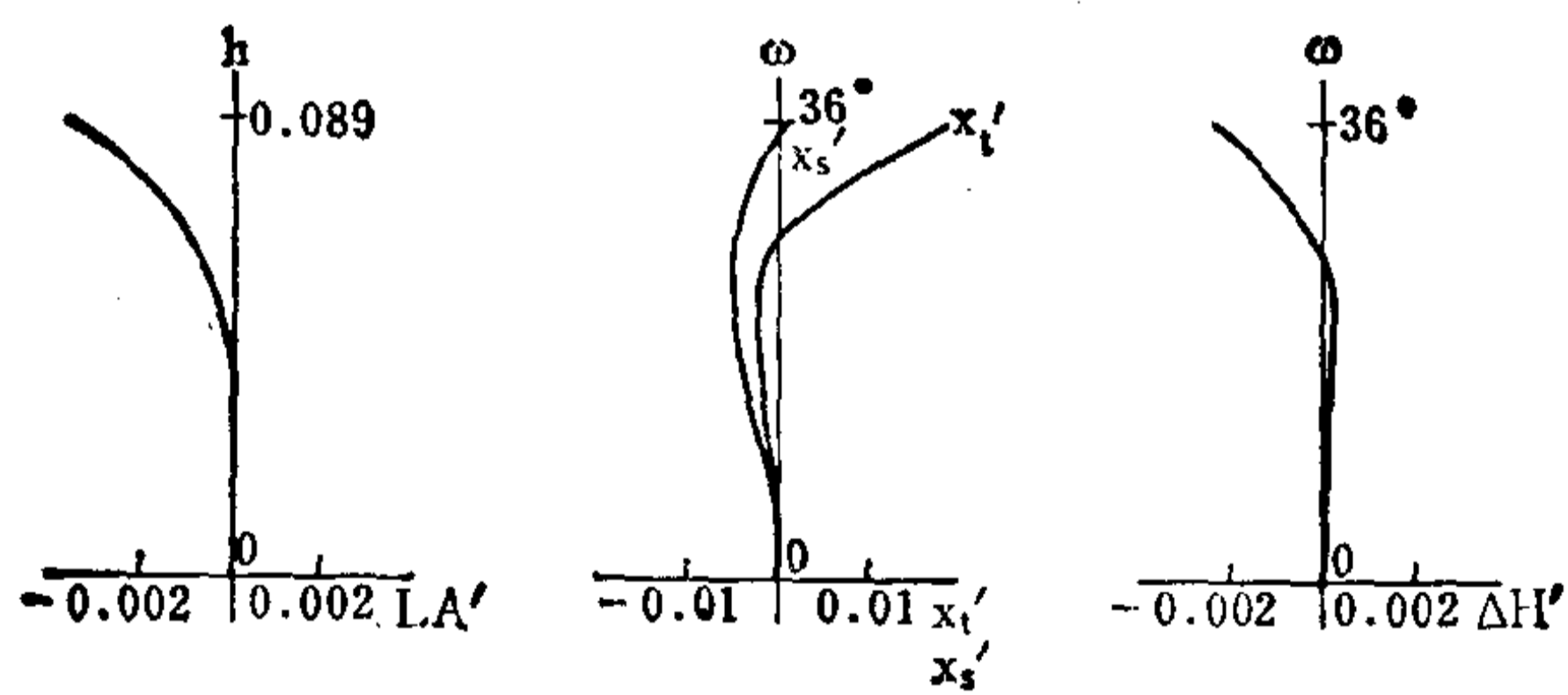
F. A. = ± 36°



序号	r	d	n <sub>D</sub>	v <sub>D</sub>	序号	r	d	n <sub>D</sub>	v <sub>D</sub>
1	0.4865	0.0137	1.5165	64.1	9	-1.0477	0.0458	1.7495	35.0
2	0.2711	0.1637			10	0.3742	0.1371	1.8155	41.4
3	0.2867	0.0617	1.6583	57.3	11	-1.0776	0.0055		
4	0.7593	0.0214			12	-35.2349	0.0740	1.6935	53.4
5	0.8531	0.0439	1.6056	43.9	13	-0.9079	0.1096		
6	0.2626	0.0395			14	-0.2124	0.0186	1.5150	54.3
7	0.2812	0.1003	1.5596	61.2	15	-0.4169			
8	1.5406	0.0219*							

0.0219\* = 0.0100 + 0.0119

	ΣS <sub>1</sub>	ΣS <sub>2</sub>	ΣS <sub>3</sub>	ΣS <sub>4</sub>	ΣS <sub>5</sub>	HI	QP(1ω)
	0.000008	-0.000020	-0.000003	-0.000198	0.000277	0.72	-0.3%
h 或 ω%	LA'	ΔH'	x <sub>t</sub> '	x <sub>s</sub> '	x <sub>t</sub> ' - x <sub>s</sub> '	K <sub>T1</sub>	K <sub>T0.7</sub>
100	-0.00392	-0.00235	0.01939	0.00110	0.01829	-0.00106	-0.00033
70	-0.00062	0.00007	-0.00233	-0.00491	0.00258	-0.00052	-0.00019





编号: 03-02-054

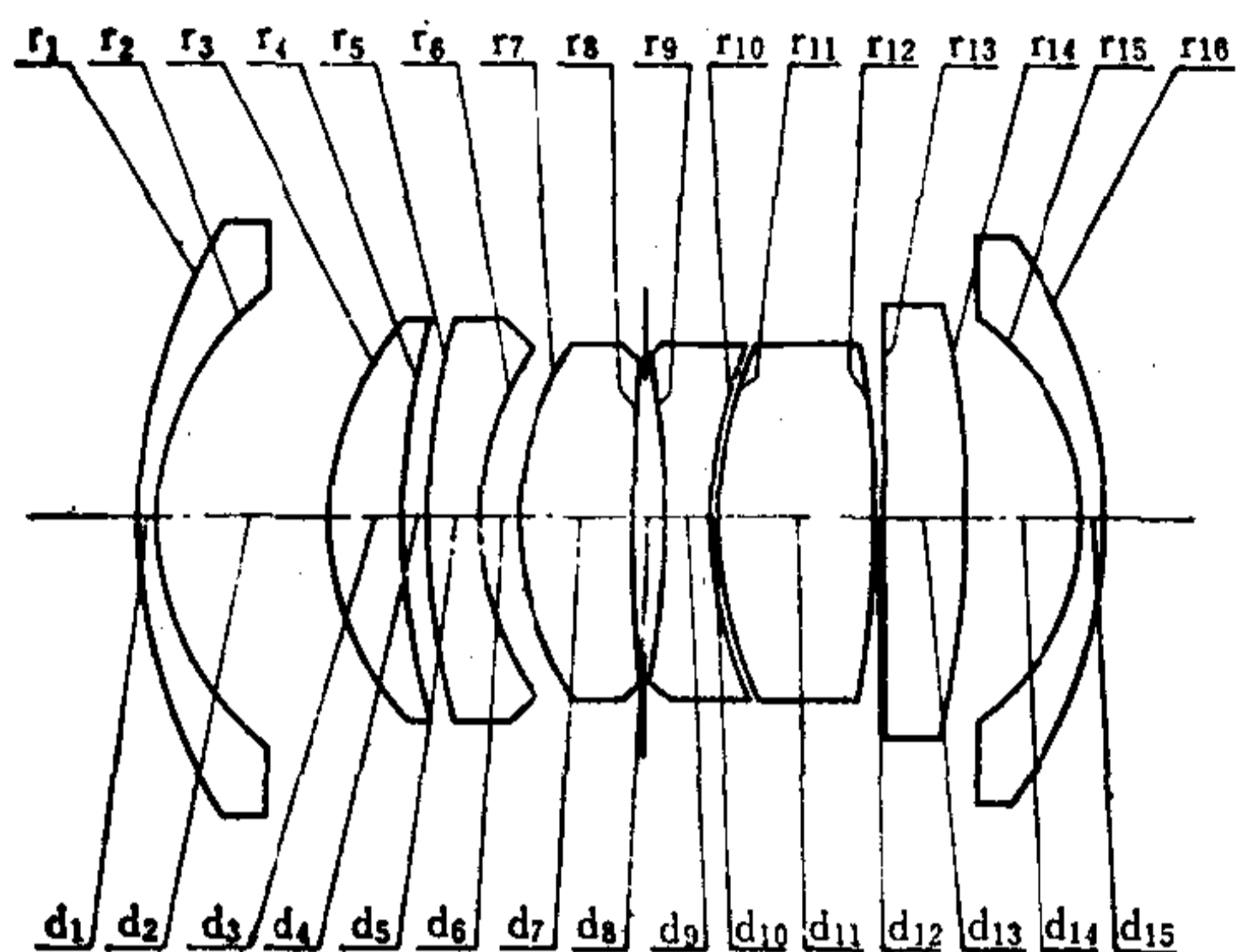
# 八片式广角物镜

E. F. L = 0.835

B. F. L = 0.509

FN<sub>0</sub> = 5.6

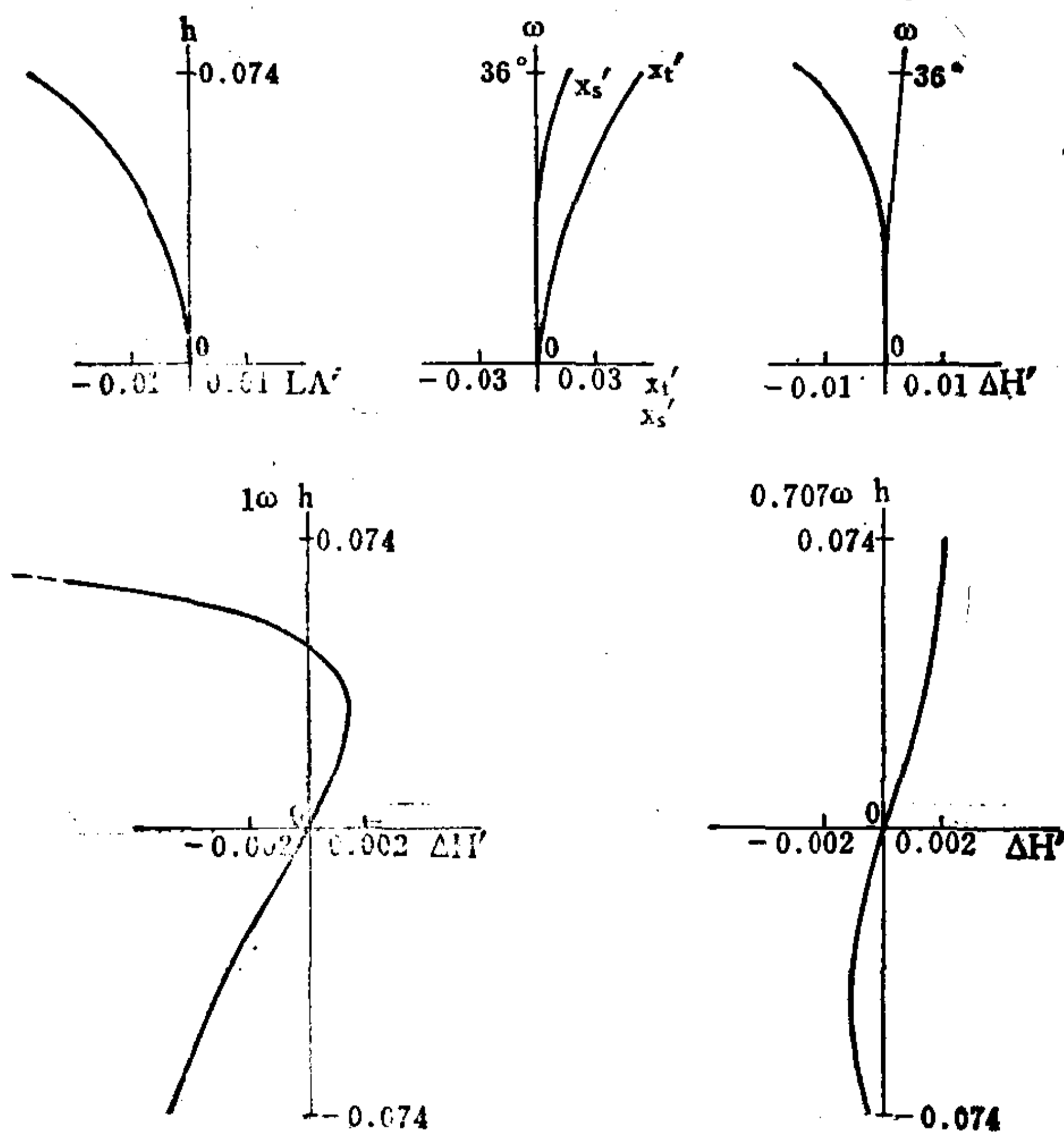
F. A. = ±36°



序号	r	d	n <sub>D</sub>	v <sub>D</sub>	序号	r	d	n <sub>D</sub>	v <sub>D</sub>
1	0.4844	0.0137	1.5165	64.1	9	-1.0050	0.0460	1.7495	35.0
2	0.2502	0.1520			10	0.3702	0.0017		
3	0.2591	0.0620	1.6510	55.8	11	0.3770	0.1370	1.8155	44.4
4	0.6434	0.0210			12	-0.9263	0.0060		
5	0.8338	0.0446	1.6056	43.9	13	-28.0256	0.0698	1.6910	54.8
6	0.2589	0.0325			14	-0.8150	0.1006		
7	0.2651	0.1000	1.5596	61.2	15	-0.2110	0.0190	1.5150	54.3
8	1.7450	0.0203*			16	-0.4302			

0.0203\* = 0.0100 + 0.0103

	ΣS <sub>1</sub>	ΣS <sub>2</sub>	ΣS <sub>3</sub>	ΣS <sub>4</sub>	ΣS <sub>5</sub>	HI	QP(1ω)
	-0.00035	0.00005	0.00033	-0.00029	-0.00129	0.61	-2.9%
h 或 ω%	LA'	ΔH'	x <sub>t</sub> '	x <sub>s</sub> '	x <sub>t</sub> ' - x <sub>s</sub> '	K <sub>T1</sub> '	K <sub>r0.7</sub> '
100	-0.023	-0.018	0.055	0.017	0.038	-0.2520	-0.0020
70	-0.012	-0.004	0.029	0.004	0.025	0.0007	0.0003



编号: 03-02-055

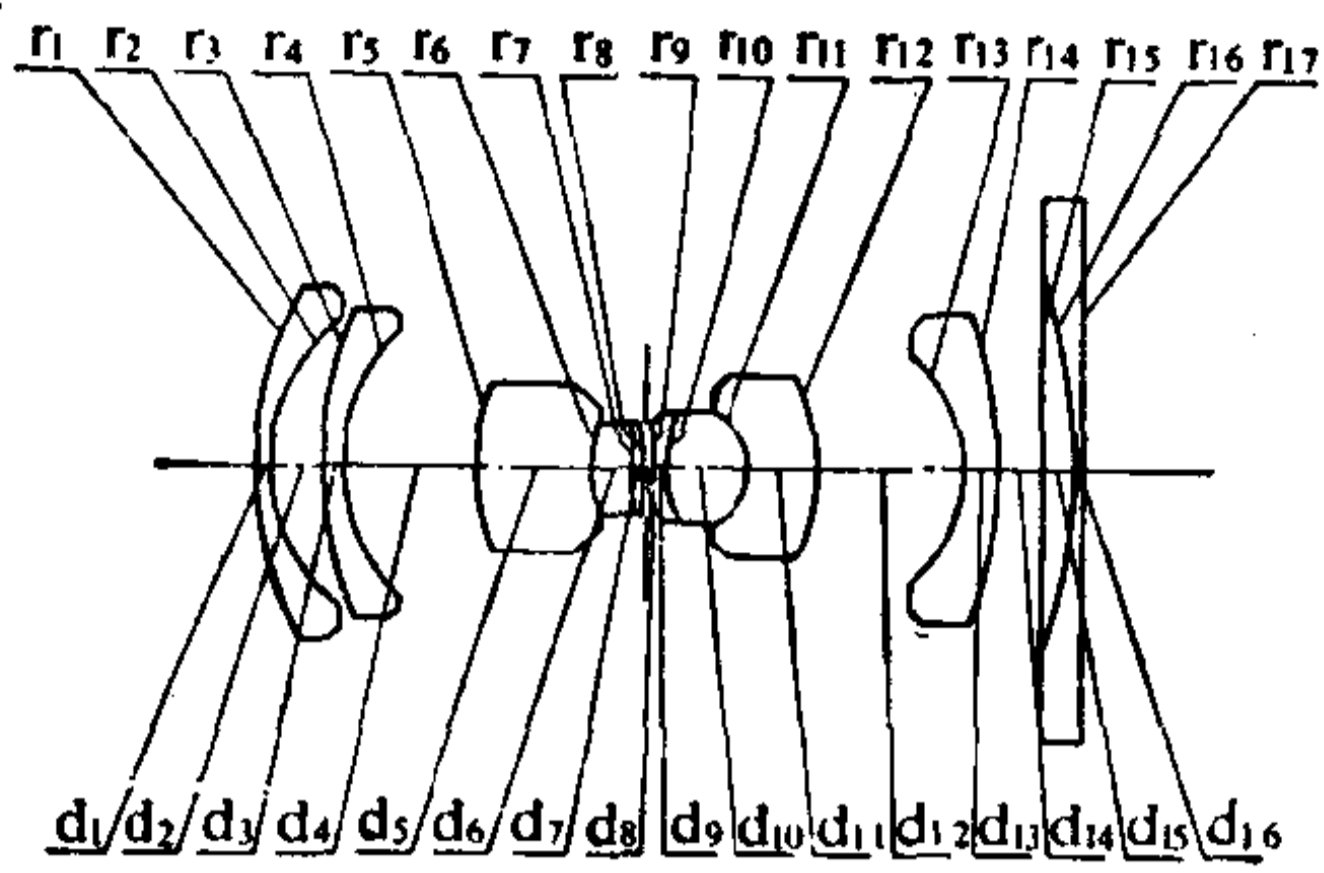
# 广 角 物 镜

E. F. L = 1

B. F. L = 0.2896

FNo. = 5.6

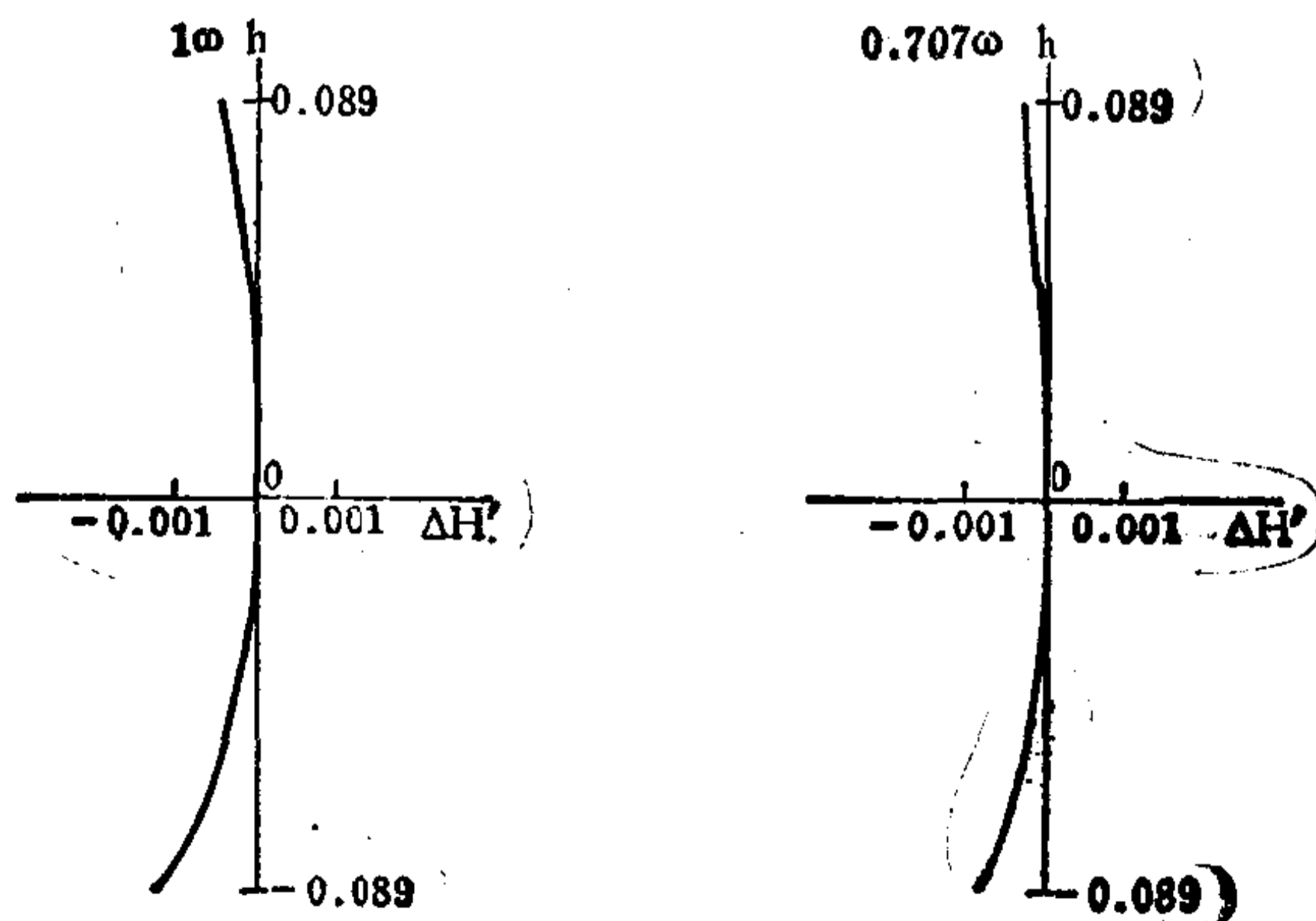
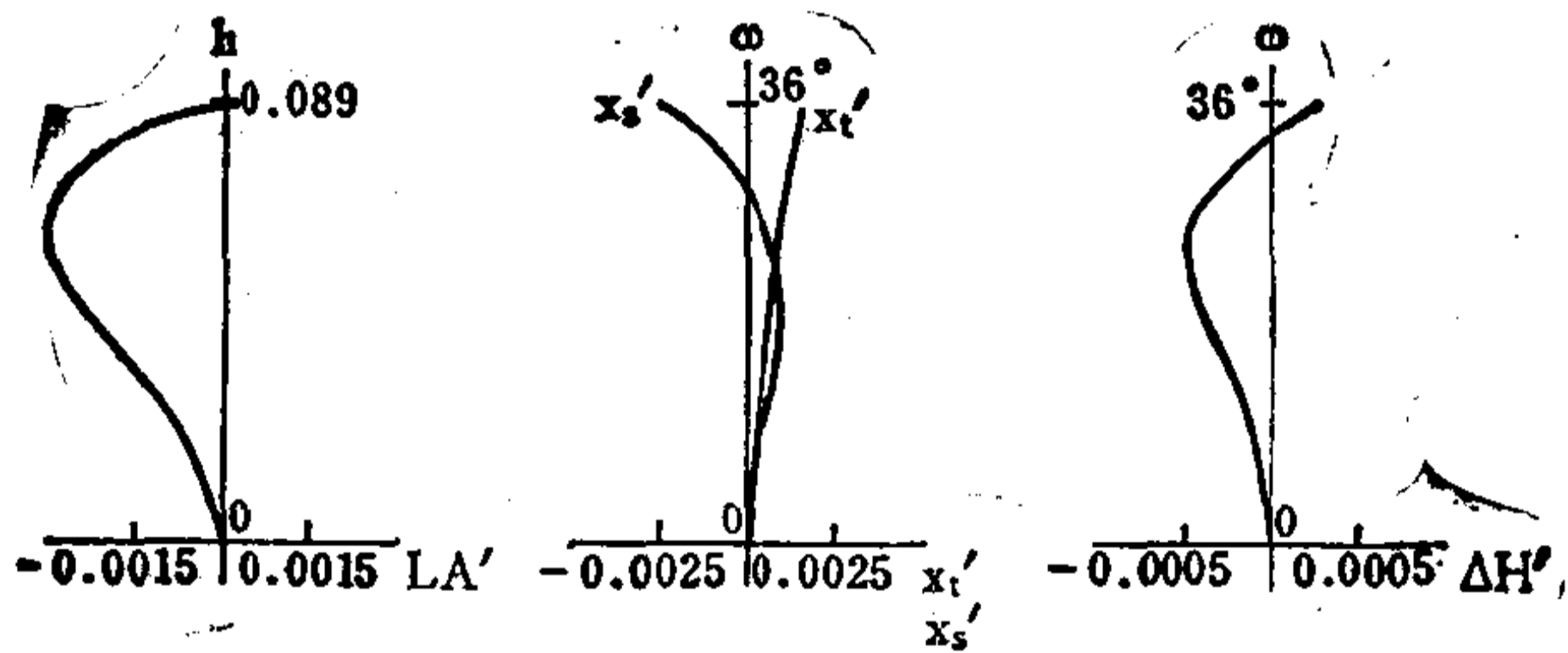
F. A. = ± 36°



序号	r	d	nd	vd	序号	r	d	nd	vd
1	1.0092	0.0384	1.50048	65.9	10	0.2865	0.2137	1.62230	53.1
2	0.4817	0.1362			11	-0.2465	0.1753	1.71736	29.5
3	0.9586	0.0411	1.48749	70.0	12	-0.5803	0.3772		
4	0.4897	0.3553			13	-0.3901	0.0926	1.64850	53.0
5	0.5419	0.2830	1.71300	53.9	14	-1.1741	0.1260		
6	0.2447	0.1131	1.60729	59.9	15	∞	0.0876	1.50013	63.2
7	1.3703	0.0192	1.60717	40.2	16	-1.4786	0.0164	1.50048	65.9
8	-1.8791	0.0345*			17	∞			
9	-2.8252	0.0274	1.57250	57.5					

0.0345\* = 0.0170 + 0.0175

	ΣS <sub>1</sub>	ΣS <sub>2</sub>	ΣS <sub>3</sub>	ΣS <sub>4</sub>	ΣS <sub>5</sub>	HI	QP(1ω)
	-0.00016	-0.00008	-0.00002	0.00008	-0.00037	0.73	0.03%
h 或 ω%	LA'	ΔH'	x <sub>t</sub> '	x <sub>s</sub> '	x <sub>t</sub> ' - x <sub>s</sub> '	K <sub>i1</sub>	K <sub>T0.7</sub>
100	0.00027	0.00024	0.00168	-0.00256	0.00424	-0.00079	-0.00035
70	-0.00292	-0.00053	0.00118	0.00074	0.00044	-0.00059	-0.00033



编号: 03-02-056

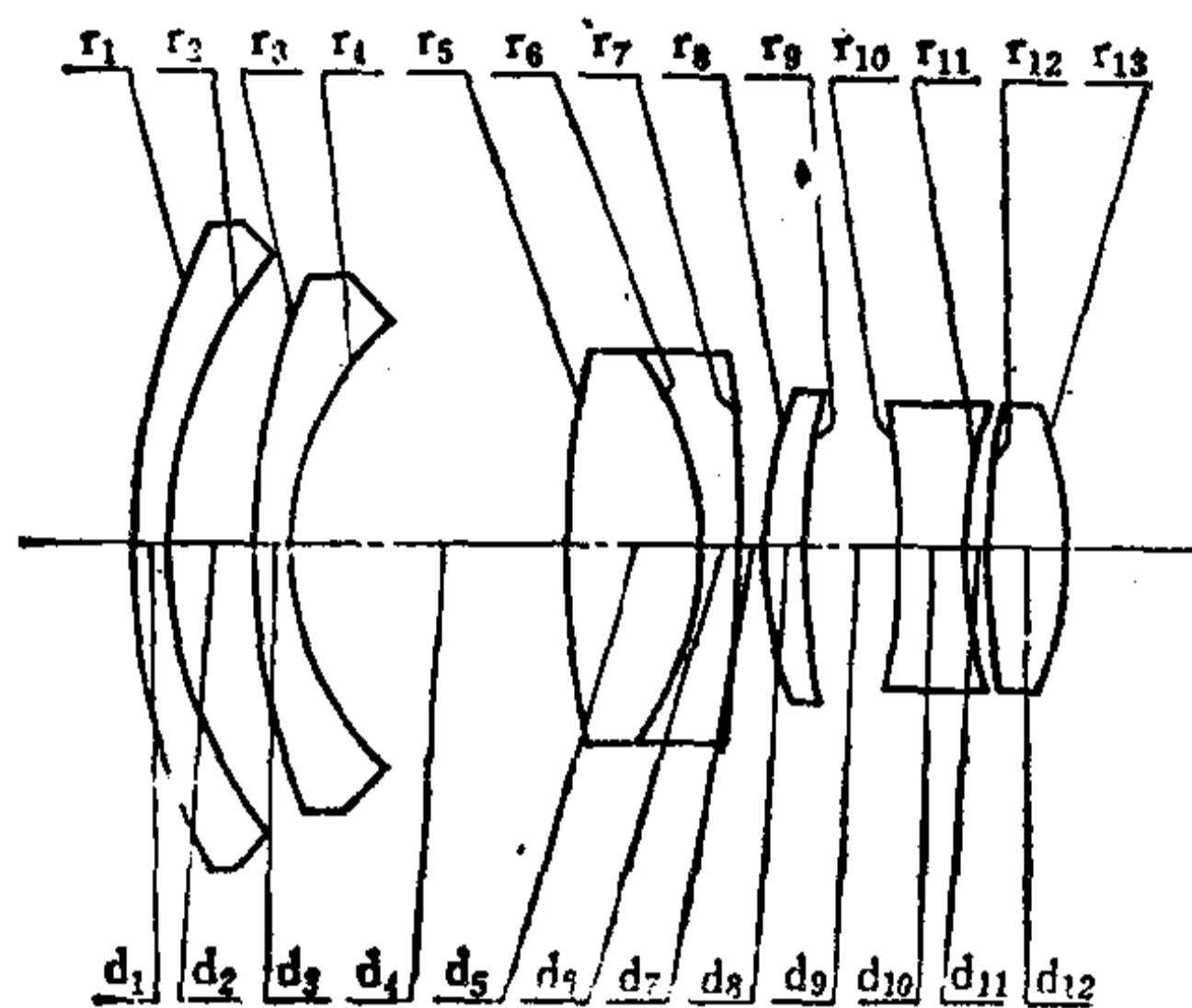
## 摄影或电影摄影用的广角物镜

E. F. L = 100

B. F. L = 129.2

FNo. = 4

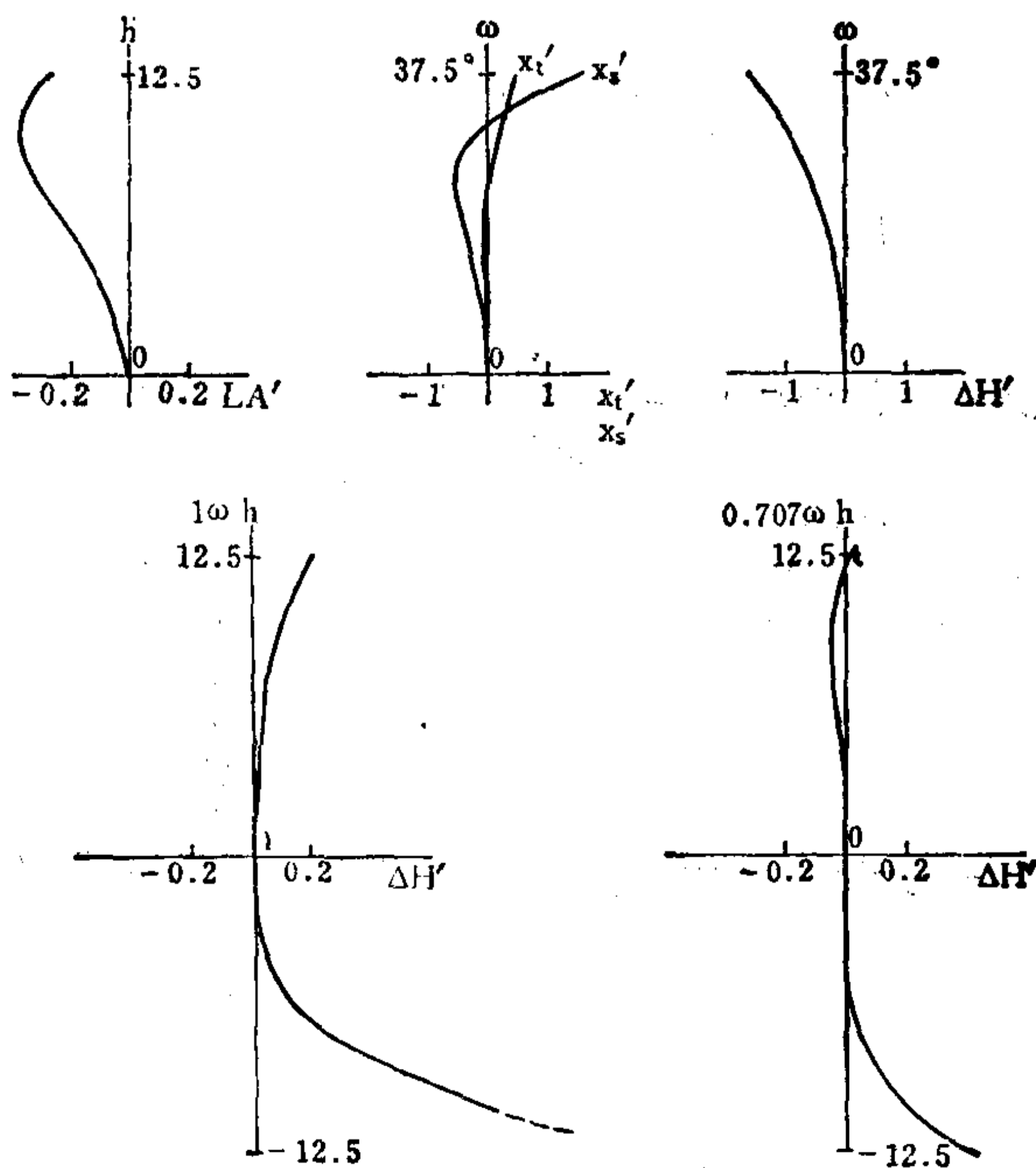
F. A. =  $\pm 37.5^\circ$



序号	r	d	$n_e$	$v_e$	序号	r	d	$n_e$	$v_e$
1	101.29	4.91	1.51871	63.96	8	64.24	6.31	1.62287	60.06
2	65.35	12.28			9	137.14	12.28		
3	100.72	4.91	1.51871	63.96	10	-110.72	10.17	1.70444	29.84
4	41.50	39.29			11	66.66	2.81*		
5	131.77	19.30	1.62508	52.93	12	175.52	10.53	1.68081	55.31
6	-46.87	5.26	1.50228	65.92	13	-56.17			
7	-319.47	3.51							

2.81\* = 1.40 + 1.41

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.0290	-0.0102	-0.0016	-0.0634	-0.3720	76.02	-2.2%
h 或 $\omega\%$	LA'	$\Delta H'$	$x_t'$	$x_s'$	$x_t' - x_s'$	$K_{T1}'$	$K_{T0.7}'$
100	-0.265	-1.666	0.430	1.615	-1.185	0.8796	0.2595
70	-0.343	-0.678	0.078	-0.498	0.576	0.2367	0.0145



编号: 03-02-057

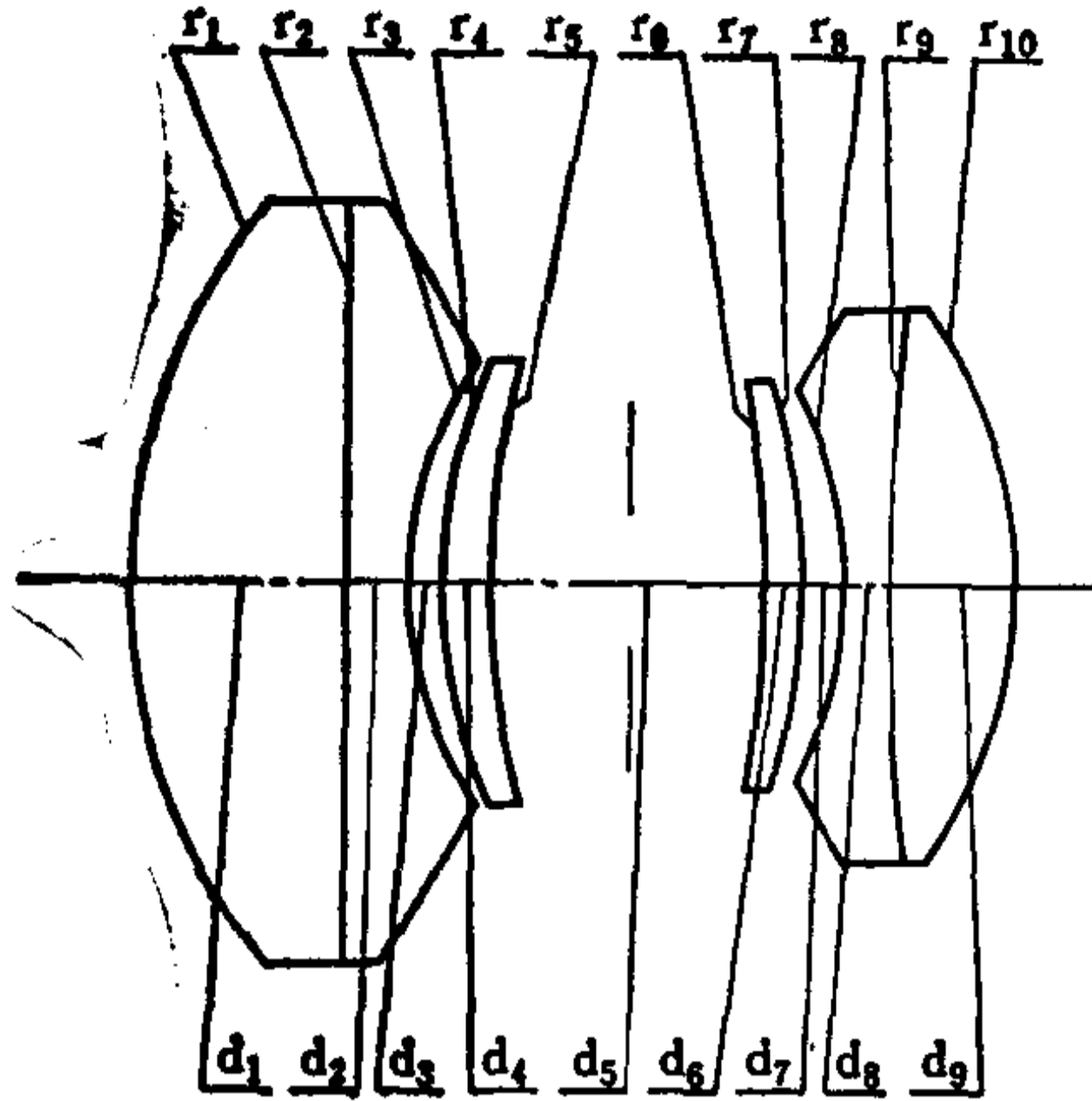
## 改进的对称式广角物镜

E. F. L = 100.24

B. F. L = 83.88

FNo. = 5.6

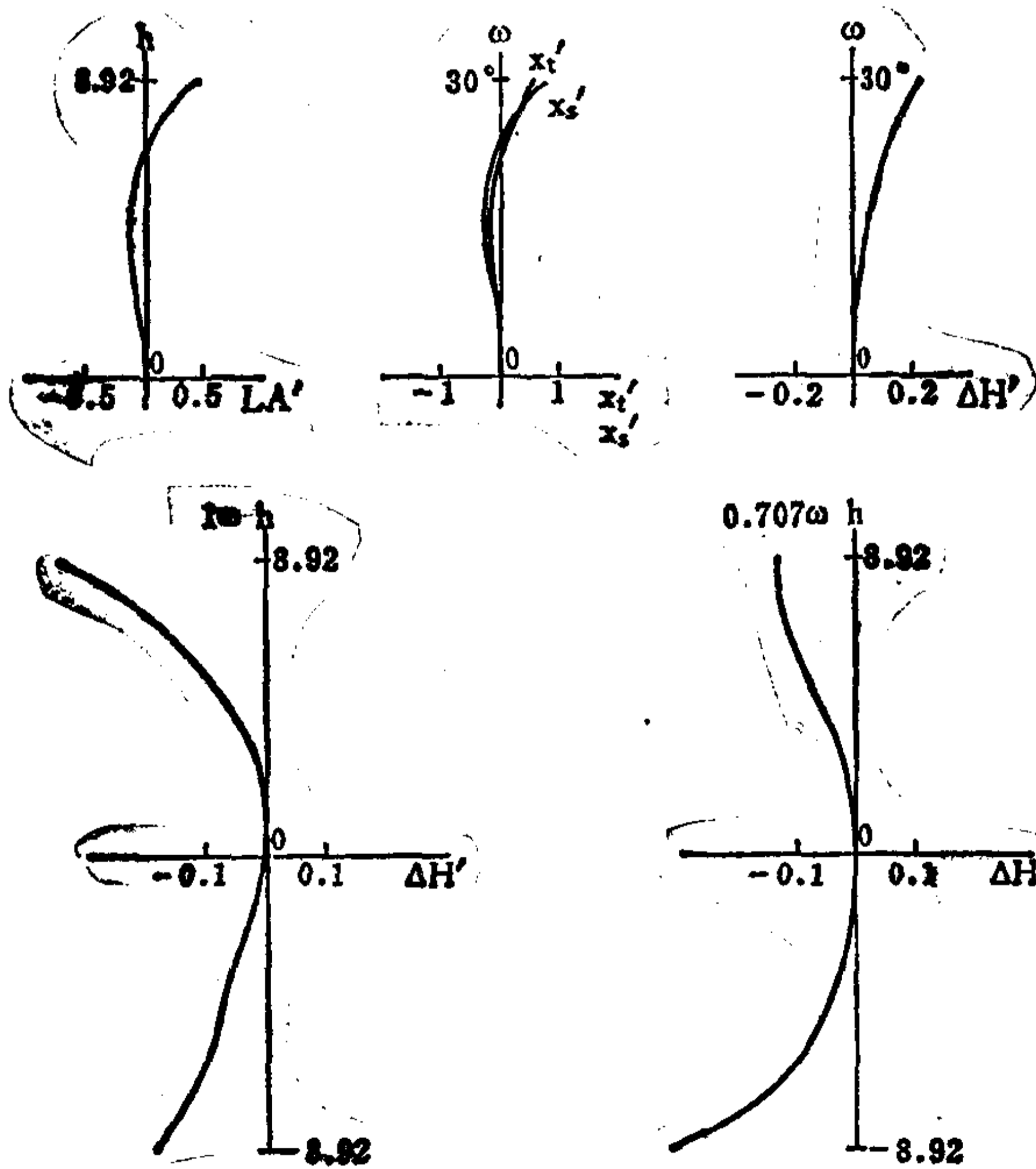
F. A. =  $\pm 30^\circ$



序号	r	d	$n_e$	$\nu_e$	序号	r	d	$n_e$	$\nu_e$
1	22.79	8.08	1.6055	60.5	6	-42.35	1.37	1.5201	65.0
2	-774.00	2.40	1.5543	49.3	7	-25.83	1.63	1.5543	49.3
3	14.65	1.20			8	-14.93	1.66	1.5543	49.3
4	20.20	1.89	1.5201	65.0	9	142.70	4.77	1.6055	60.5
5	31.94	10.10*			10	-17.95			

10.10\* = 5.30 + 4.80

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP( $\omega$ )
	-0.00921	-0.01525	0.00386	-0.01777	0.04301	57.9	0.4%
h 或 $\omega\%$	LA'	$\Delta H'$	$x'_i$	$x'_s$	$x'_i - x'_s$	$K'_{T1}$	$K'_{T0.7}$
100	0.473	0.239	0.699	0.788	-0.089	-0.269	-0.118
70	-0.051	0.095	-0.042	-0.129	-0.087	-0.221	-0.098



编号: 03-02-058

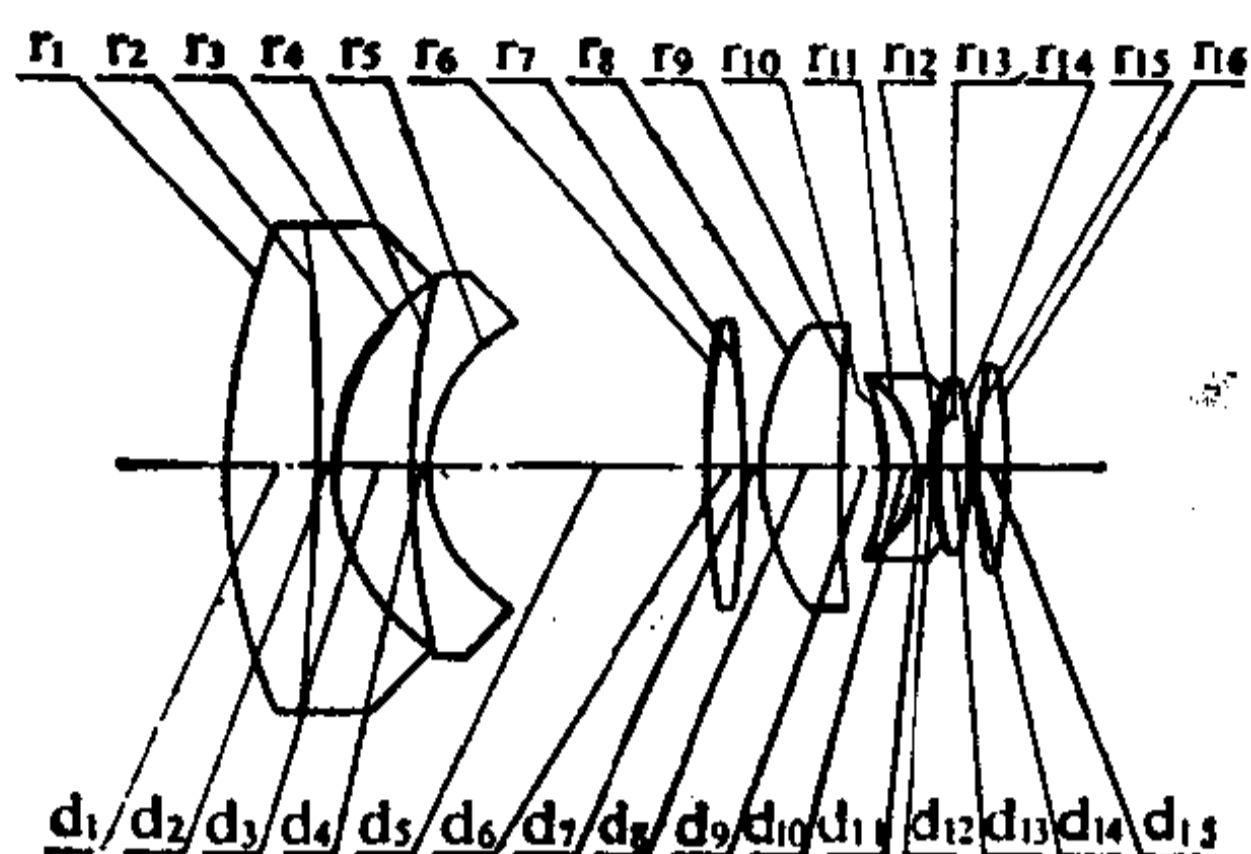
# 反 远 距 型 物 镜

E. F. L = 1

B. F. L = 1.494

FNo. = 1.75

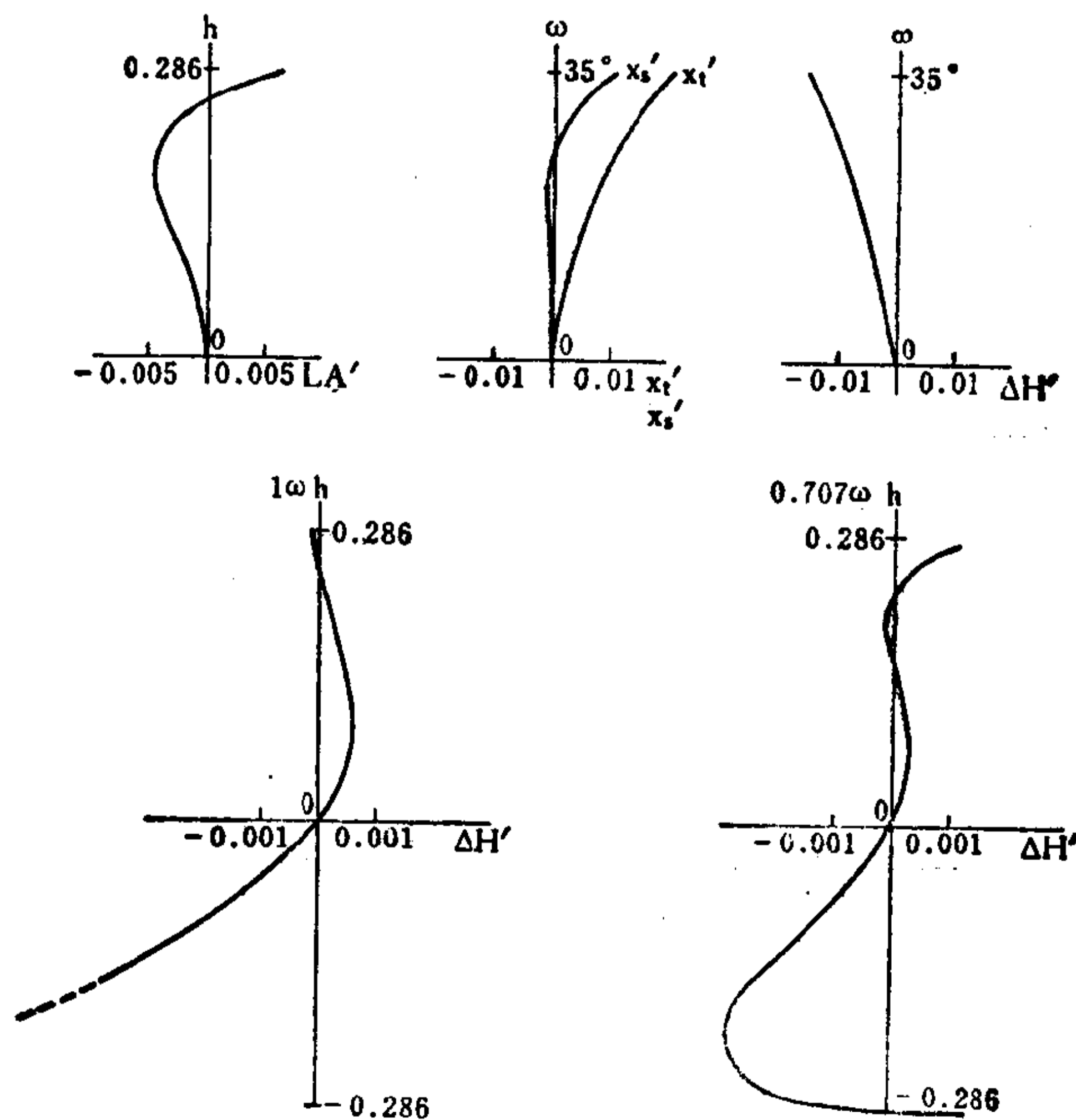
F. A. = ± 35°



序号	r	d	n <sub>d</sub>	v	序号	r	d	n <sub>d</sub>	v
1	3.962	0.605	1.74400	44.71	9	7.333	0.294		
2	-13.870	0.099	1.50759	61.16	10	-1.310	0.195	1.72000	50.31
3	1.400	0.488			11	-0.675	0.106	1.64793	33.80
4	4.460	0.099	1.65100	58.60	12	1.421	0.047*		
5	1.282	1.790			13	2.690	0.216	1.69100	54.80
6	4.935	0.251	1.60545	38.03	14	-1.635	0.040		
7	-4.935	0.096			15	3.298	0.176	1.69100	54.80
8	1.527	0.493	1.65100	58.60	16	-3.298			

0.047\* = 0.023 + 0.024

	ΣS <sub>1</sub>	ΣS <sub>2</sub>	ΣS <sub>3</sub>	ΣS <sub>4</sub>	ΣS <sub>5</sub>	HI	QP(1ω)
	-0.00319	0.00115	0.00130	-0.00277	-0.01431	0.7	-2.2%
h 或 ω%	LA'	ΔH'	x <sub>t</sub> '	x <sub>s</sub> '	x <sub>t</sub> ' - x <sub>s</sub> '	K <sub>r1</sub> '	K <sub>T0.7</sub> '
100	0.00645	-0.0157	0.0197	0.0112	0.0085	-0.0032	-0.0022
70	-0.00450	-0.0089	0.0110	-0.0009	0.0119	0.0013	-0.0015



编号: 03-02-059

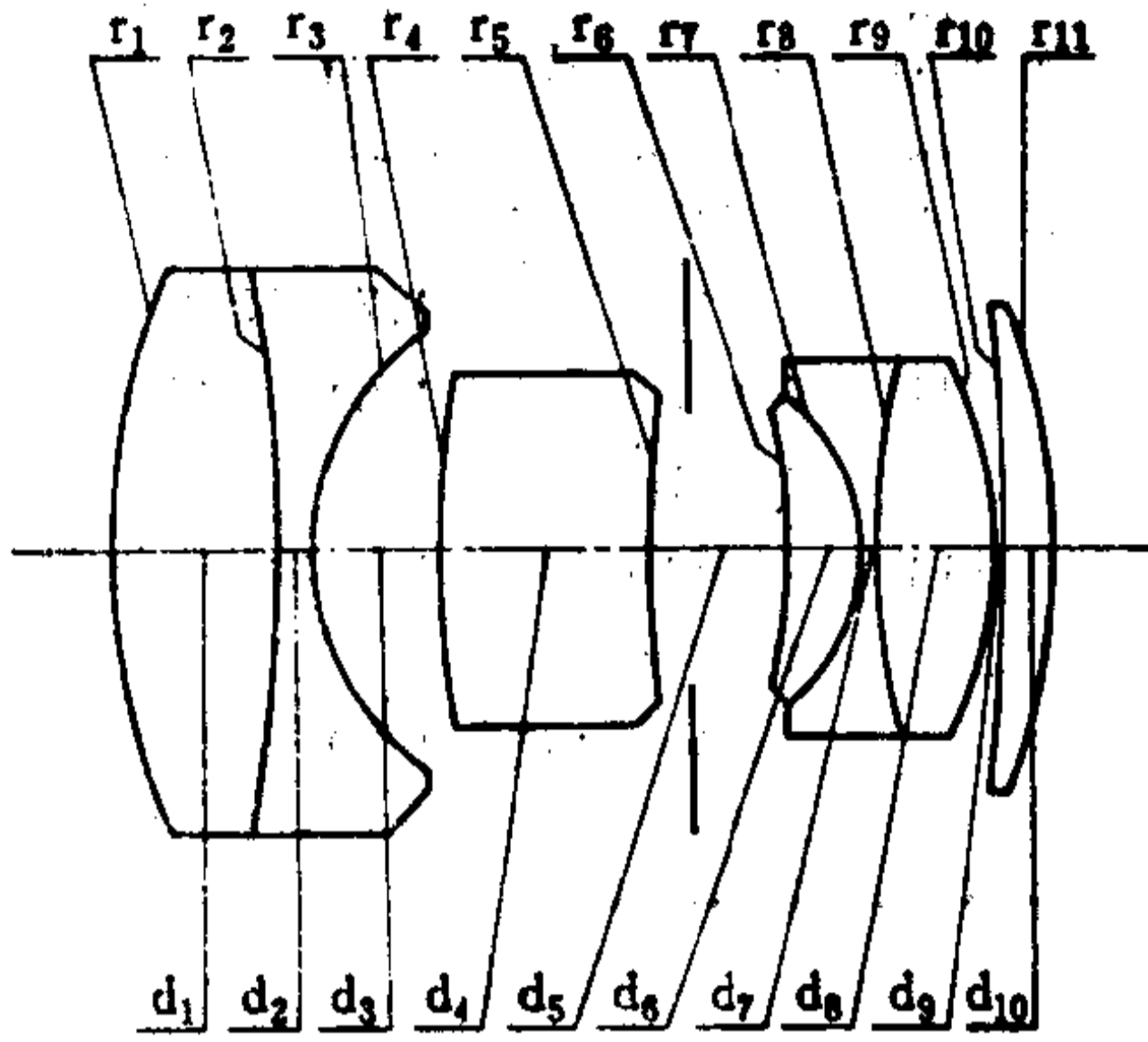
# 广角摄影物镜

E.F.L=0.983

B.F.L=1.153

FNo.=4

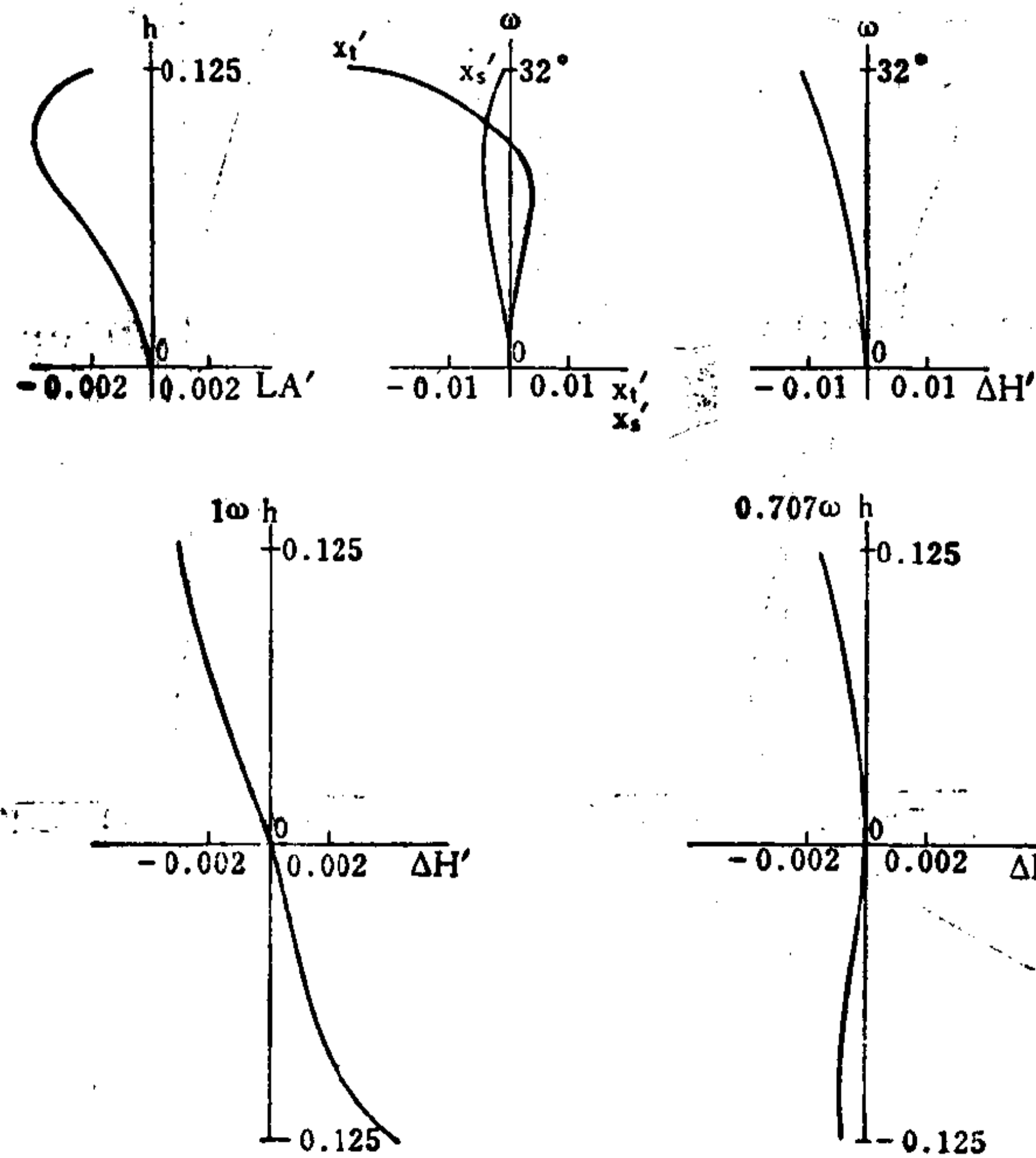
F.A.=±32°



序号	r	d	n <sub>d</sub>	v	序号	r	d	n <sub>d</sub>	v
1	0.70887	0.185890	1.62041	60.3	7	-0.21315	0.022740	1.72339	38.0
2	-1.83258	0.037240	1.50137	56.5	8	0.95212	0.123930	1.66672	48.4
3	0.28631	0.133342			9	-0.42835	0.002840		
4	0.95897	0.230230	1.75520	27.5	10	-3.01095	0.061960	1.69067	54.9
5	2.37442	0.150650*			11	-0.68380			
6	-0.53539	0.074470	1.65160	58.4					

0.150650\* = 0.050650 + 0.100000

	ΣS <sub>1</sub>	ΣS <sub>2</sub>	ΣS <sub>3</sub>	ΣS <sub>4</sub>	ΣS <sub>5</sub>	HI	QP(1ω)
	-0.00037	-0.00027	0.00045	-0.00082	-0.00399	0.61	-1.7%
h 或 ω%	LA'	ΔH'	x <sub>t</sub> '	x <sub>s</sub> '	x <sub>t</sub> ' - x <sub>s</sub> '	K' <sub>t1</sub>	K' <sub>t0.7</sub>
100	-0.00189	-0.0106	-0.0270	-0.0007	-0.0263	0.00064	-0.00009
70	-0.00378	-0.0057	0.0035	-0.0046	0.0081	-0.00109	-0.00093





编号: 03-02-060

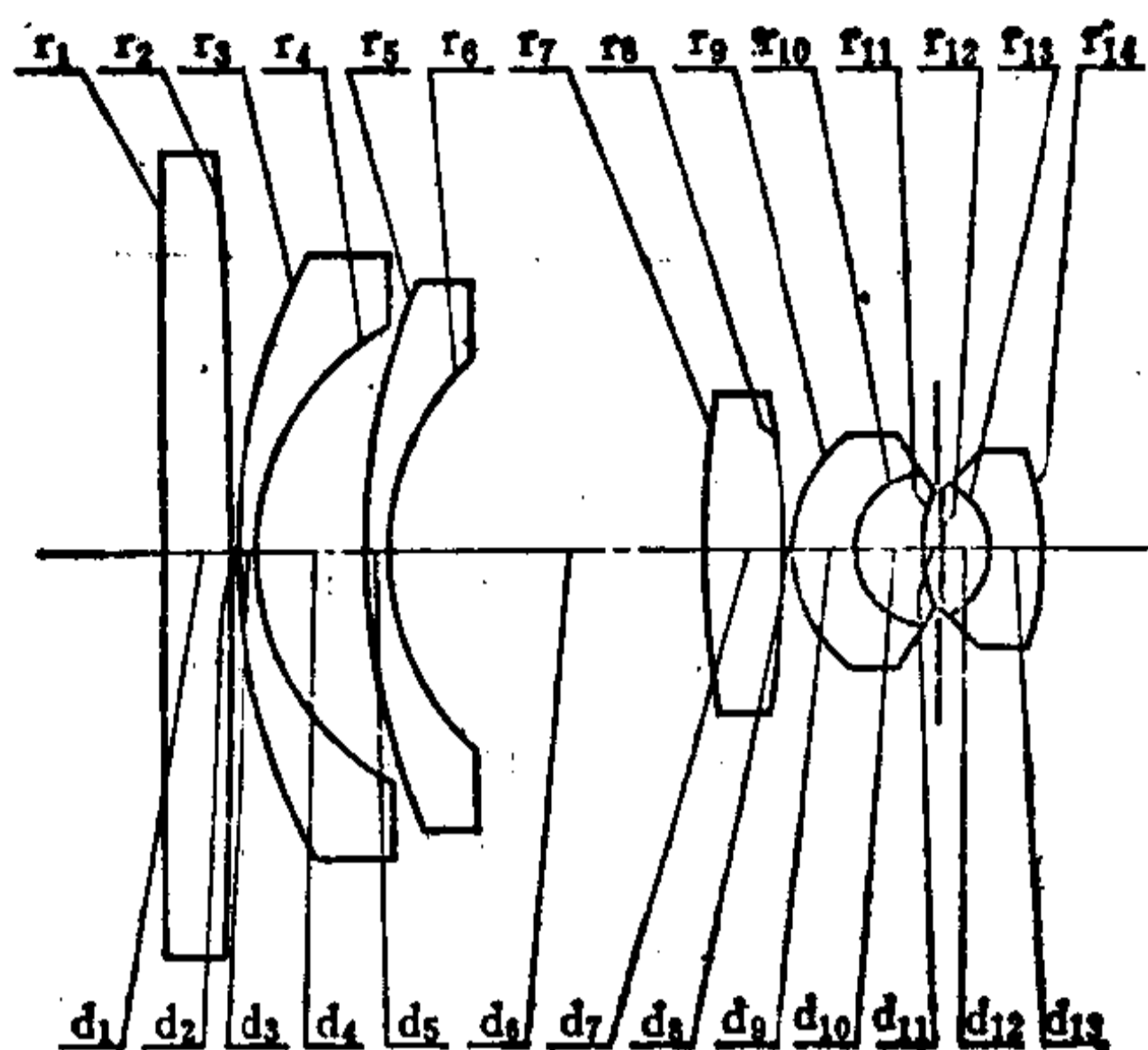
## 两组元超广角摄影物镜

E. F. L = 27.88

B. F. L = 32.09

FNo. = 3.5

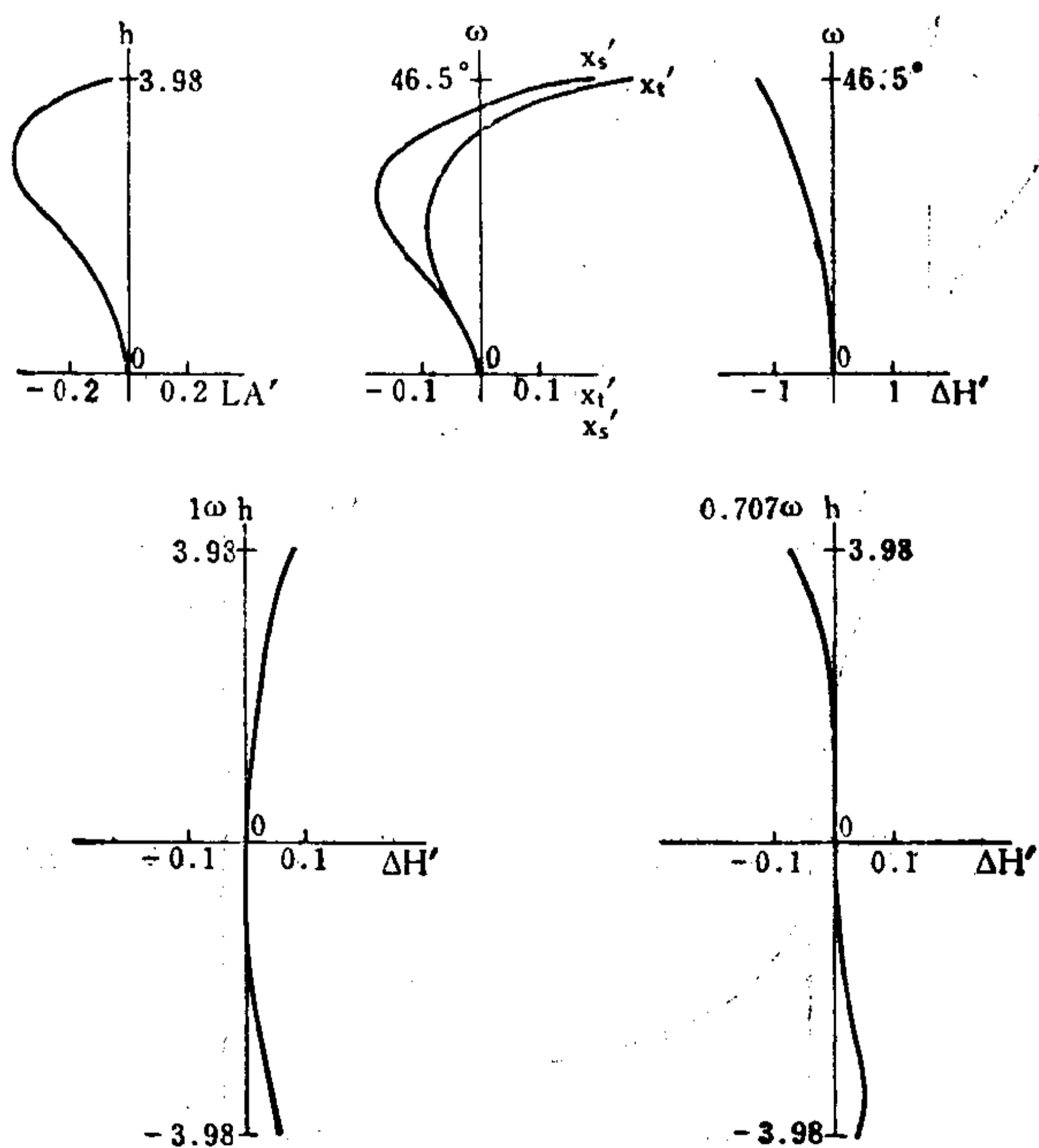
F. A. = ± 46.5°



序号	r	d	n <sub>D</sub>	v <sub>D</sub>	序号	r	d	n <sub>D</sub>	v <sub>D</sub>
1	∞	8.000	1.6126	58.3	8	-89.740	0.200		
2	-743.000	0.680			9	17.258	8.304	1.728	28.3
3	74.300	2.700	1.6126	58.3	10	8.954	8.100	1.6123	44.1
4	31.920	13.500			11	18.197	2.120*		
5	94.620	2.700	1.6126	58.3	12	115.880	5.916	1.6123	44.1
6	32.430	38.650			13	-8.790	6.600	1.7280	28.3
7	135.210	9.750	1.6126	58.3	14	-37.150			

2.120\* = 1.060 + 1.060

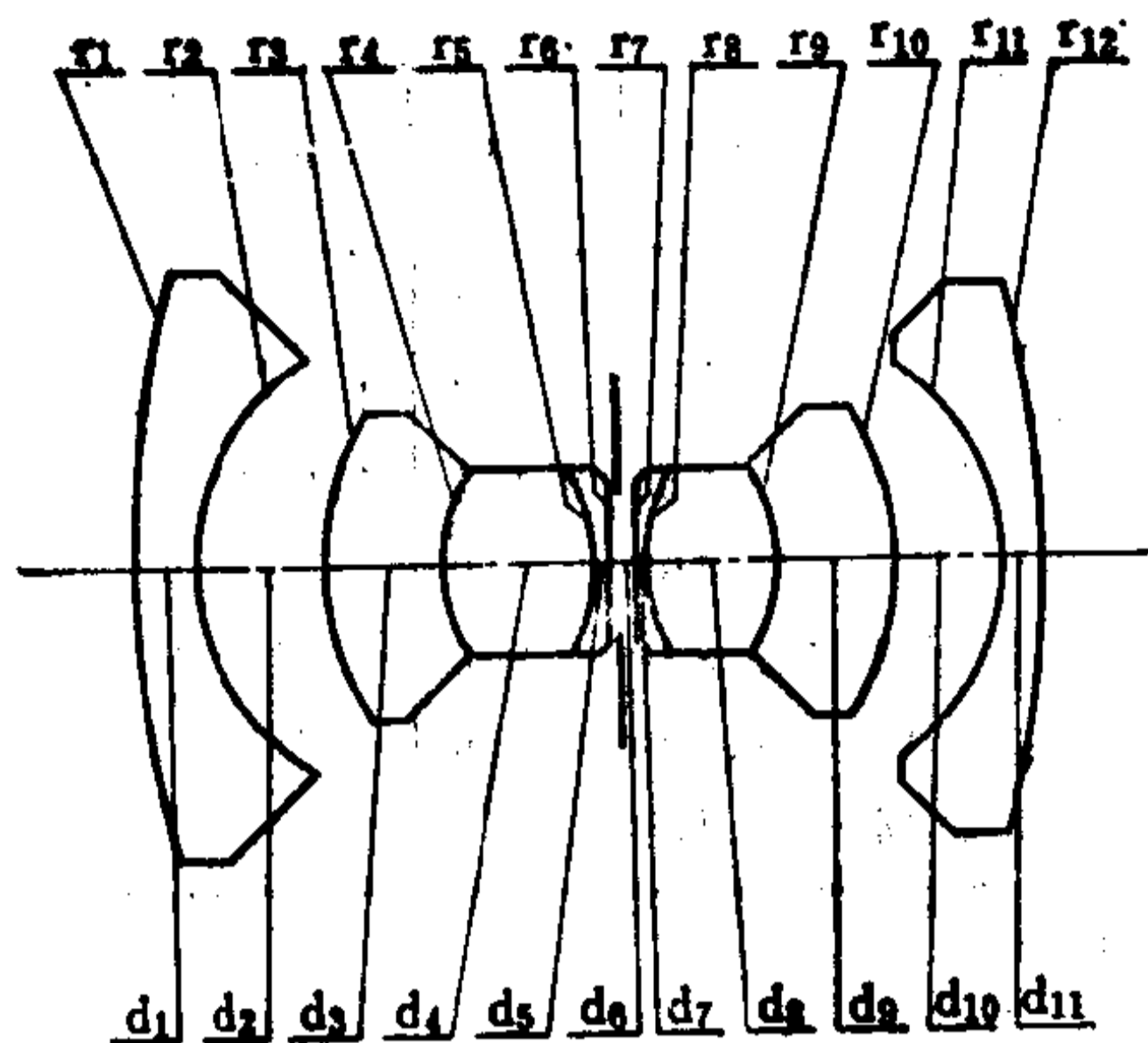
	ΣS <sub>1</sub>	ΣS <sub>2</sub>	ΣS <sub>3</sub>	ΣS <sub>4</sub>	ΣS <sub>5</sub>	HI	QP(1ω)
	-0.0482	0.0267	-0.0176	-0.0155	-0.3081	29.3	-4.3%
h 或 ω%	LA'	ΔH'	x <sub>t</sub> '	x <sub>s</sub> '	x <sub>t</sub> ' - x <sub>s</sub> '	K <sub>T1</sub> '	K <sub>T0.7</sub> '
100	-0.0623	-1.2643	0.2497	0.2269	0.0228	0.0616	0.0335
70	-0.3940	-0.5913	-0.0718	-0.1669	0.0951	-0.0137	0.0089



编号: 03-02-061

### 小型的超广角照相机物镜

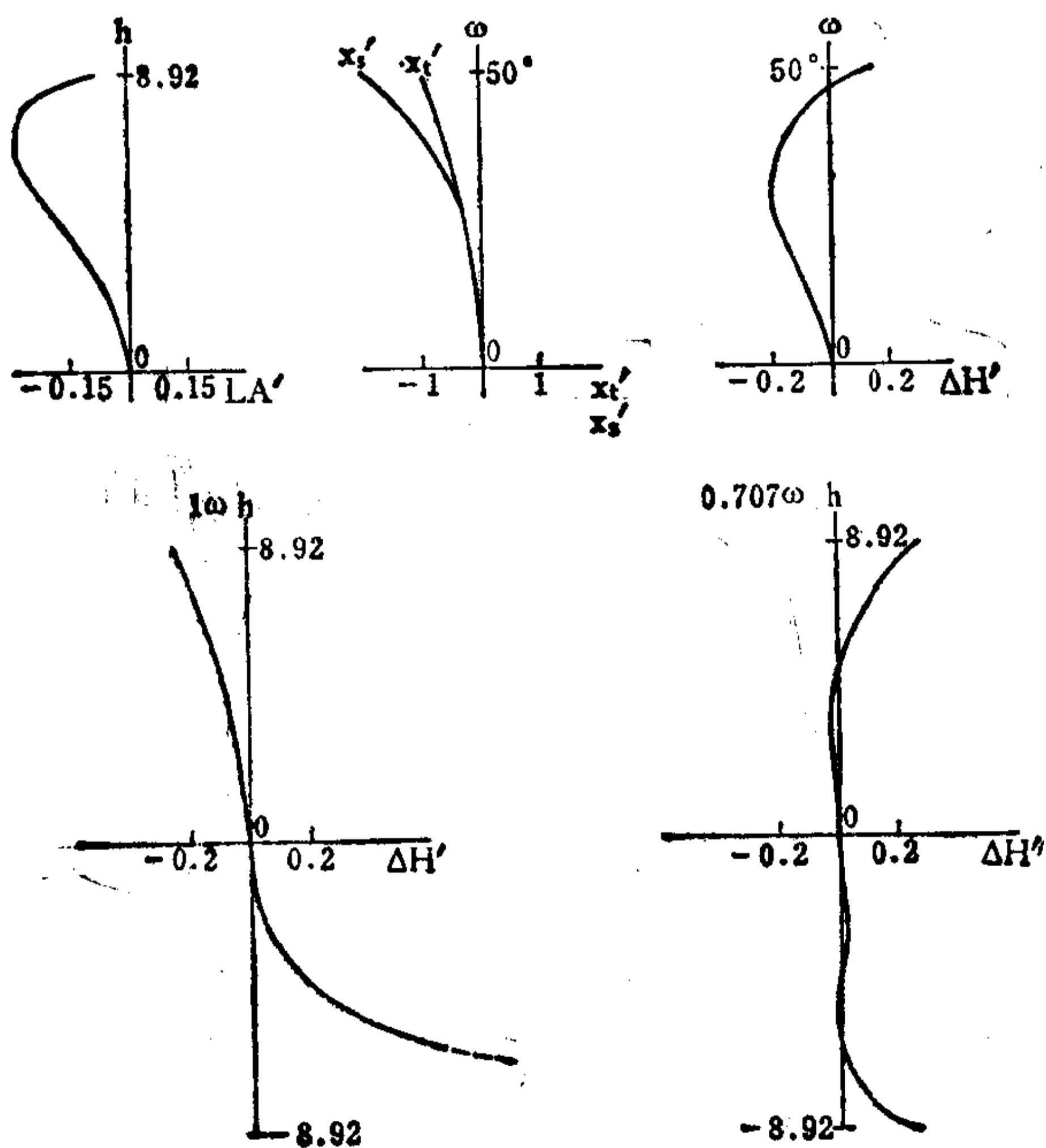
E.F.L = 100.11    B.F.L = 67.83    FNo. = 5.6    F.A. = ±50°



序号	r	d	$n_D$	$v_d$	序号	r	d	$n_D$	$v_d$
1	122.75	7.04	1.46450	65.8	7	-1052.61	1.48	1.56883	56.0
2	25.49	14.65			8	23.84	14.27	1.61375	56.3
3	34.89	13.00	1.71700	47.9	9	-16.29	12.89	1.70181	41.1
4	20.90	16.48	1.61405	55.1	10	-34.74	12.04		
5	-21.48	1.48	1.56138	45.3	11	-25.98	4.27	1.52015	63.6
6	360.27	2.96*			12	-128.32			

$2.96^* = 1.48 + 1.48$

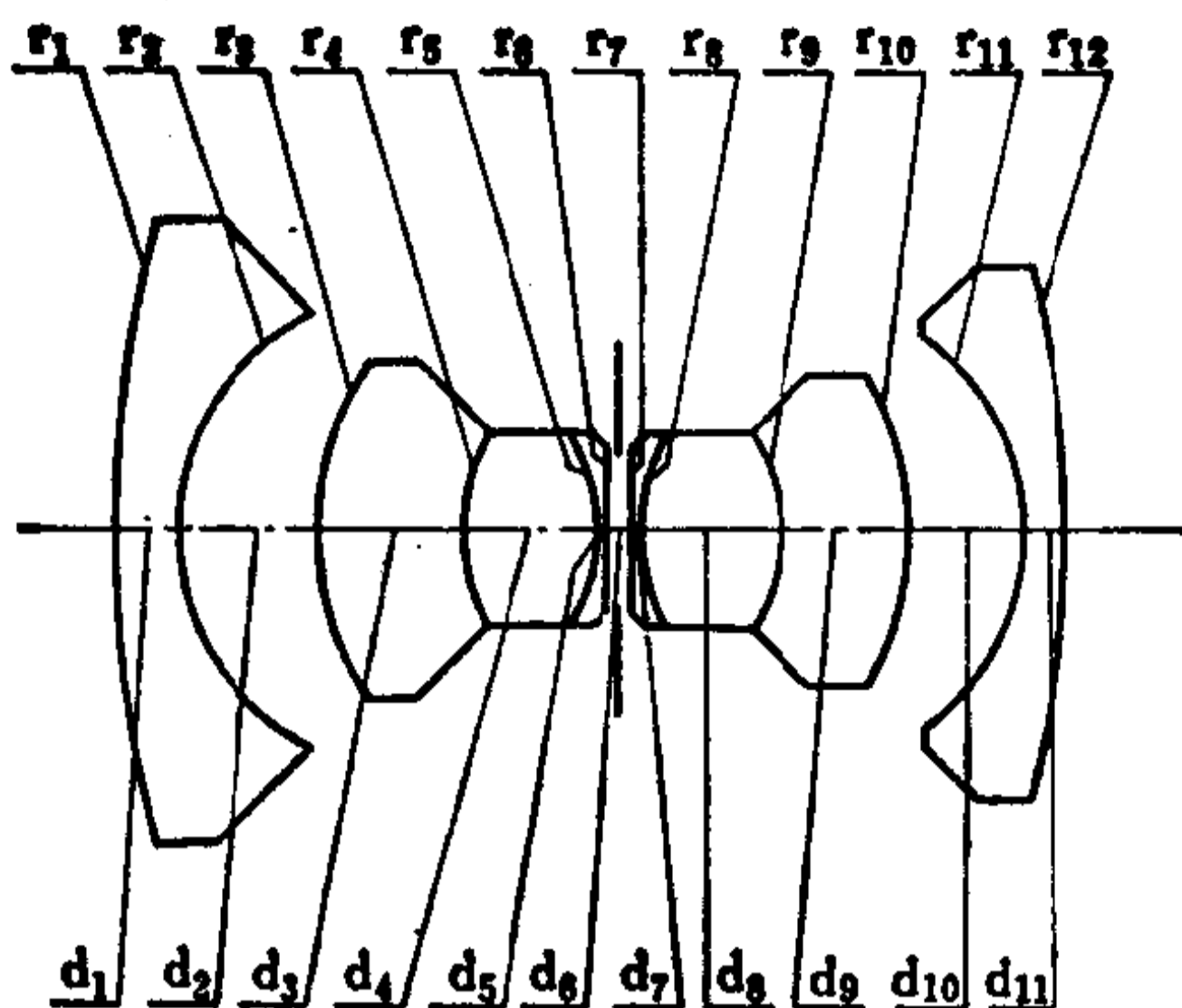
	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP (1 $\omega$ )
	-0.0119	-0.0063	-0.0017	-0.0049	-0.1015	119.3	0.1%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K_{r1}$	$K'_{r0.7}$
100	-0.094	0.132	-1.029	-2.019	0.990	1.749	0.235
70	-0.279	-0.208	-0.498	-0.754	0.256	0.289	0.016



编号: 03-02-062

### 小型的超广角照相机物镜

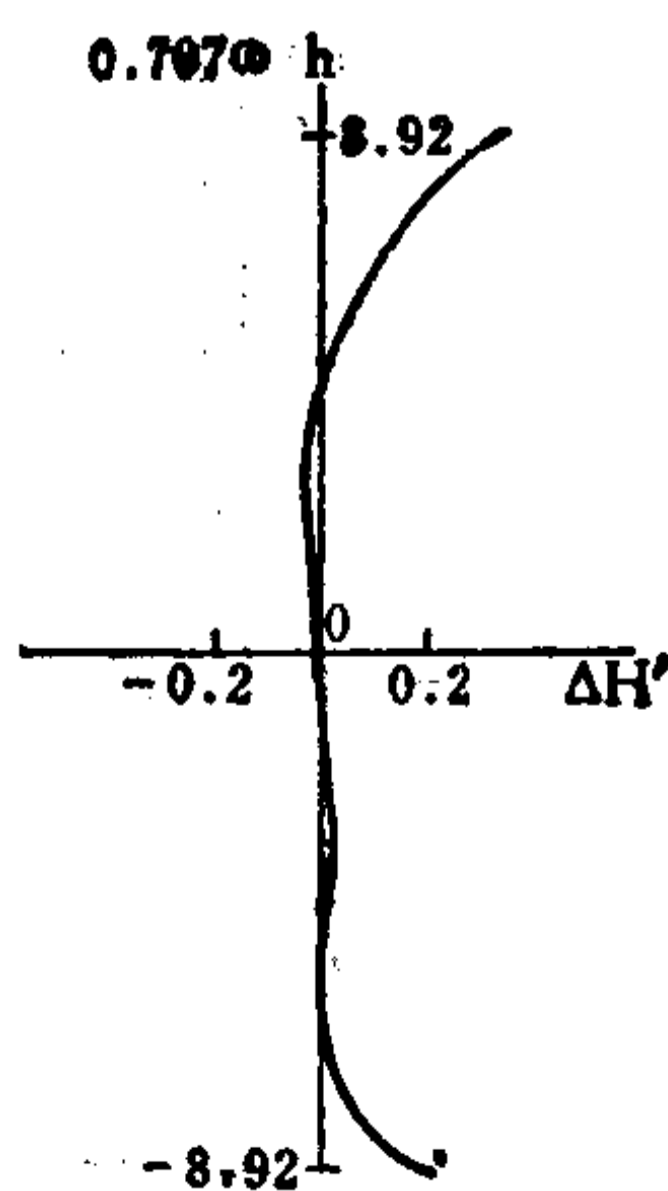
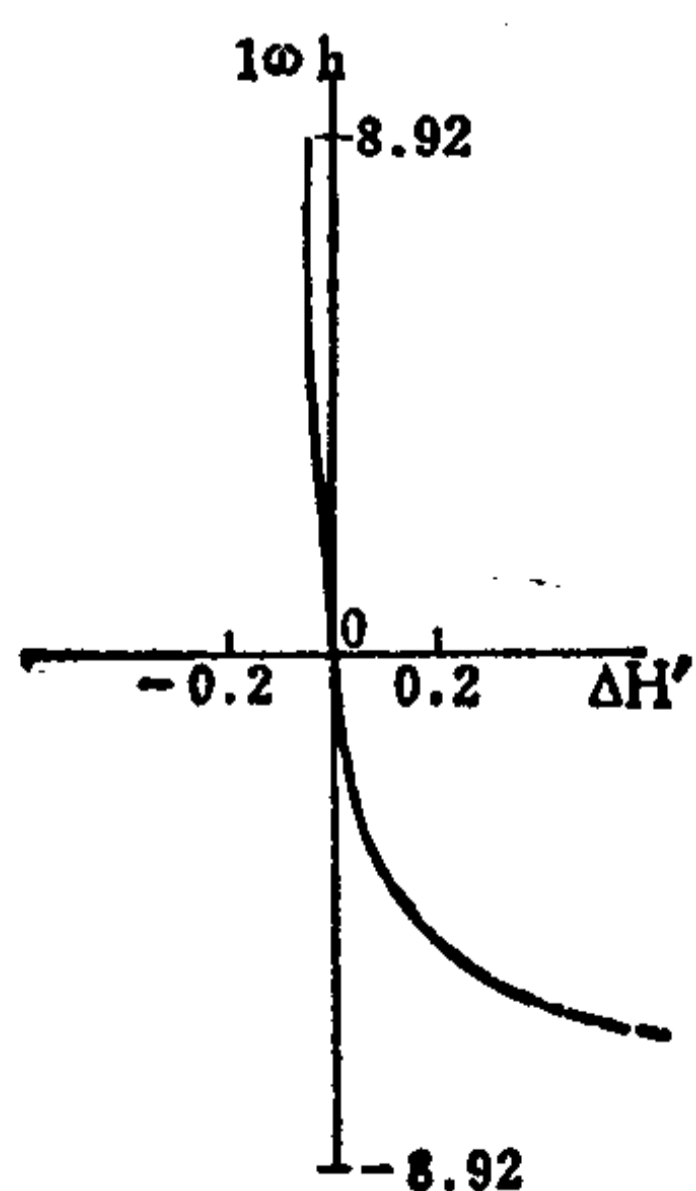
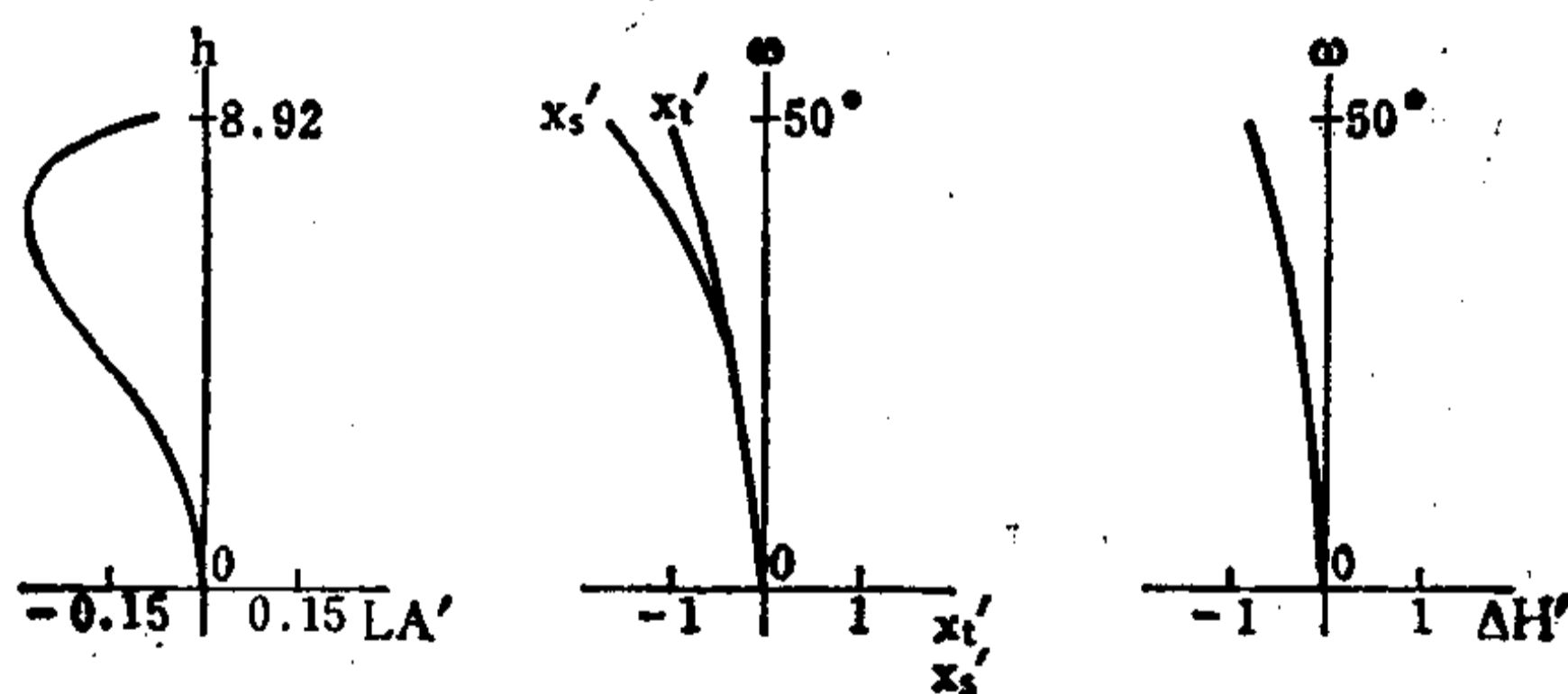
E. F. L = 100.17    B. F. L = 68.14    FNo. = 5.6    F. A. = ±50°



序号	r	d	n <sub>D</sub>	v <sub>d</sub>	序号	r	d	n <sub>D</sub>	v <sub>d</sub>
1	127.95	7.17	1.46450	65.8	7	-1056.86	1.10	1.56470	55.8
2	25.54	14.87			8	23.95	14.45	1.61375	56.3
3	35.13	15.42	1.71700	47.9	9	-16.46	13.40	1.70181	41.1
4	20.56	13.83	1.61405	55.1	10	-34.95	12.25		
5	-21.67	1.10	1.56138	45.3	11	-25.94	4.26	1.52015	63.6
6	361.41	2.95*			12	-124.29			

2.95\* = 1.48 + 1.47

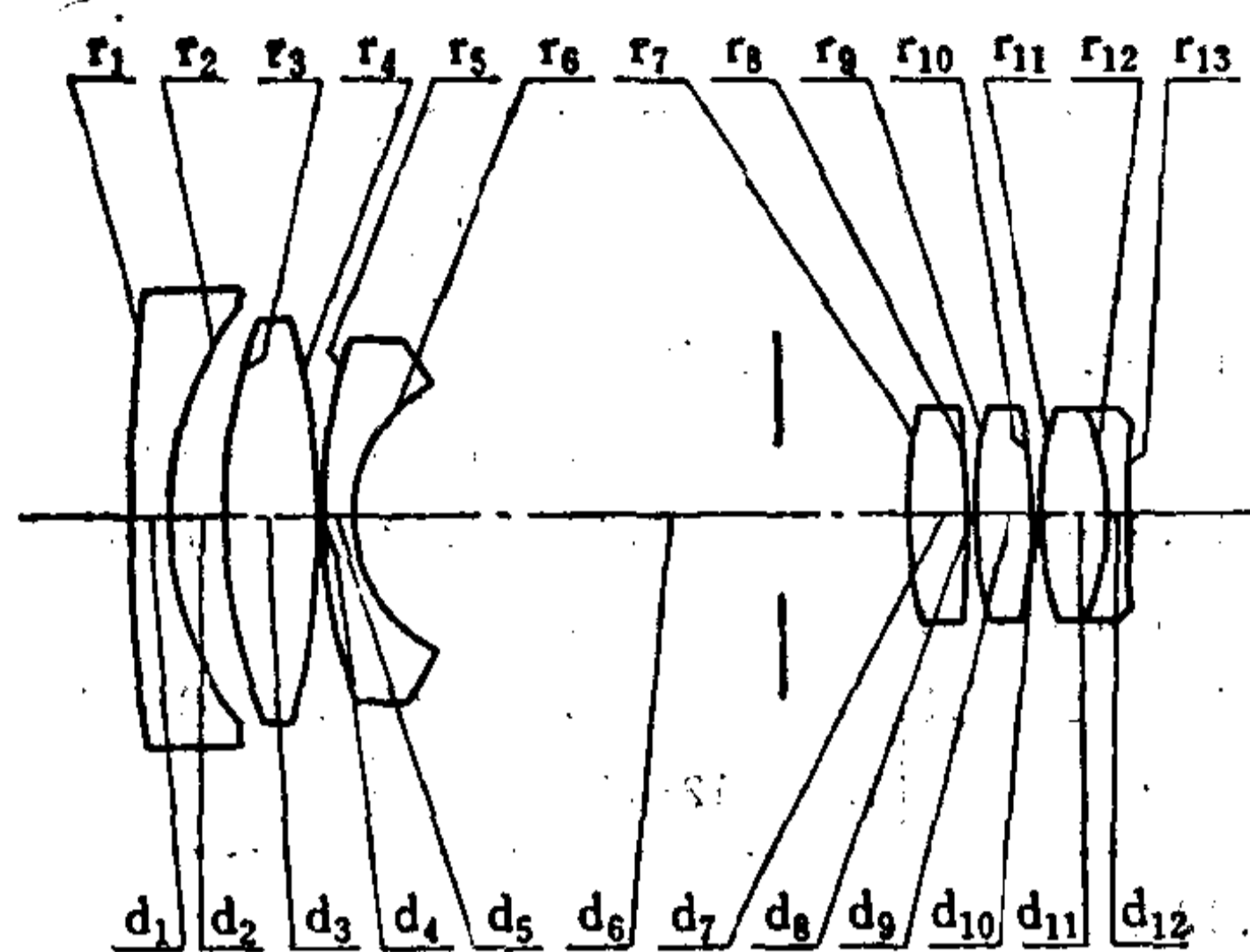
	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP (1 $\omega$ )
	-0.0119	-0.0043	-0.0030	0.0003	-0.1405	119.4	-0.68%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{F1}$	$K'_{F0.7}$
100	-0.0917	-0.8174	-1.0324	-1.7721	0.7397	1.3542	0.2222
70	-0.2773	-0.3949	-0.5751	-0.6287	0.0535	0.2874	0.0381



编号: 03-02-063

# 反远距型物镜

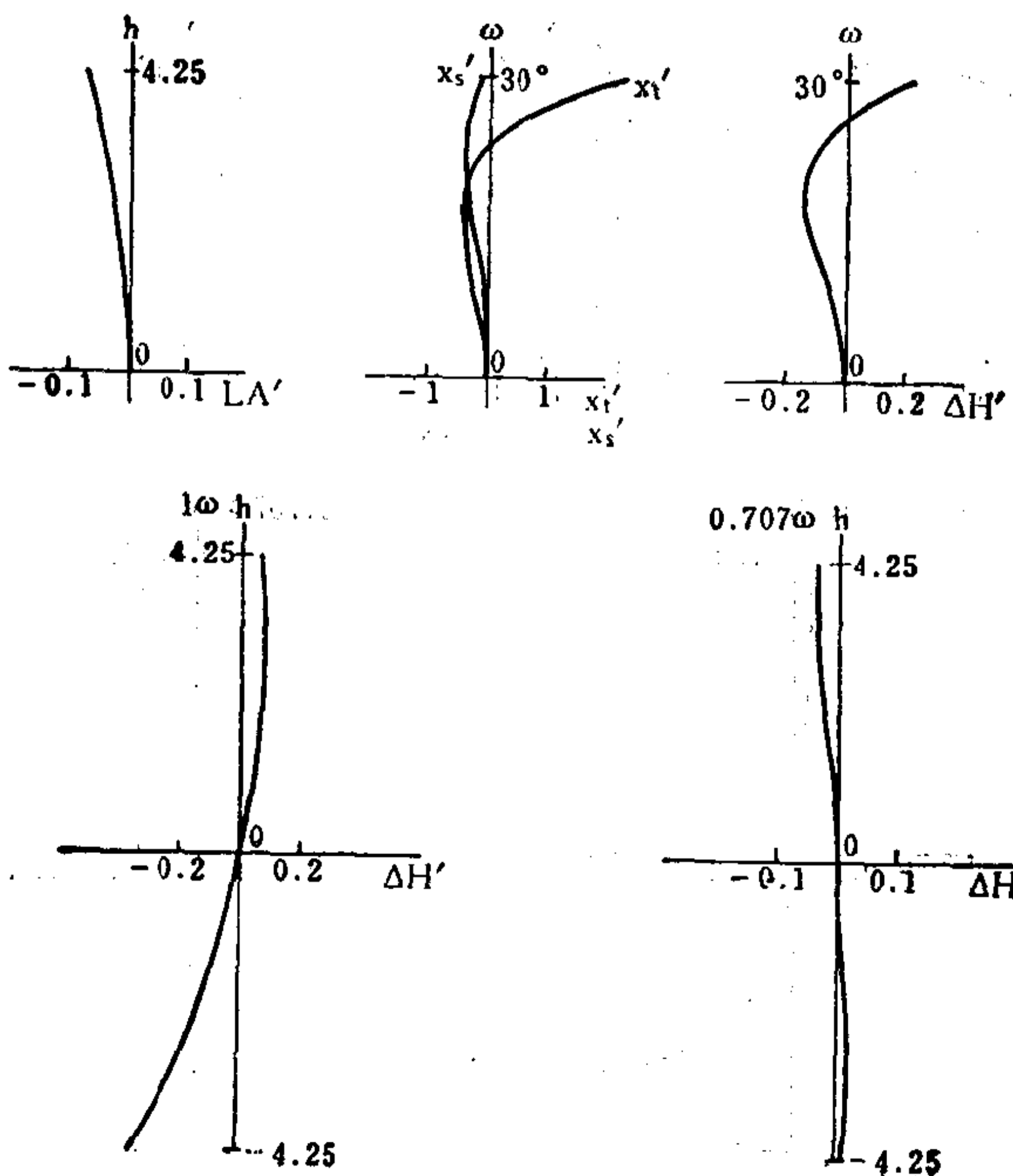
E.F.L=84.03    B.F.L=54.3    FNo.=4\*\*    F.A.=±30°\*\*



序号	r	d	nD	vD	序号	r	d	nD	vD
1	506.3	8.31	1.572	57.4	8	-205.7	1.63		
2	68.3	13.61			9	105.3	13.78	1.517	64.5
3	134.7	20.17	1.745	46.4	10	-105.3	1.66		
4	-172.0	1.36			11	81.8	13.90	1.511	63.5
5	142.3	6.24	1.572	57.4	12	-46.5	4.23	1.751	27.8
6	33.9	122.00*			13	382.5			
7	105.8	13.90	1.517	64.5					

\* 122.00\* = 100.00 + 22.00

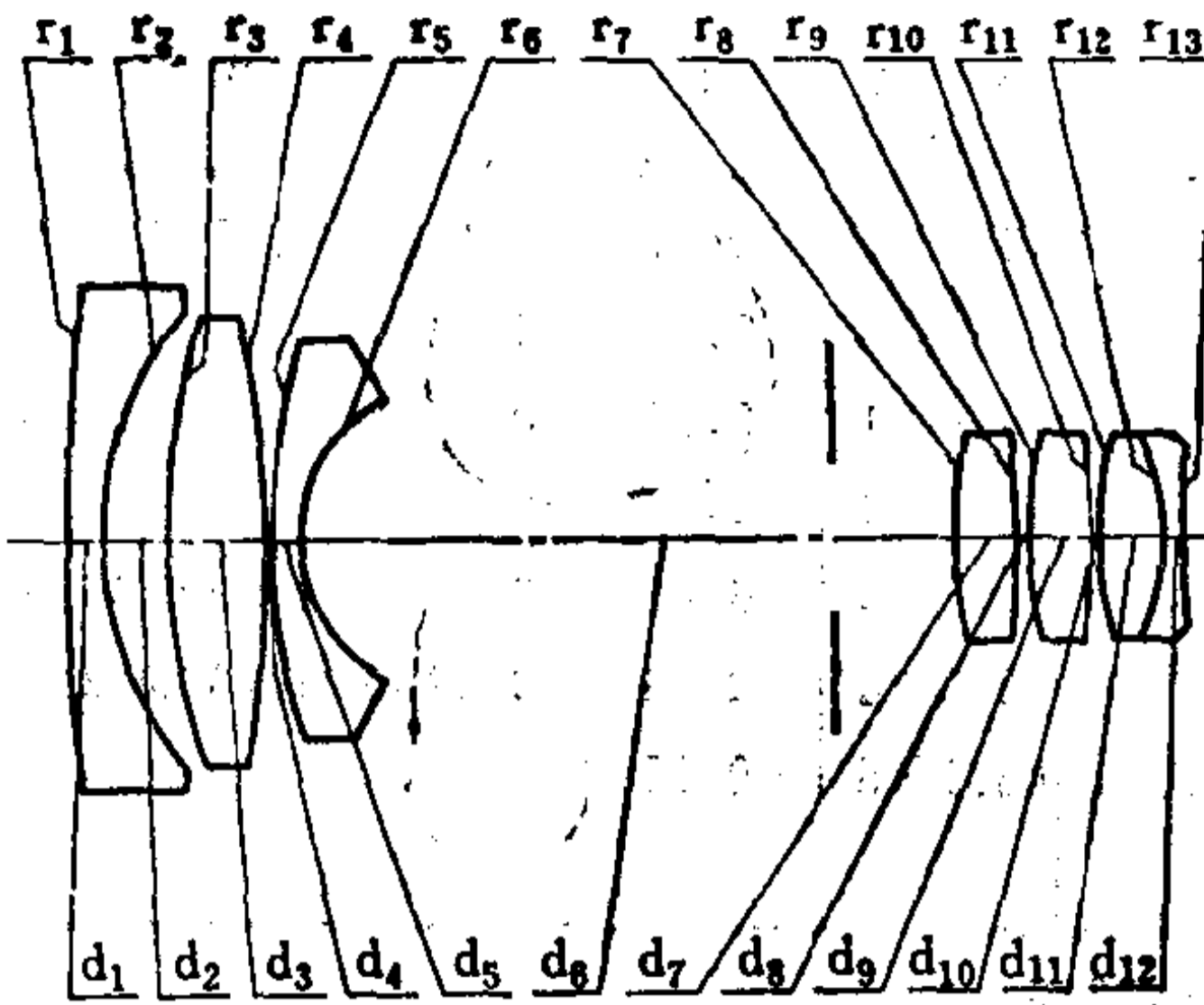
	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP (1 $\omega$ )
	-0.0029	0.0062	-0.0113	-0.0238	-0.0886	19.6	1.1%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{T1}$	$K'_{T0.7}$
100	-0.0848	0.2162	2.3262	-0.0818	2.4080	-0.1450	-0.0712
70	-0.0448	-0.1566	-0.3732	-0.3439	-0.0293	-0.0096	-0.0059



编号: 03-02-064

# 反远距型物镜

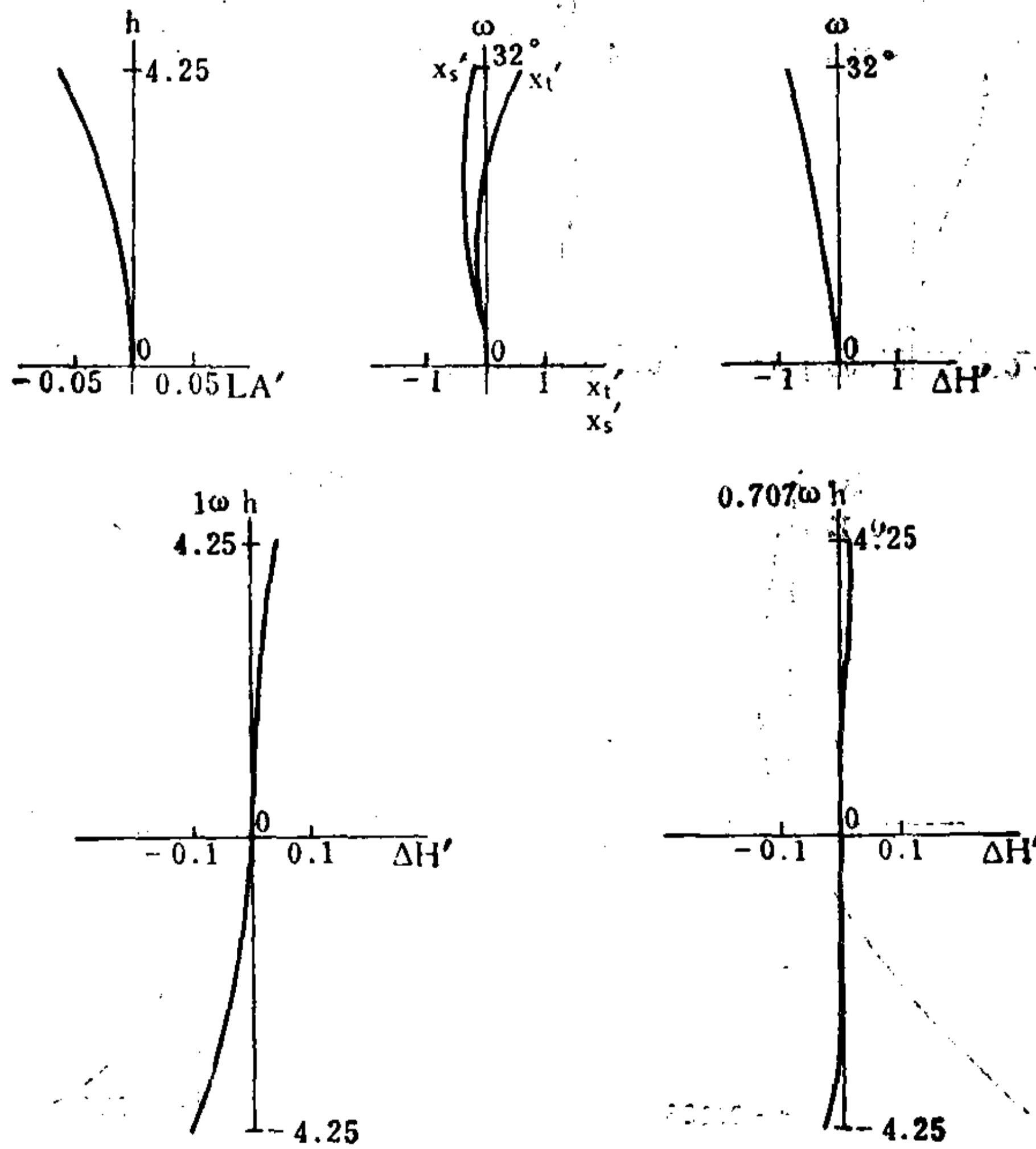
E.F.L=34.45    B.F.L=55.0    FNo. =4\*\*    F.A. =±32°



序号	r	d	nD	vD	序号	r	d	nD	vD
1	509.5	8.33	1.569	57.4	8	-198.5	1.67		
2	77.9	13.71			9	97.2	13.86	1.515	64.5
3	134.4	20.95	1.740	46.4	10	-117.0	1.67		
4	252.1	1.43			11	82.4	14.00	1.509	63.5
5	138.1	5.95	1.569	57.4	12	-48.2	4.29	1.743	27.8
6	34.4	125.90*			13	307.0			
7	108.0	13.29	1.515	64.5					

125.90\* = 100.00 + 25.90

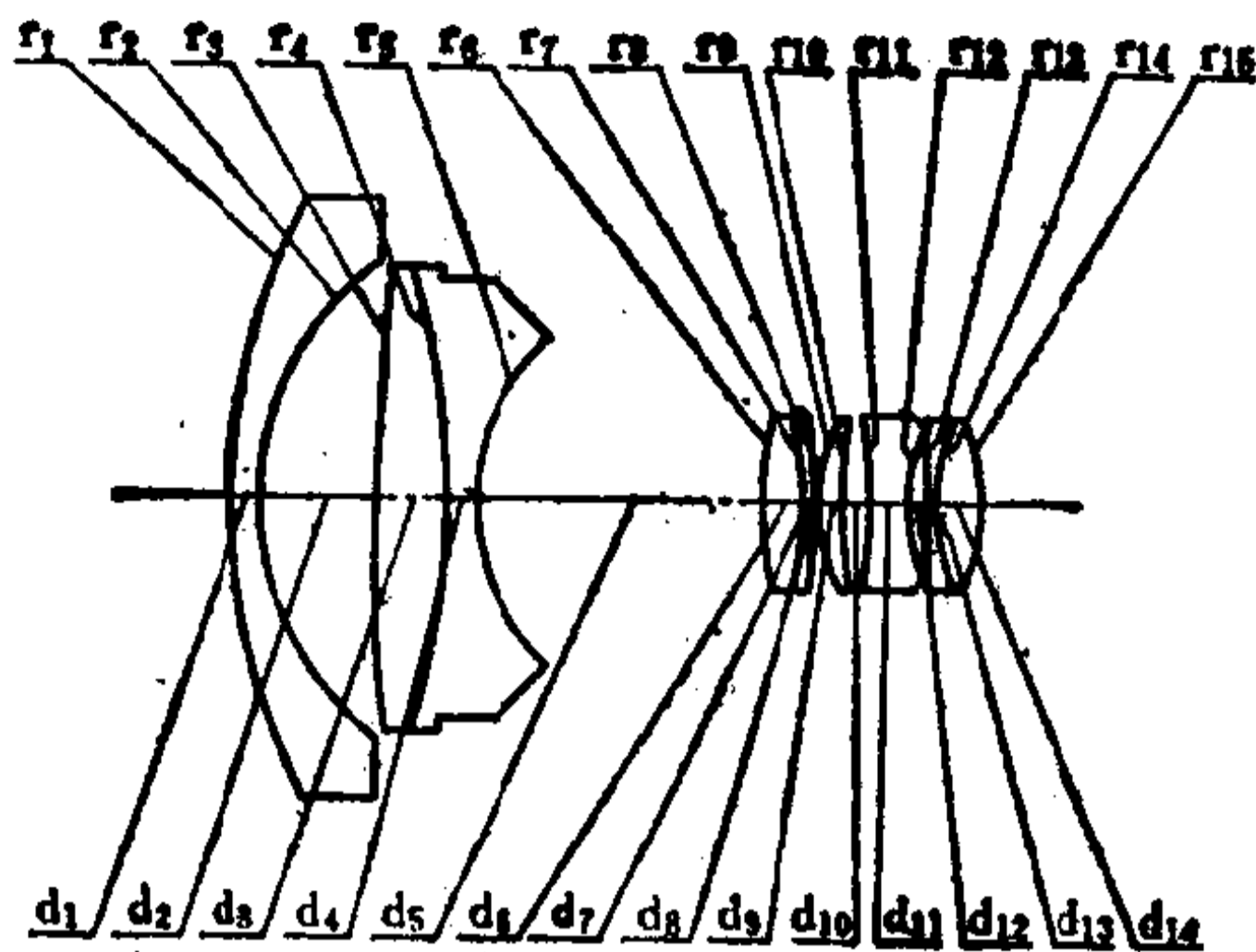
	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP (1 $\omega$ )
	-0.0024	0.0029	0.0039	-0.0259	-0.3028	21.5	-4.1%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{11}$	$K'_{10.7}$
100	-0.0673	-0.8887	0.6434	-0.1306	0.7740	-0.0331	-0.0168
70	-0.0365	-0.4741	-0.0304	-0.2703	0.2399	-0.0037	-0.0034



编号: 03-02-065

# 广 角 物 镜

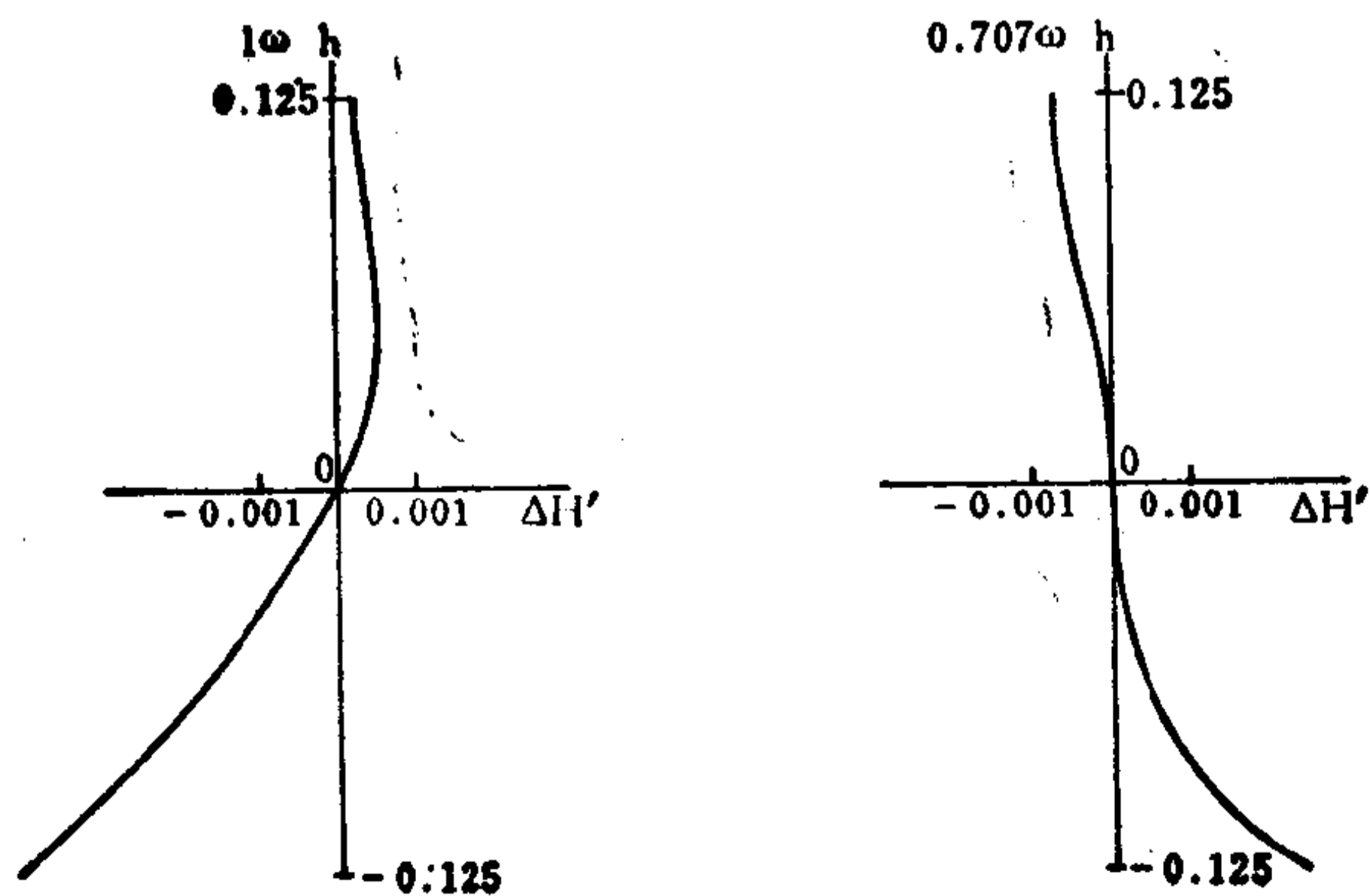
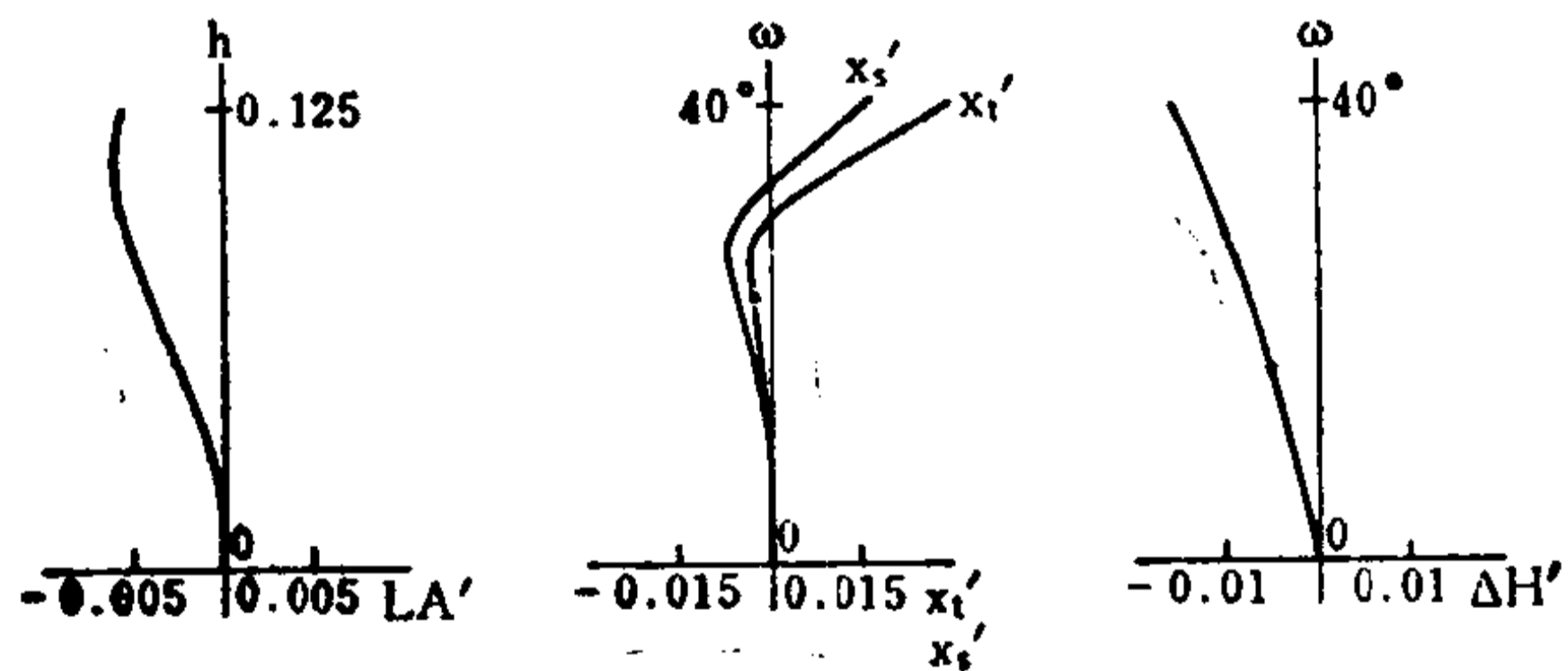
E.F.L = 1    B.F.L = 1.438    FNo. = 4\*\*    F.A. = ±40°



序号	r	d	n	v	序号	r	d	n	v
1	2.6099	0.1164	1.5014	56.5	9	0.6728	0.1048	1.5673	42.8
2	1.1903	0.4384			10	2.1657	0.0854		
3	8.9468	0.2716	1.8052	25.5	11	-3.1116	0.1552	1.8052	25.5
4	-3.0154	0.1164	1.4463	67.3	12	0.6464	0.0660*		
5	0.8543	1.1251			13	6.6224	0.0310	1.6200	36.3
6	1.3277	0.1552	1.6385	55.5	14	0.7162	0.1785	1.7363	32.1
7	-0.9506	0.0388	1.7408	28.1	15	-0.8590			
8	-3.4224	0.0039							

0.0660\* = 0.0330 + 0.0330

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP (1 $\omega$ )
	-0.00040	0.00022	-0.00012	-0.00069	-0.00556	0.84	-1.9%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_i$	$x'_s$	$x'_i - x'_s$	$K'_{f1}$	$K'_{f0.7}$
100	-0.00543	-0.0165	0.0309	0.0170	0.0139	-0.0019	-0.0011
70	-0.00488	-0.0099	-0.0039	-0.0070	0.0031	0.0008	0.0001

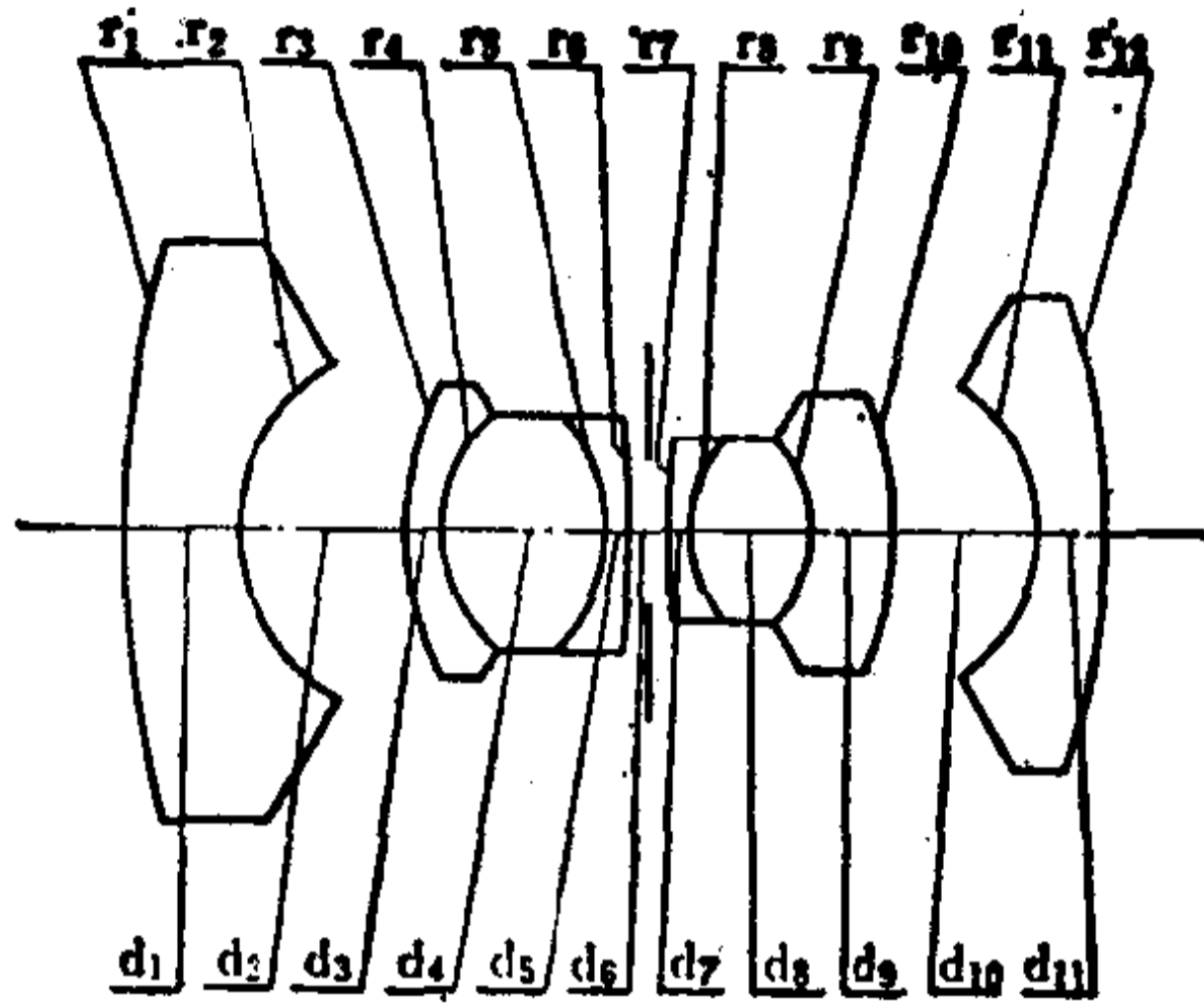




编号: 03-02-066

### 四组元超广角照相机物镜

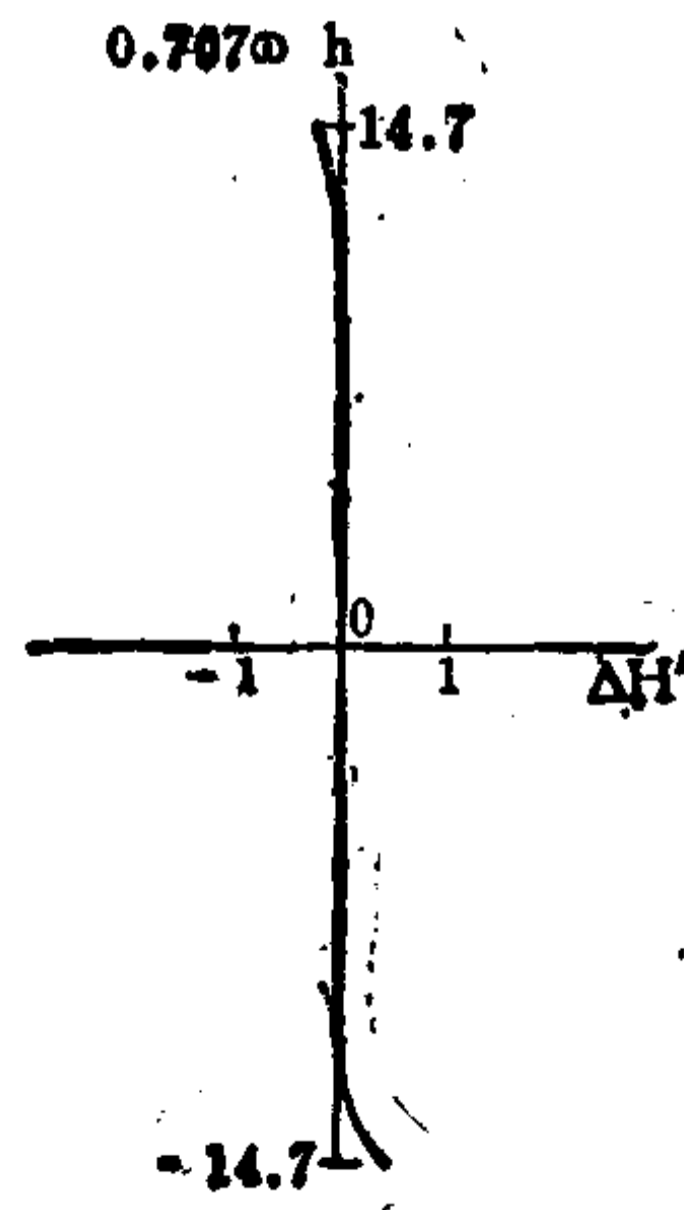
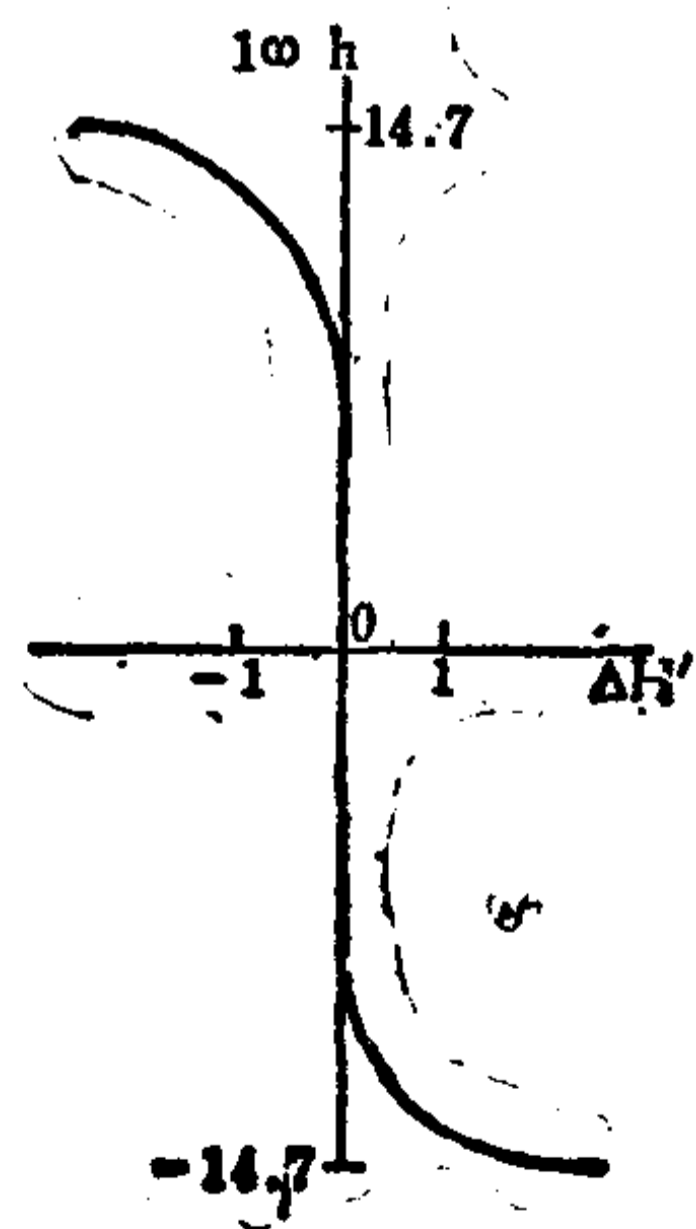
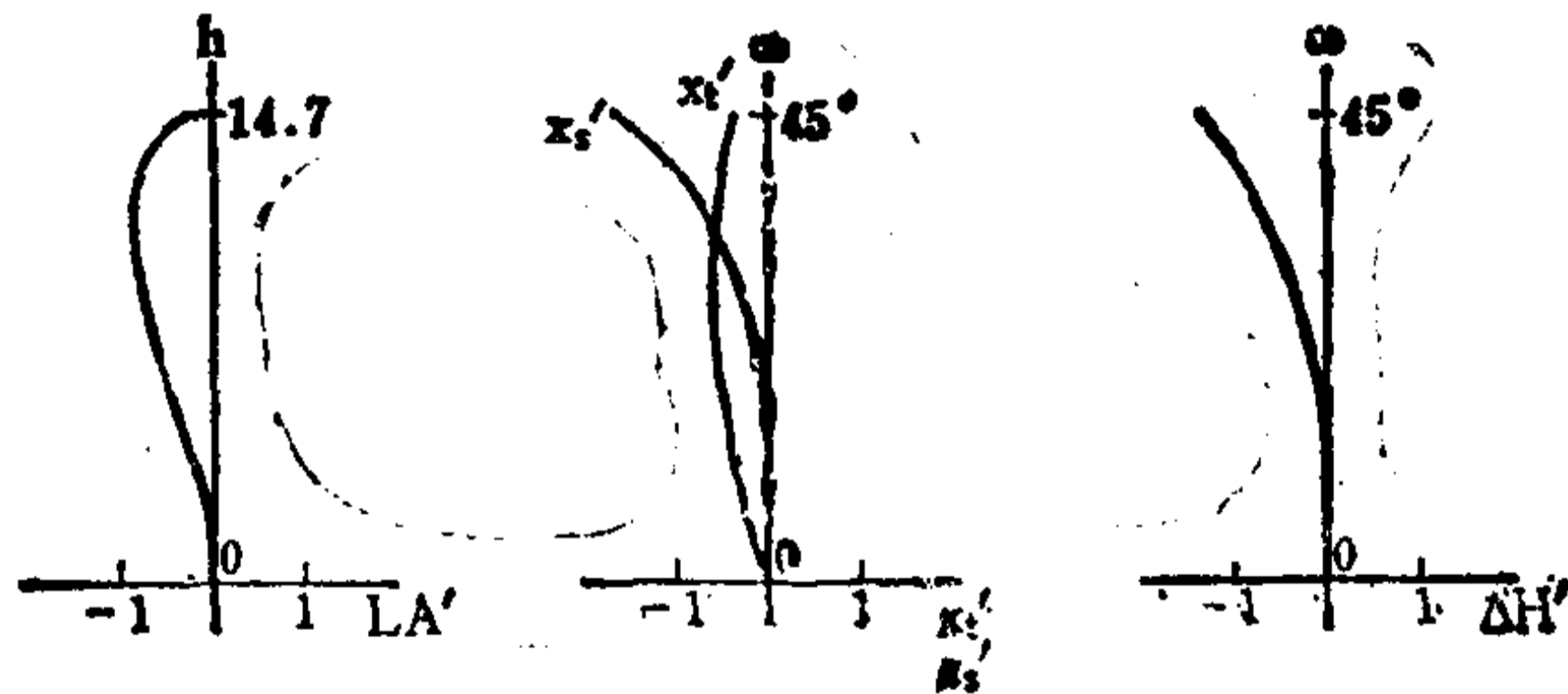
E.F.L=100 B.F.L=39.01 FNo.=3.4 F.A.=±45°



序号	r	d	n <sub>d</sub>	v <sub>d</sub>	序号	r	d	n <sub>d</sub>	v <sub>d</sub>
1	234.94	24.53	1.52249	59.64	7	318.75	4.62	1.56732	42.82
2	42.02	37.10			8	29.20	26.20	1.62299	58.12
3	61.73	7.25	1.72372	38.09	9	-28.48	18.39	1.71700	47.90
4	34.17	36.50	1.60729	49.25	10	-78.50	31.37		
5	-35.23	4.90	1.56013	47.03	11	-37.98	14.65	1.54072	47.22
6	-270.56	8.27*			12	-165.40			

8.27\* = 4.14 + 4.13

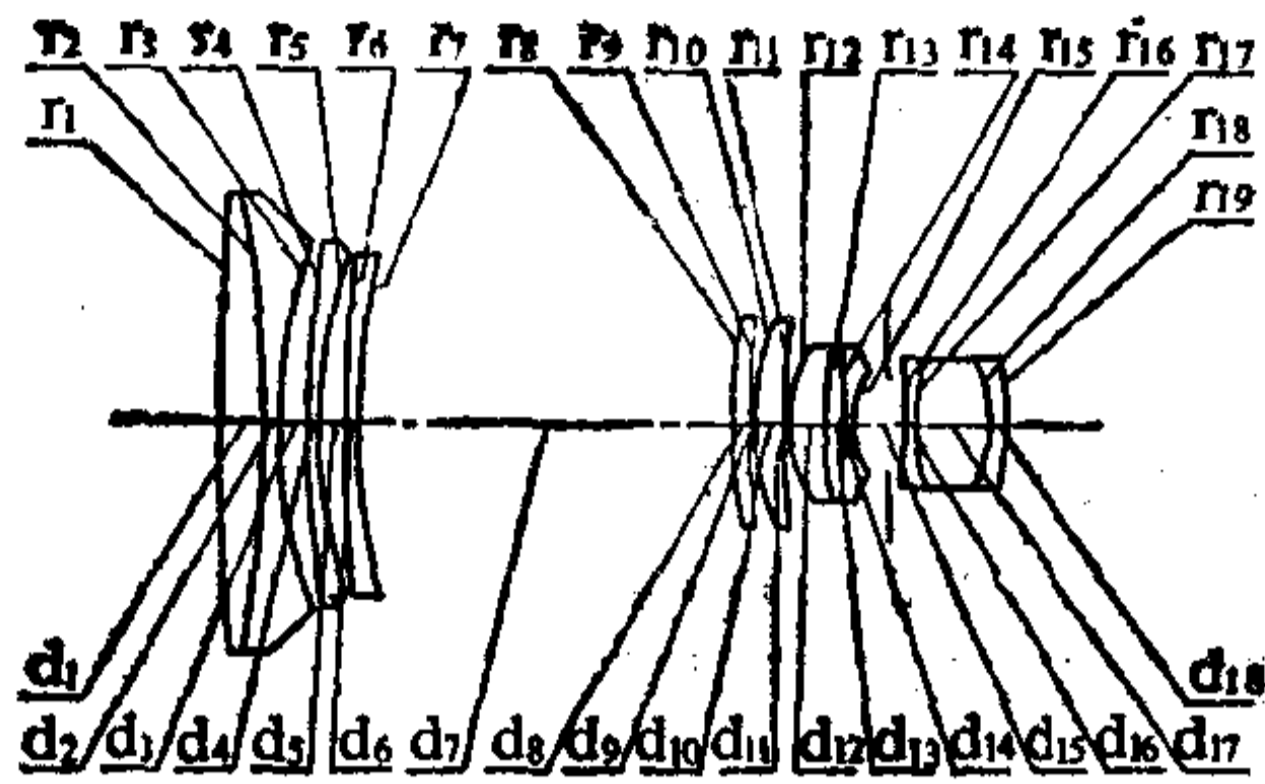
	ΣS <sub>1</sub>	ΣS <sub>2</sub>	ΣS <sub>3</sub>	ΣS <sub>4</sub>	ΣS <sub>5</sub>	HI	QP (1ω)
	-0.0867	-0.0298	-0.0476	0.0402	-0.3021	100	-1.4%
h 或 ω %	LA'	ΔH'	x <sub>1</sub> '	x <sub>2</sub> '	x <sub>1</sub> ' - x <sub>2</sub> '	K <sub>T1</sub>	K <sub>T0.7</sub>
100	-0.241	-1.408	-0.374	-1.747	1.368	-0.023	-0.064
70	-0.771	-0.492	-0.606	-0.357	-0.249	0.113	-0.011



编号: 03-02-067

# 广 角 镜 头

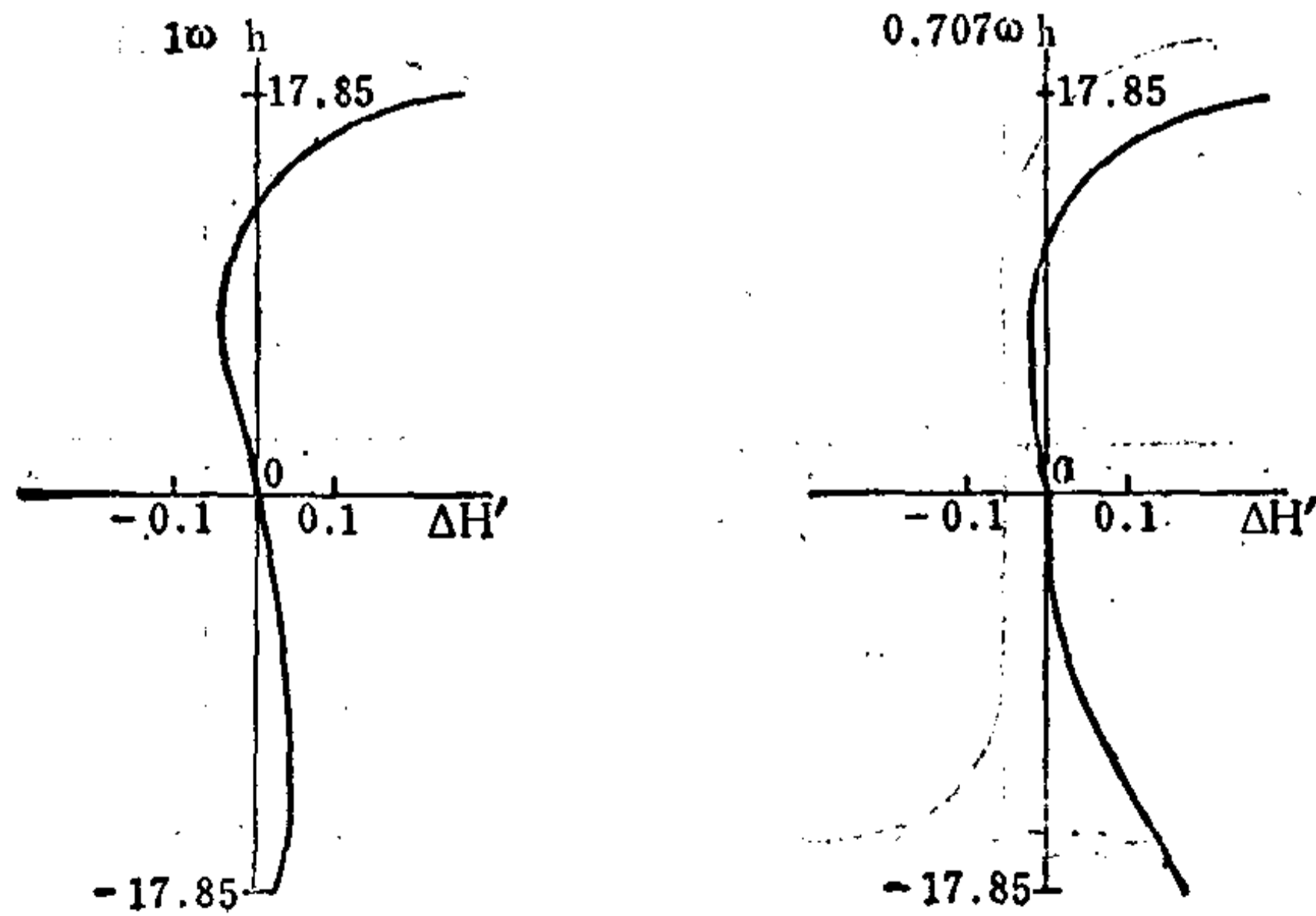
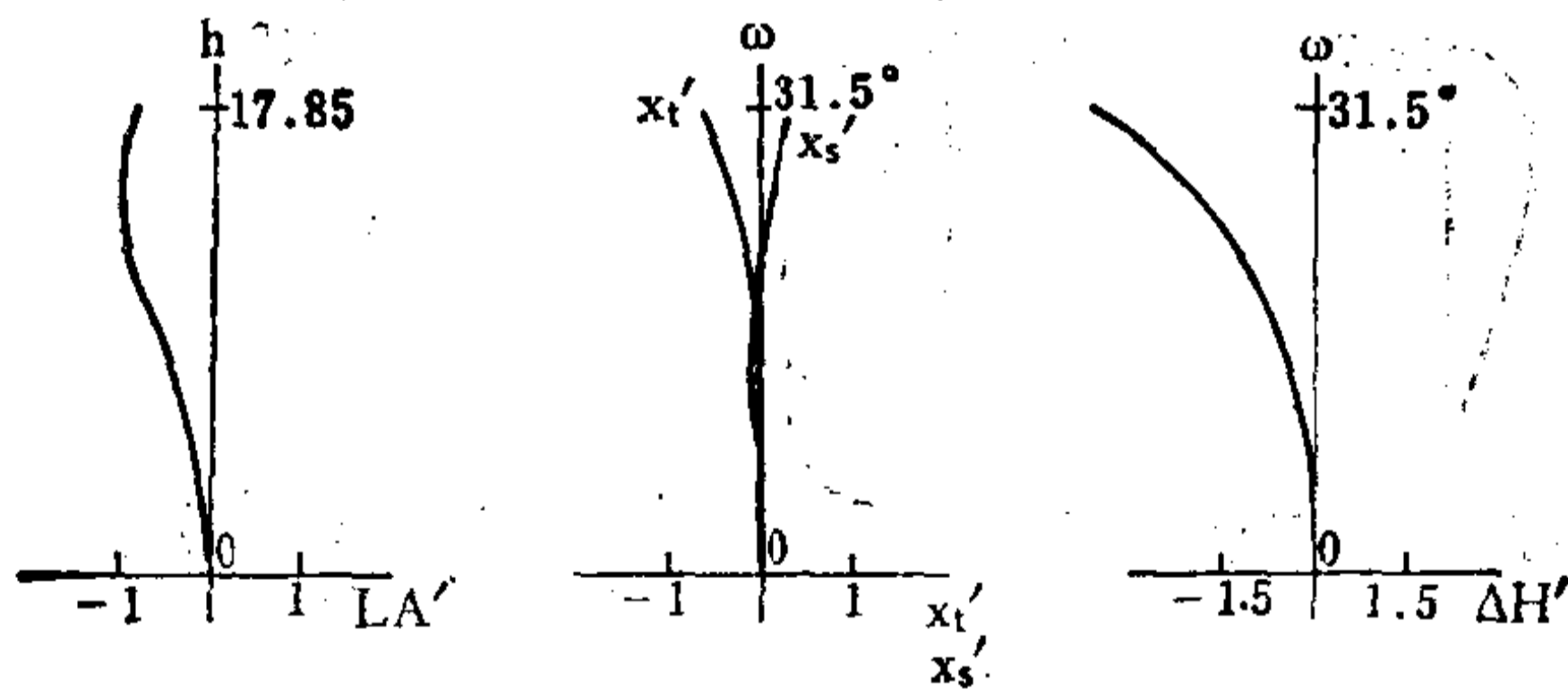
E. F. L = 100    B. F. L = 103.46    FNo. = 2.8\*\*    F. A. = ±31.5°



序号	r	d	$n_d$	$\nu_d$	序号	r	d	$n_d$	$\nu_d$
1	1322.732	22.65	1.74057	27.7	11	706.768	0.83		
2	-607.735	7.73	1.49892	65.7	12	63.028	18.78	1.67045	47.0
3	278.149	14.09			13	176.796	11.33	1.46398	65.4
4	1735.635	6.91	1.69139	54.6	14	-418.729	3.04	1.68927	33.1
5	278.149	12.43			15	40.718	26.24*		
6	1043.039	6.91	1.69139	54.6	16	-649.171	5.52	1.56091	45.3
7	367.003	193.37			17	101.478	37.57	1.66067	57.4
8	225.746	9.39	1.63900	55.7	18	-55.249	7.46	1.53959	59.7
9	564.365	0.28			19	-125.630			
10	116.022	16.85	1.63900	55.7					

$26.24^* = 14.00 + 12.24$

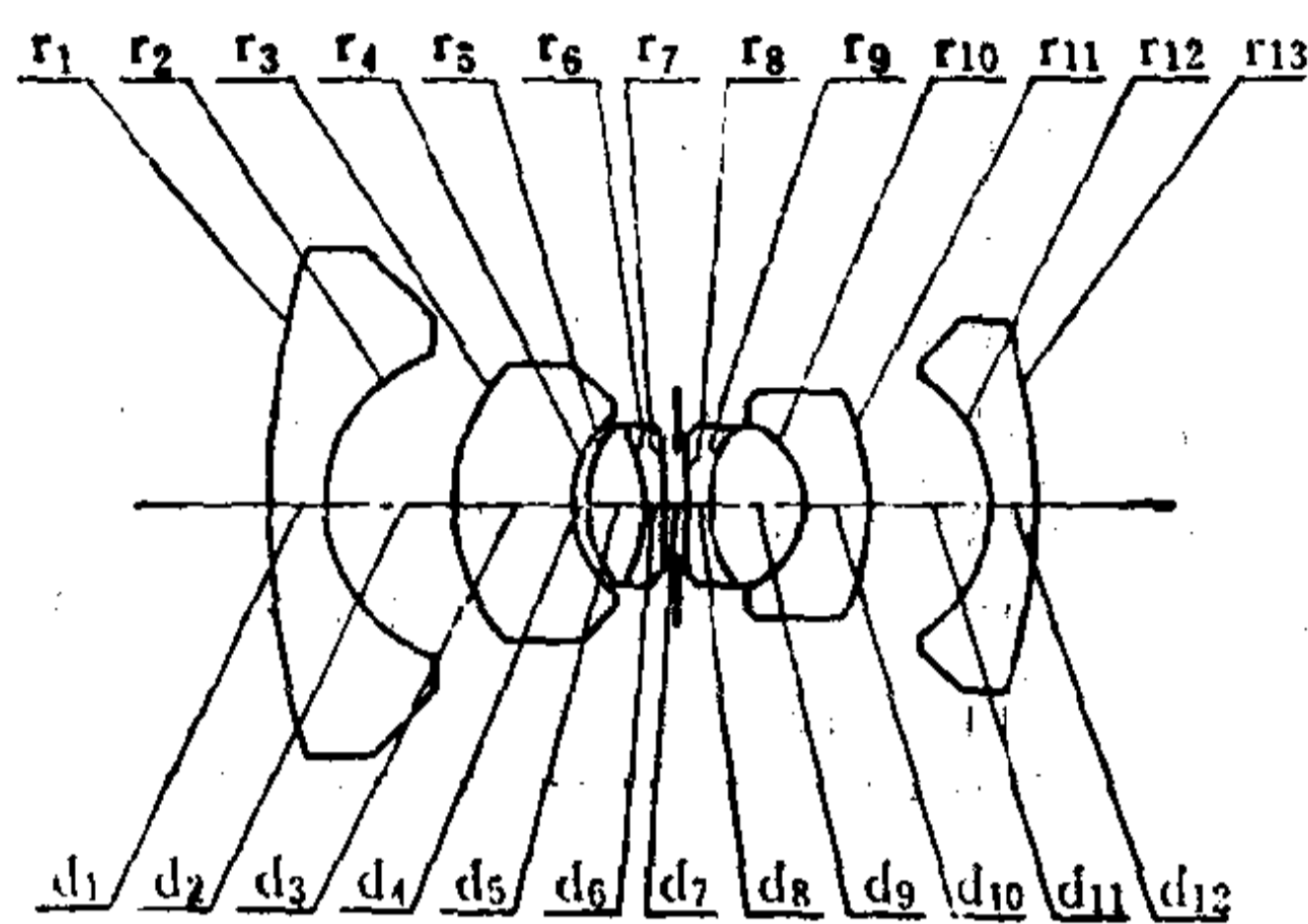
	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.1590	-0.0323	-0.0059	-0.0253	-1.0147	61.3	-6%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{f1}$	$K'_{f0.7}$
100	-0.862	-3.725	-0.651	0.347	-0.998	0.151	0.018
70	-0.908	-1.239	-0.212	-0.040	-0.172	0.226	0.054



编号: 03-02-068

# 超 广 角 镜 头

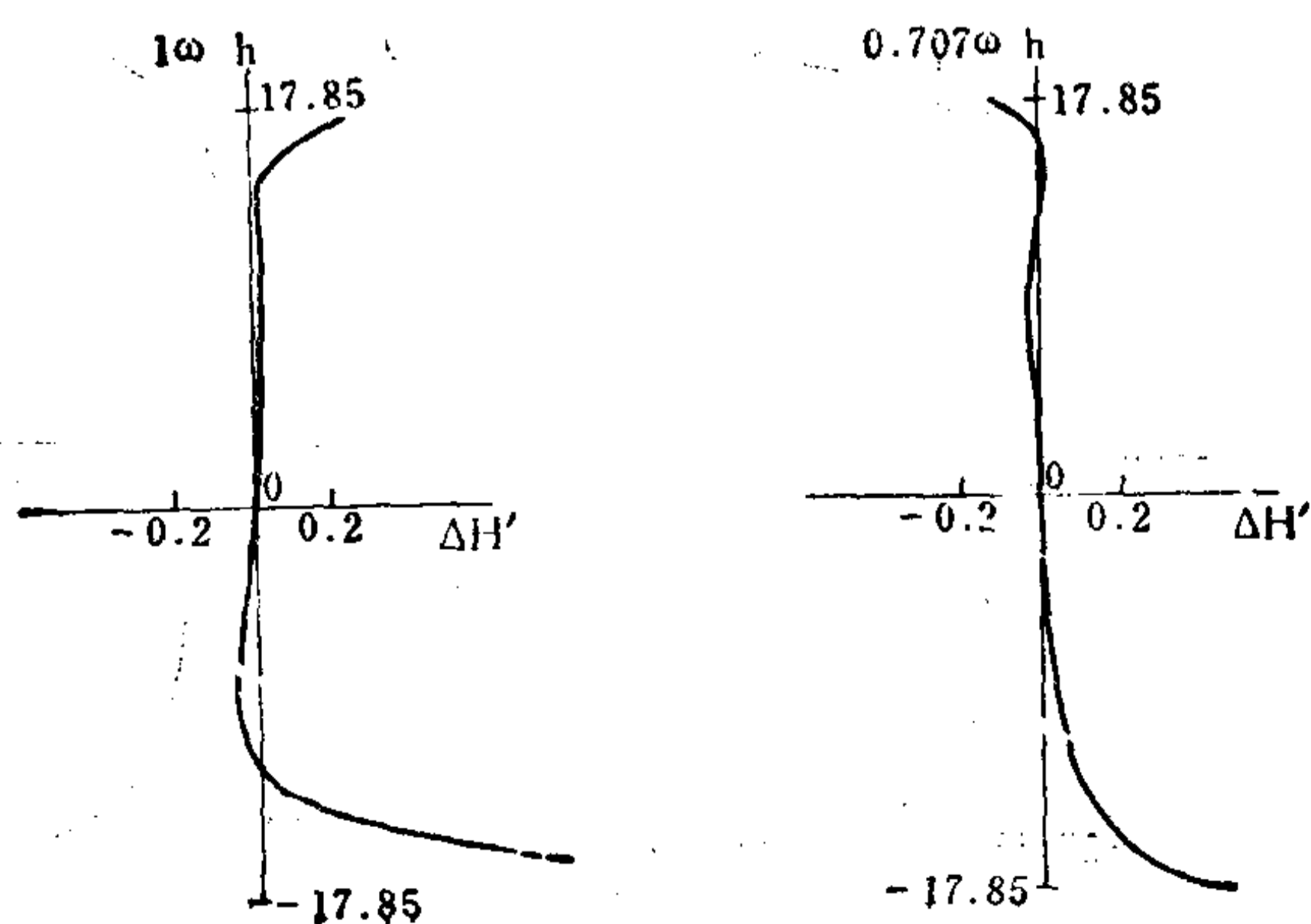
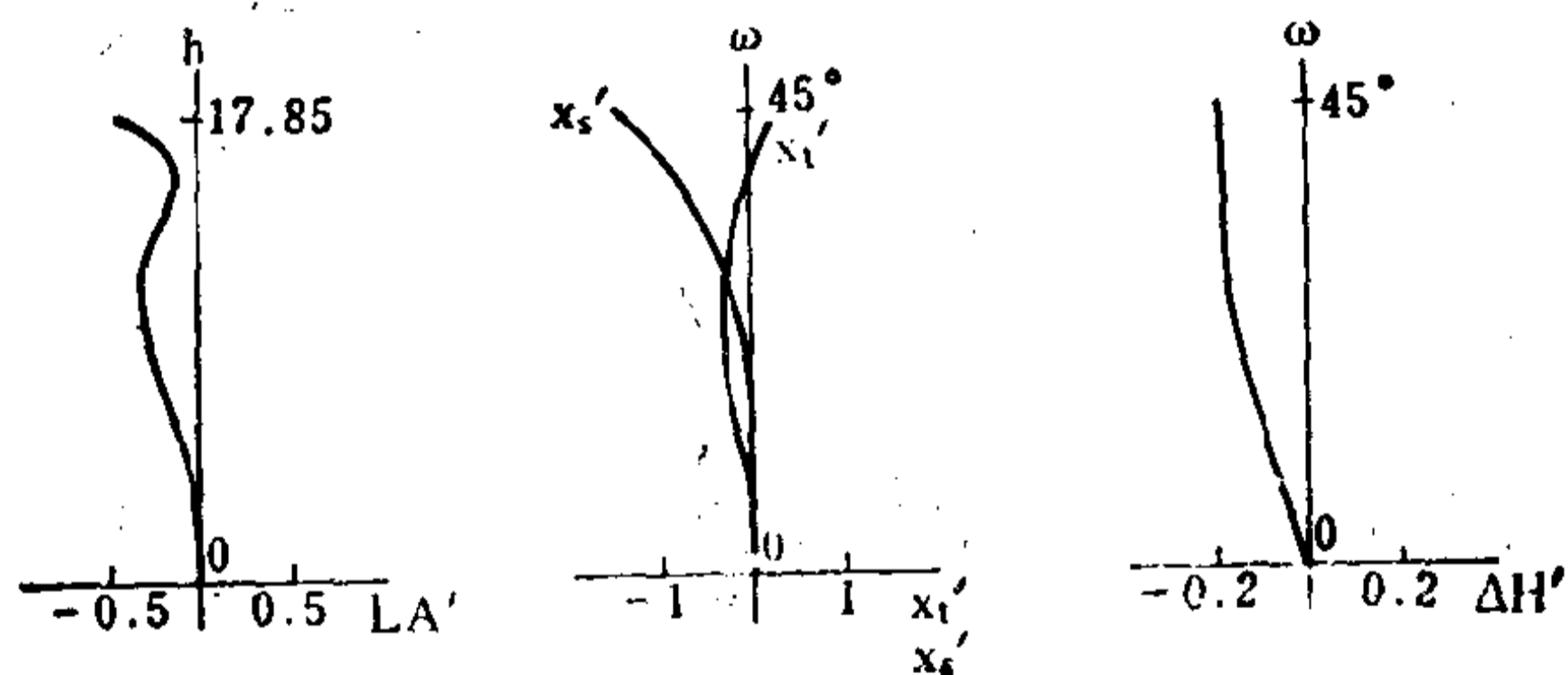
E.F.L=100    B.F.L=28.9    FNo.=2.8    F.A.=±45°



序号	r	d	$n_d$	$v$	序号	r	d	$n_d$	$v$
1	270.70	17.00	1.49388	66.1	8	1225.00	8.30	1.52015	63.6
2	47.95	38.55			9	35.85	29.20	1.62041	60.3
3	68.00	36.28	1.72340	38.0	10	-29.79	20.40	1.80802	40.7
4	39.72	2.20			11	-74.73	34.50		
5	43.14	16.90	1.67790	35.5	12	-42.06	14.00	1.50463	64.7
6	-45.35	6.80	1.57501	41.3	13	-176.70			
7	-792.80	6.00*							

6.00\* = 3.00 + 3.00

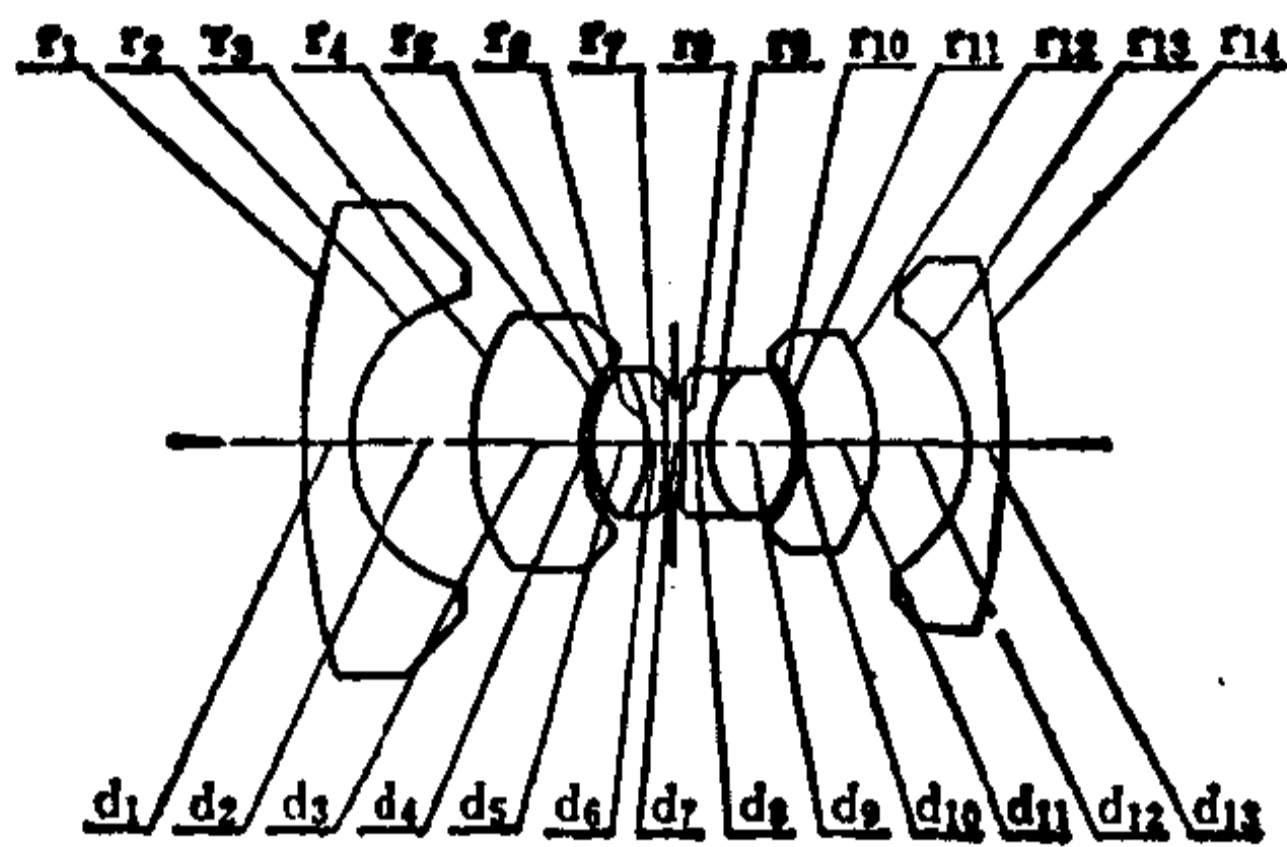
	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.0870	-0.0256	-0.0507	0.0342	-0.1984	100	-0.19%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{f1}$	$K'_{f0.7}$
100	-0.446	-0.189	0.317	-1.500	1.817	1.549	0.048
70	-0.299	-0.188	-0.328	-0.363	0.035	0.176	0.033



编号: 03-02-069

# 超 广 角 镜 头

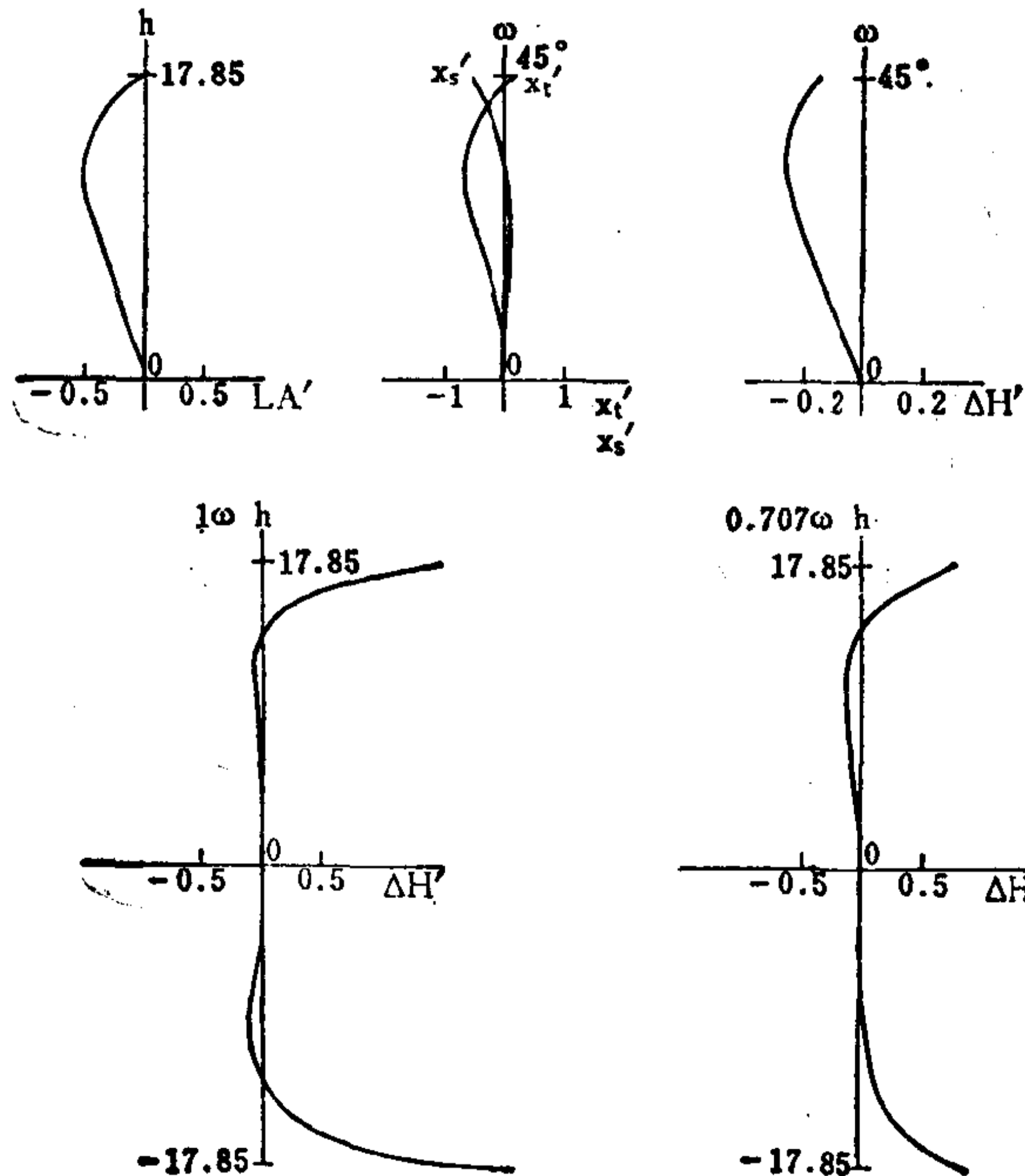
E. F. L = 100    B. F. L = 82.70    FNo. = 2.8    F. A. = ±45°



序号	r	d	$n_d$	v	序号	r	d	$n_d$	v
1	267.00	17.00	1.49388	66.1	8	893.84	9.55	1.47069	67.3
2	48.21	40.80			9	34.85	27.00	1.55755	67.3
3	67.64	35.16	1.66998	39.2	10	-41.50	0.70		
4	40.75	3.04			11	-36.87	24.10	1.85000	29.0
5	45.25	16.90	1.67790	55.5	12	-63.54	32.00		
6	-48.00	6.80	1.56138	45.3	13	-42.55	12.50	1.51823	59.0
7	-715.00	5.76*			14	-199.70			

$5.76^* = 2.88 + 2.88$

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.1269	-0.0651	-0.1105	0.1030	-0.2998	100	-0.17%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_i$	$x'_s$	$x'_i - x'_s$	$K'_{T1}$	$K'_{T0.7}$
100	-0.0257	-0.174	0.160	-0.526	0.686	1.865	-0.068
70	-0.5802	-0.269	-0.724	0.008	-0.732	0.833	0.015



编号: 03-02-070

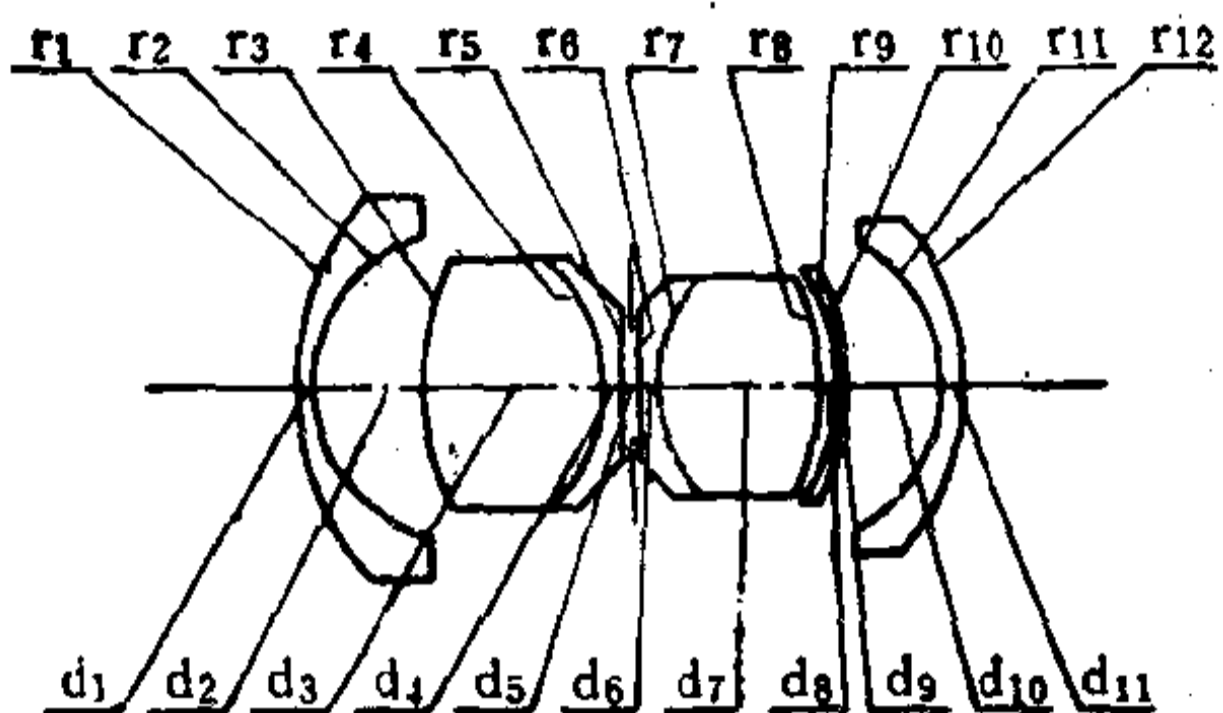
# 广 角 镜 头

E. F. L = 100

B. F. L = 59.4

FNo. = 6.5

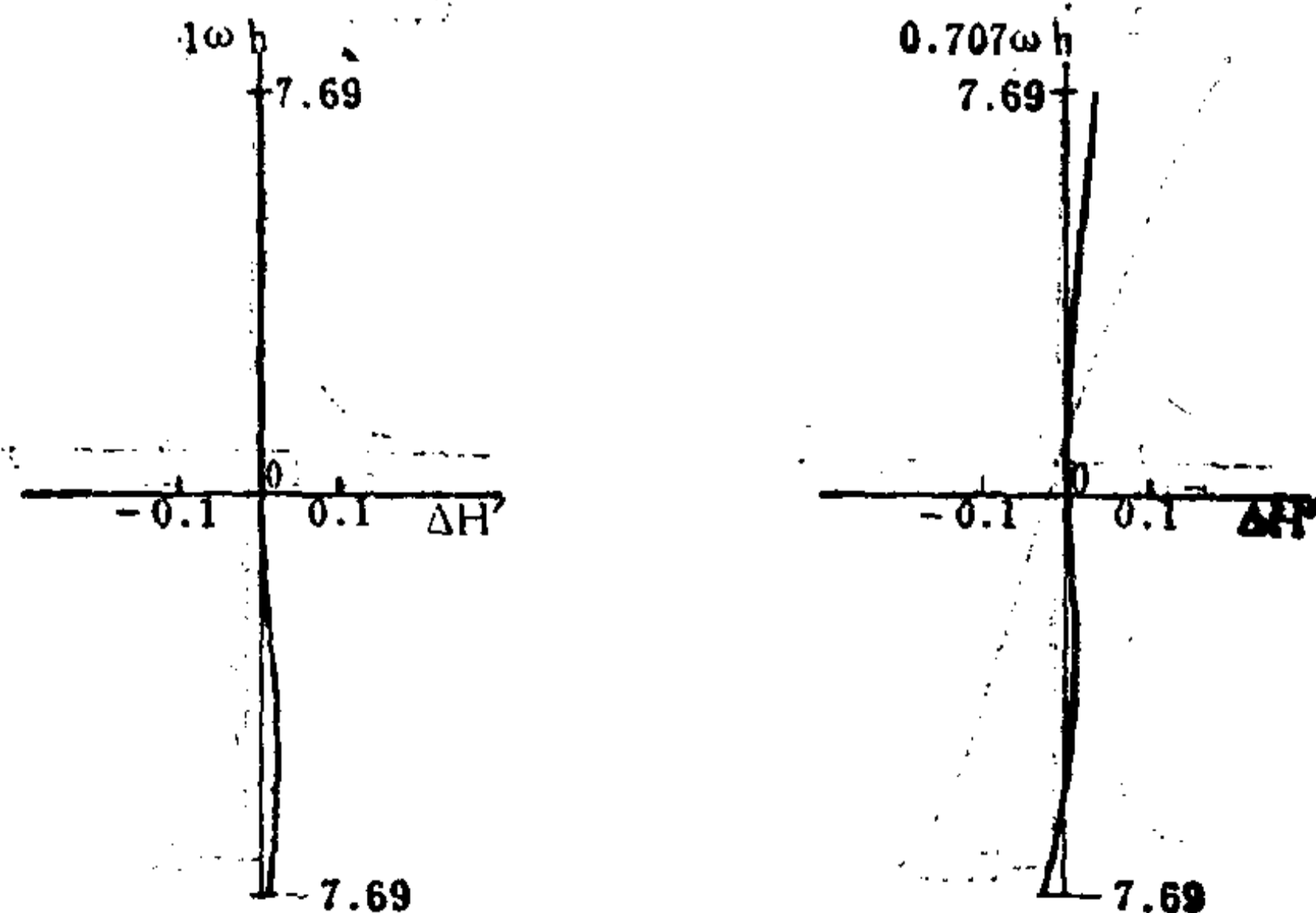
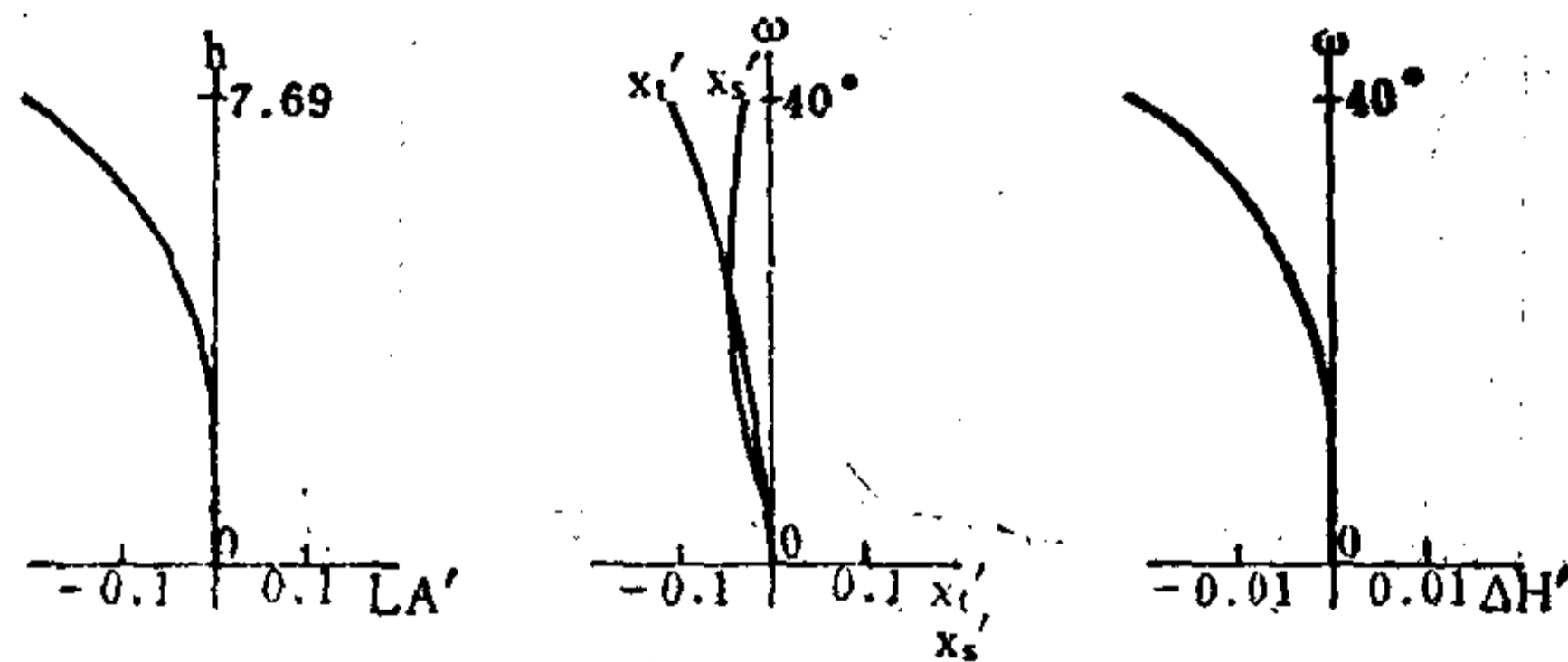
F. A. = ± 40°



序号	r	d	n <sub>d</sub>	v	序号	r	d	n <sub>d</sub>	v
1	55.62	2.85	1.55833	67.8	7	28.34	32.10	1.65160	58.5
2	28.80	22.45			8	-47.55	3.14		
3	67.32	32.67	1.65663	57.0	9	-39.33	1.35	1.58144	40.8
4	-31.05	2.48	1.53256	46.0	10	-59.53	18.10		
5	212.20	3.80*			11	-28.78	3.80	1.66672	48.4
6	-485.70	2.76	1.54072	47.2	12	-49.80			

3.80\* = 1.90 + 1.90

	ΣS <sub>1</sub>	ΣS <sub>2</sub>	ΣS <sub>3</sub>	ΣS <sub>4</sub>	ΣS <sub>5</sub>	HI	QP(1ω)
	-0.00042	0.00113	-0.00235	0.00248	-0.00178	83.9	-0.02%
h 或 ω %	LA'	ΔH'	x <sub>t</sub> '	x <sub>s</sub> '	x <sub>t</sub> ' - x <sub>s</sub> '	K <sub>T1</sub> '	K <sub>T0.7</sub> '
100	-0.210	-0.0222	-0.110	-0.032	-0.078	0.00251	0.00400
70	-0.056	-0.0066	-0.062	-0.039	-0.023	0.00844	0.00573



编号: 03-02-071

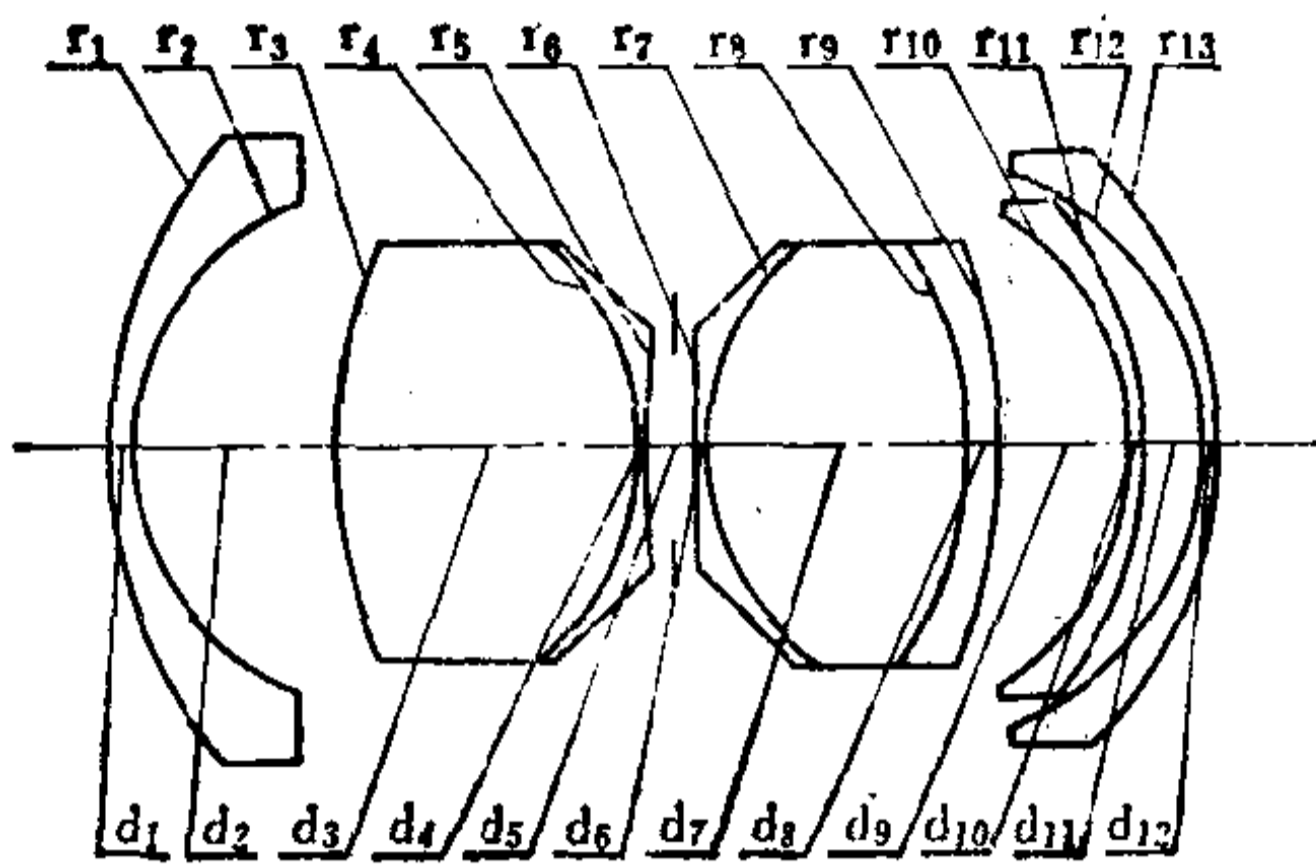
# 广 角 镜 头

E. F. L = 99.9

B. F. L = 57.9

FNo. = 6.5

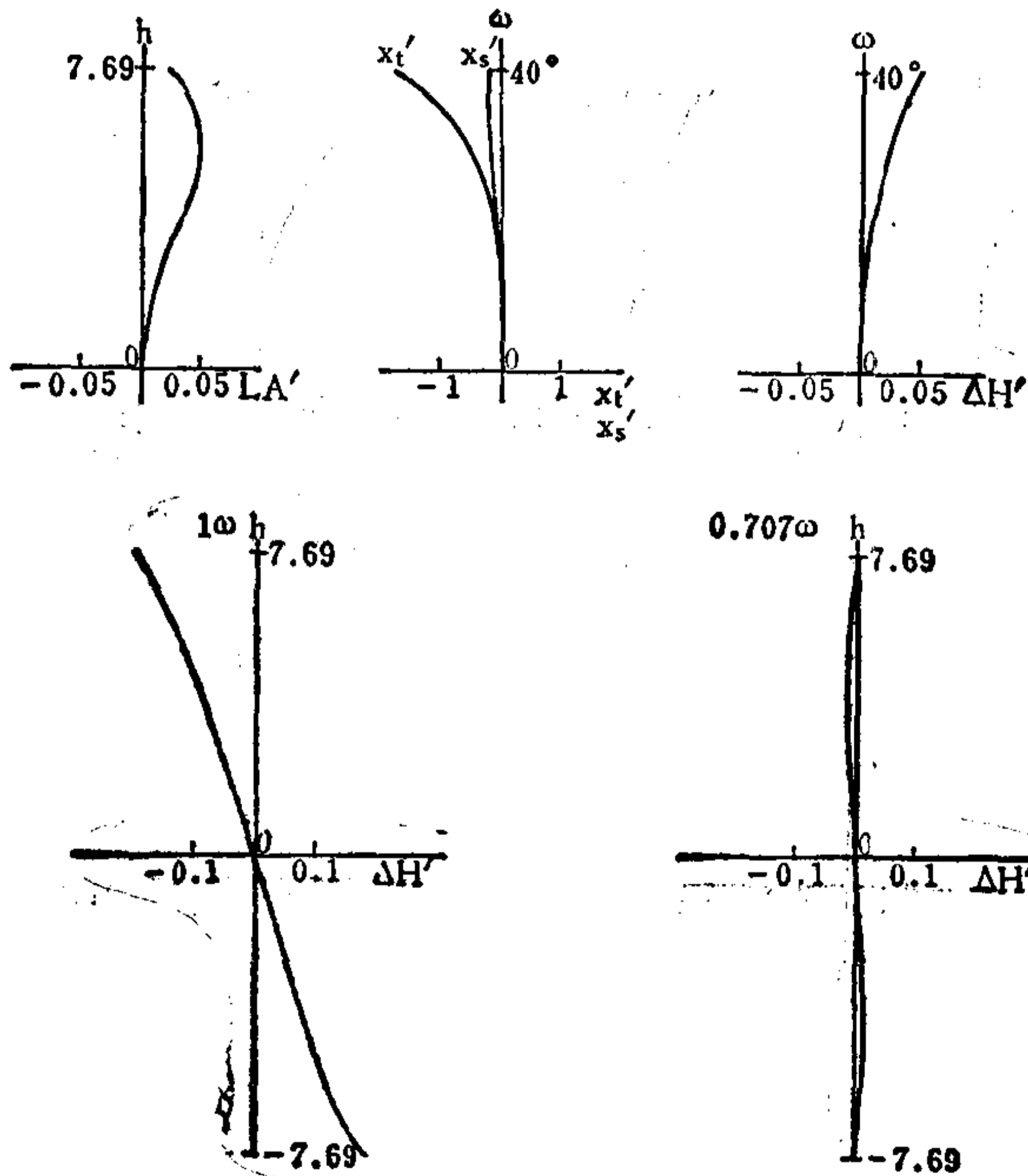
F. A. =  $\pm 40^\circ$



序号	r	d	nd	v	序号	r	d	nd	v
1	52.75	2.85	1.55823	67.8	8	-44.00	3.60	1.58100	46.0
2	28.80	22.45			9	-71.26	15.22		
3	69.00	32.67	1.65663	57.0	10	-30.80	1.50	1.53172	48.9
4	-30.15	1.00	1.53256	46.0	11	-44.00	6.00		
5	212.20	5.49*			12	-31.39	1.50	1.53172	48.9
6	-488.85	1.00	1.54125	47.6	13	-44.84			
7	28.34	32.10	1.65160	58.5					

$5.490^* = 2.745 + 2.745$

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	0.00186	0.00065	-0.00091	0.00087	0.00770	83.8	0.05%
h 或 $\omega$ %	LA'	$\Delta H'$	$x_t$	$x_s$	$x_t' - x_s'$	$K_{F1}$	$K'_{F0.7}$
100	0.0197	0.0479	-1.842	-0.256	-1.586	-0.0155	-0.0089
70	0.0434	0.0191	-0.374	-0.108	-0.266	-0.0009	-0.0001





编号: 03-02-072

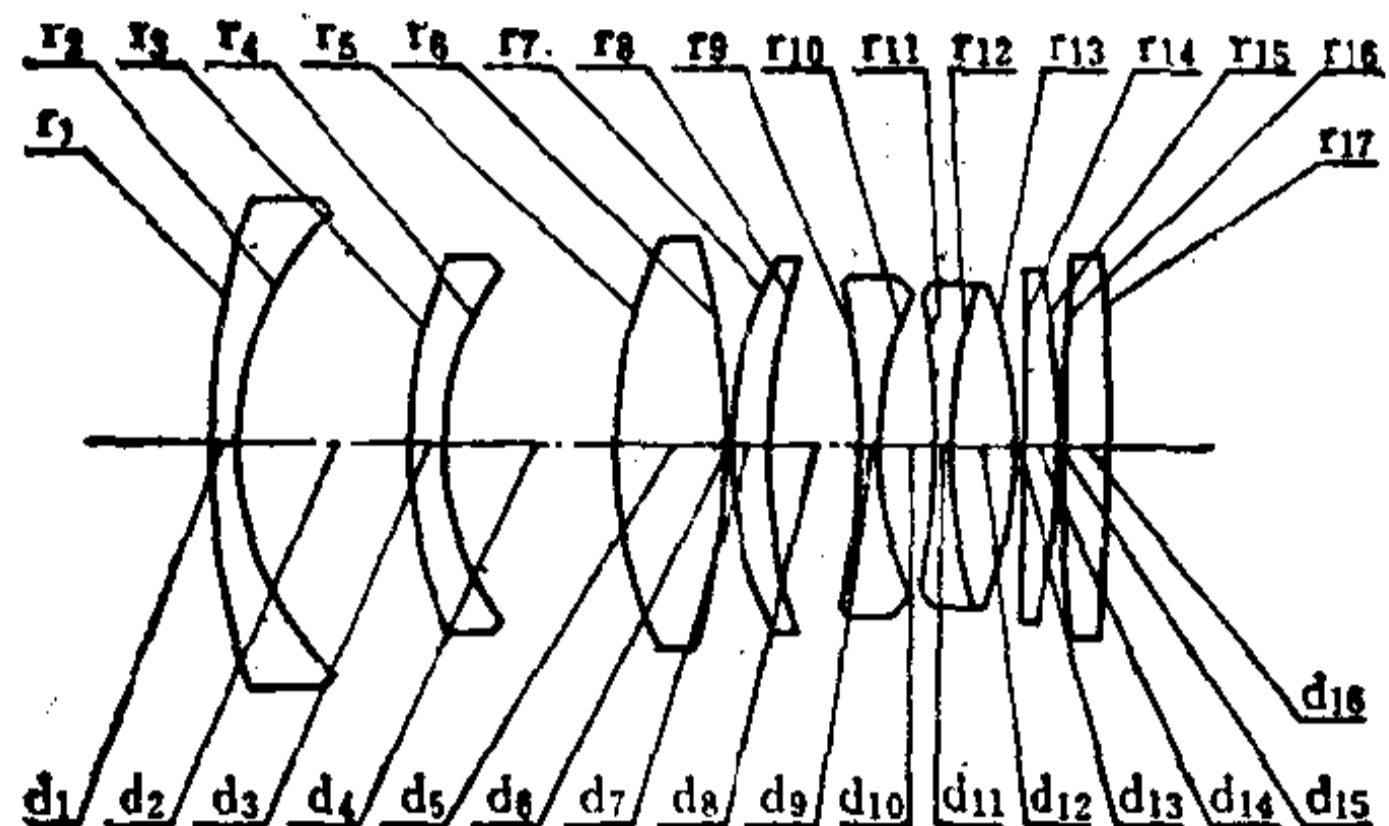
# 大孔径广角摄影物镜

E.F.L = 1

B.F.L = 1.0569

FNo. = 1.8

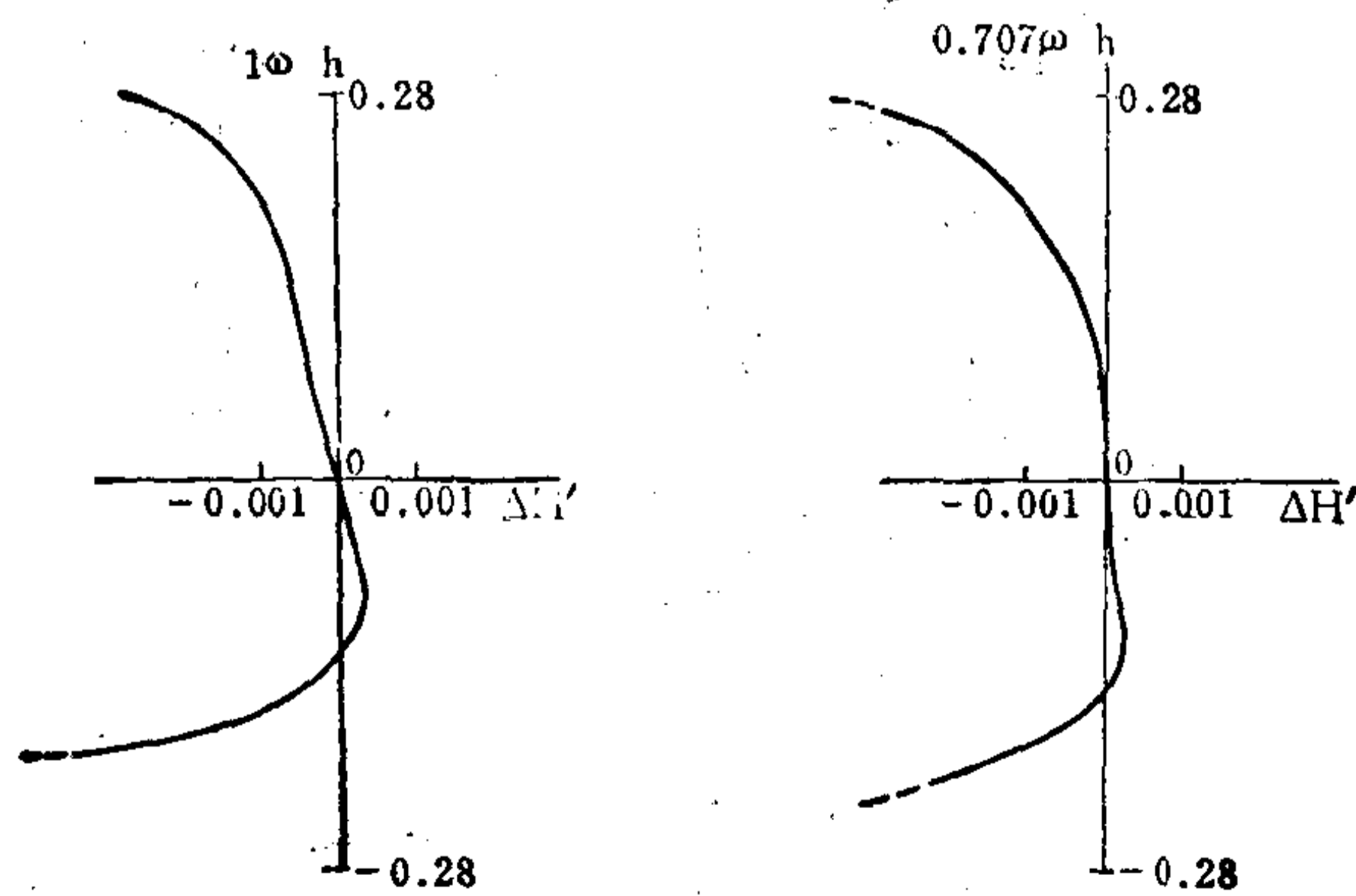
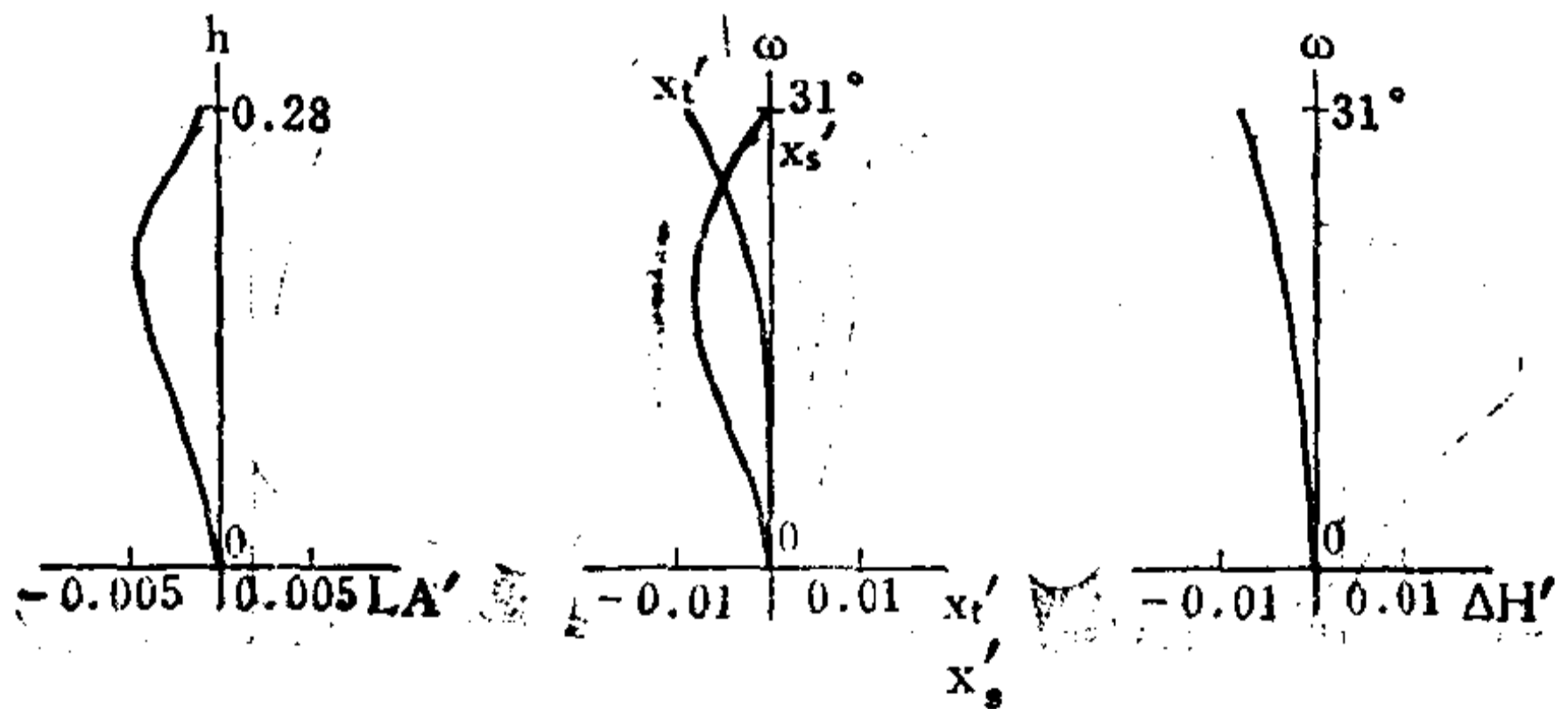
F.A. = ±31°



序号	r	d	nd	v	序号	r	d	nd	v
1	1.4993	0.0688	1.60311	60.68	10	0.8117	0.1128		
2	0.6827	0.3719			11	-1.7678	0.0385	1.75520	27.53
3	0.8333	0.0825	1.62041	60.29	12	1.5595	0.1430	1.62041	60.29
4	0.6302	0.3698			13	-0.8543	0.0028		
5	1.0845	0.2475	1.69100	54.80	14	14.8653	0.0990	1.62041	60.29
6	-1.5771	0.0028			15	-1.4338	0.0028		
7	0.8912	0.0963	1.62041	60.29	16	5.1300	0.0963	1.62041	60.29
8	1.2808	0.1870*			17	-4.3172			
9	-1.3721	0.0413	1.58144	40.80					

0.1870\* = 0.0900 + 0.0970

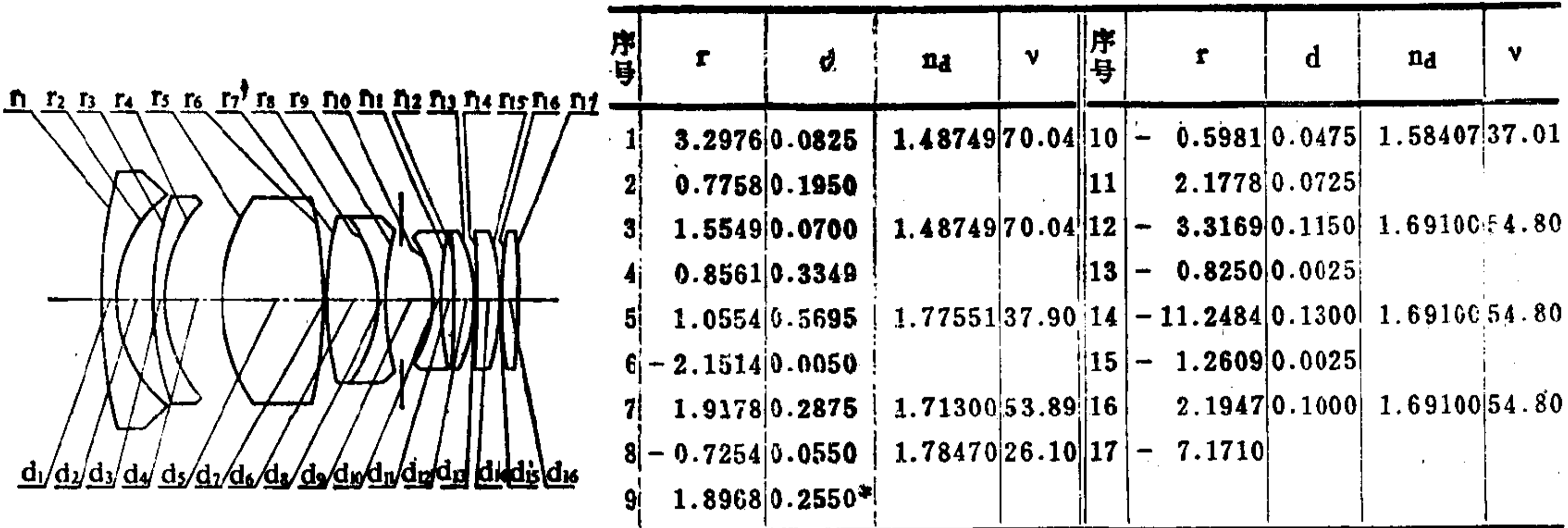
	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.00294	0.00051	0.00126	-0.00474	-0.00636	0.6	-1.3%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{11}$	$K'_{T0.7}$
100	-0.00116	-0.00795	-0.00885	-0.00044	-0.00841	-0.0136	-0.0021
70	-0.00453	-0.00406	-0.00192	-0.00780	0.00587	-0.0083	-0.0009



编号: 03-02-073

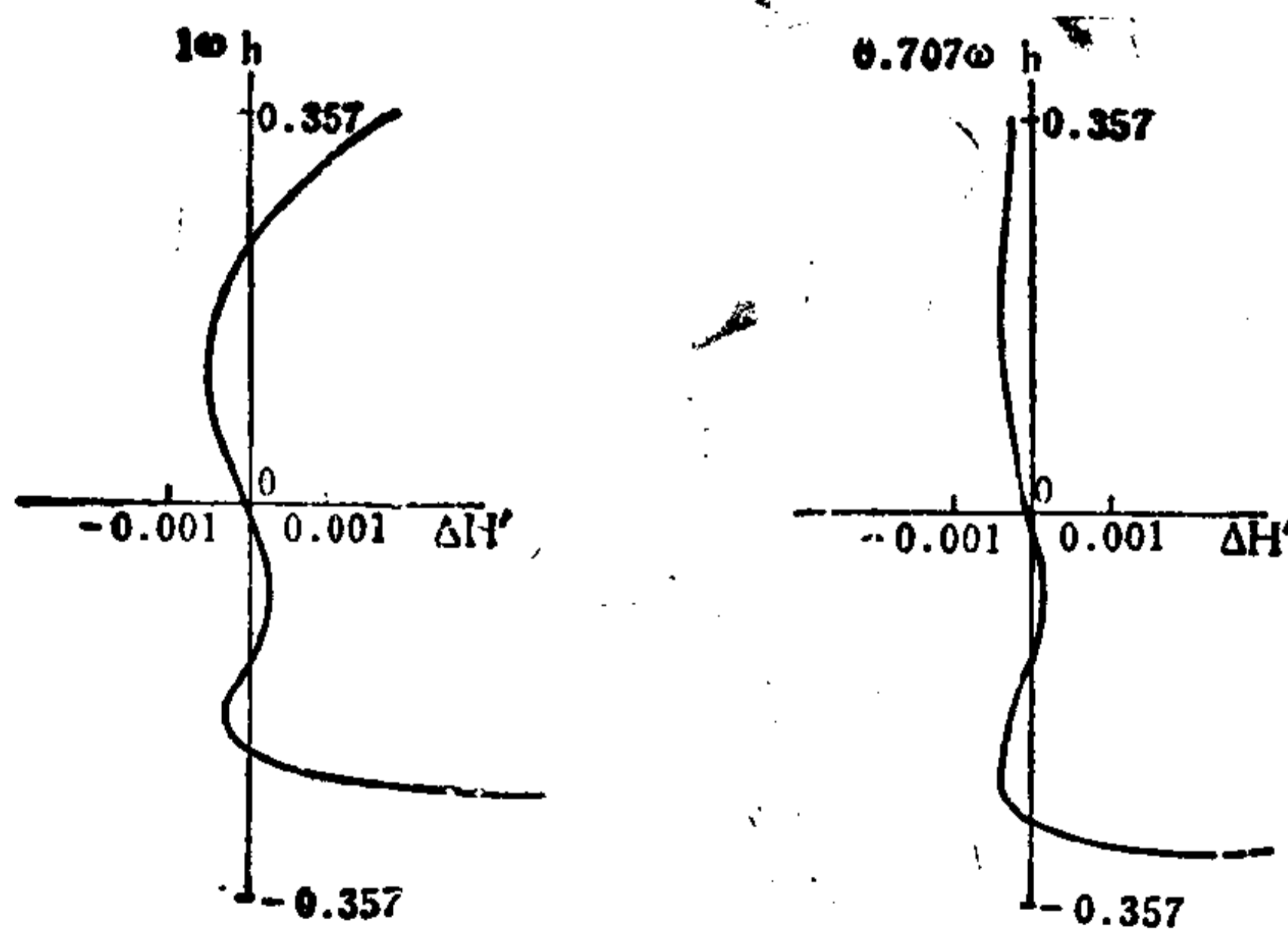
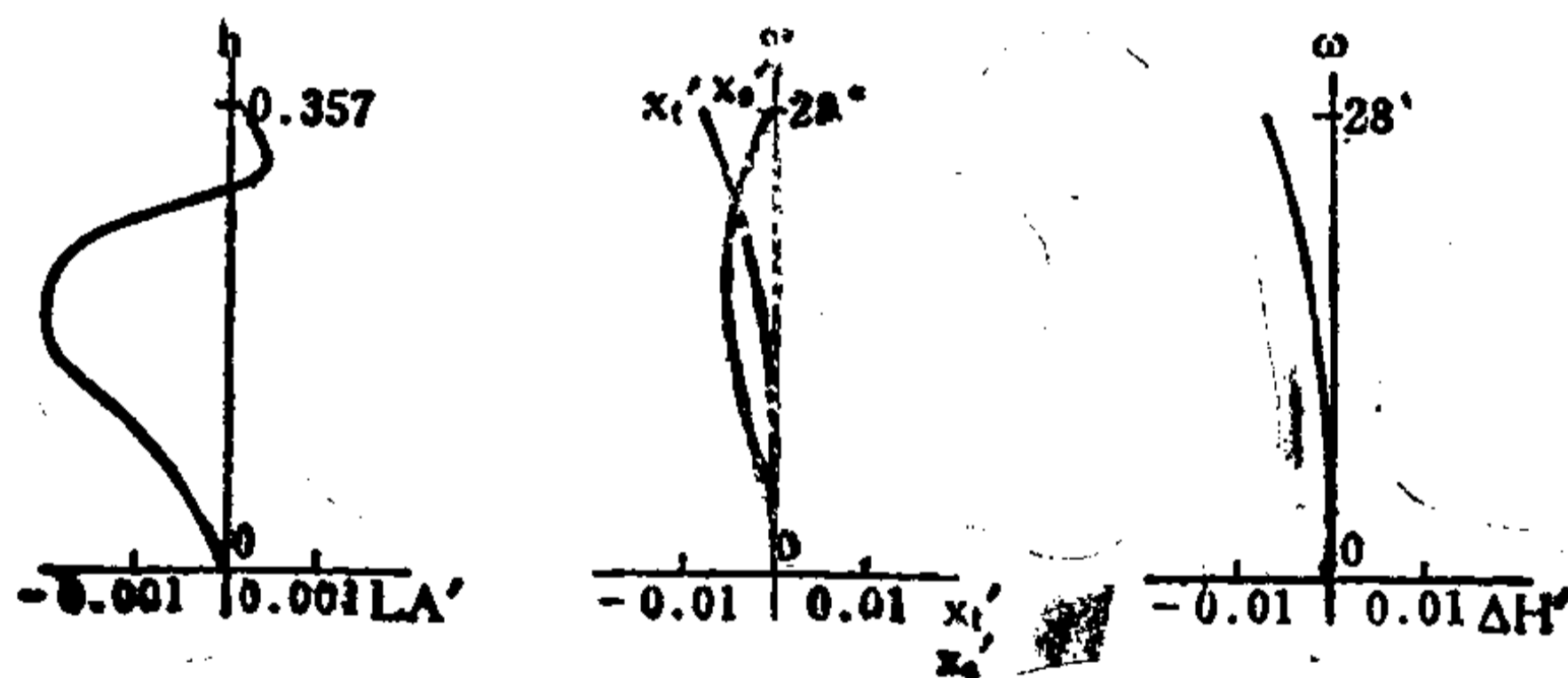
# 大孔径广角摄影物镜

E.F.L = 1    B.F.L = 0.9047    FNo. = 1.4    F.A. = ±28°



0.2550\* = 0.1000 + 0.1550

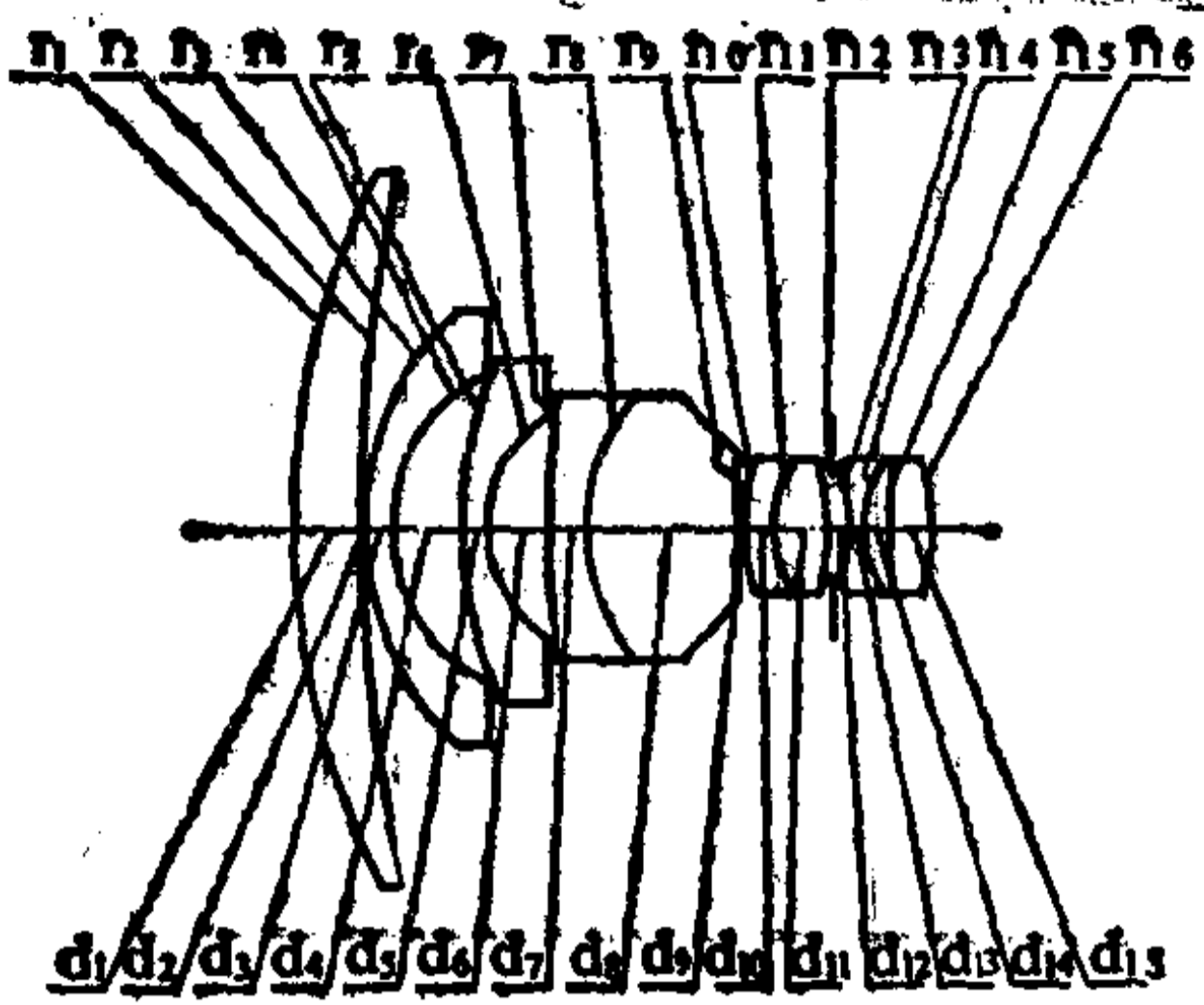
	ΣS <sub>1</sub>	ΣS <sub>2</sub>	ΣS <sub>3</sub>	ΣS <sub>4</sub>	ΣS <sub>5</sub>	HI	QP(1ω)
	-0.00327	0.00039	0.00119	-0.00539	-0.00698	0.53	-1.2%
h 或 ω %	LA'	ΔH'	x <sub>t</sub> '	x <sub>s</sub> '	x <sub>t</sub> ' - x <sub>s</sub> '	K <sub>r1</sub> '	K <sub>r0.7</sub> '
100	0.00007	-0.0066	-0.0071	-0.0001	-0.0070	-0.6472	0.0016
70	-0.00176	-0.0034	-0.0028	-0.0057	0.0031	0.0911	-0.0004



编号: 03-02-074

# 广 角 镜 头

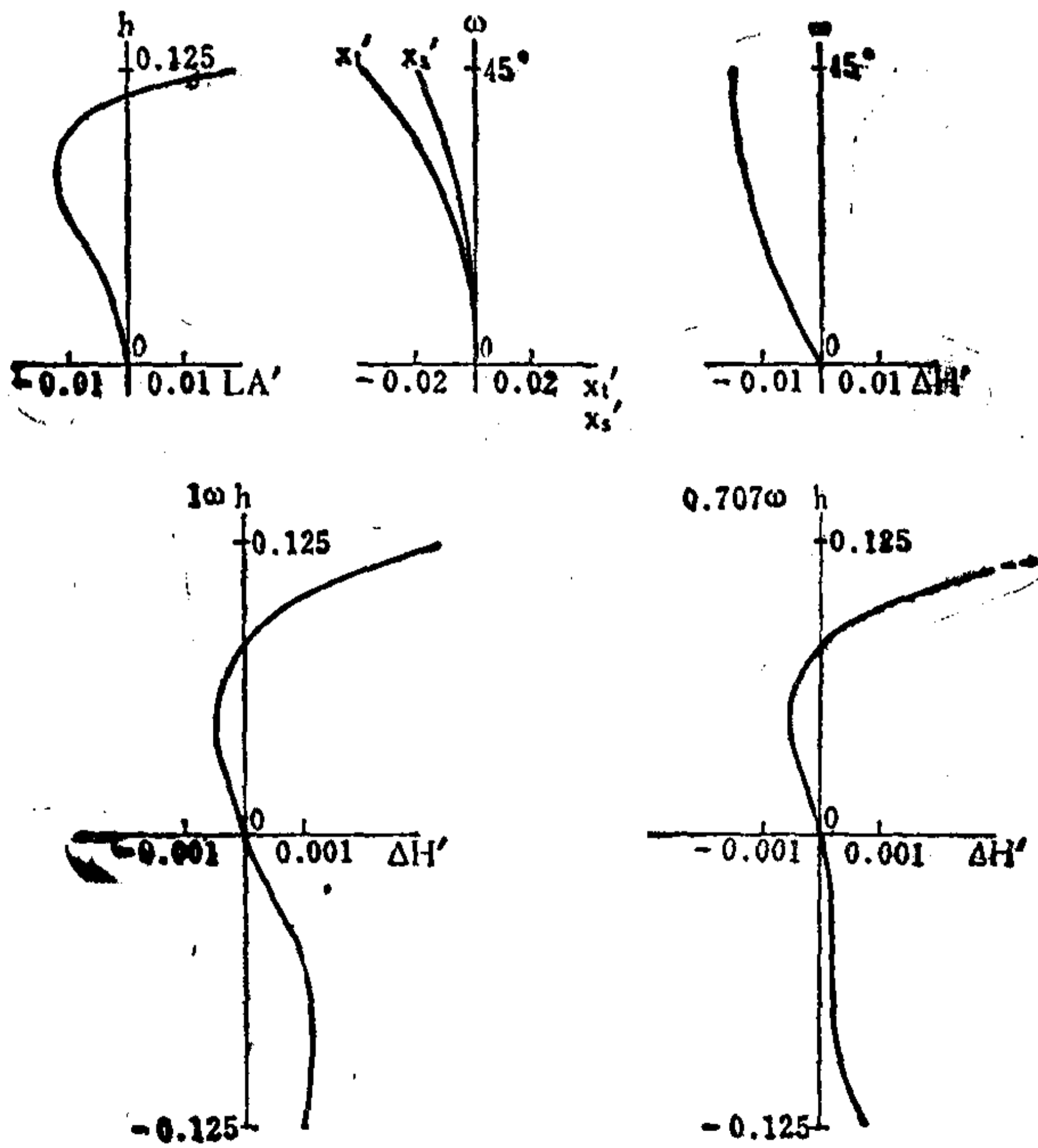
E.F.L = 1    B.F.L = 1.8865    FNo. = 4    F.A. = ±45°\*



序号	r	d	nd	v	序号	r	d	nd	v
1	3.2200	0.2695	1.6935	53.6	9	$\infty$	0.0236		
2	7.2340	0.0047			10	0.7267	0.1087	1.7280	38.0
3	1.1905	0.1040	1.6935	53.6	11	0.4260	0.2222	1.6100	38.0
4	0.6783	0.2931			12	-1.0269	0.0875*		
5	1.6760	0.0946	1.6935	53.6	13	-0.7678	0.0496	1.6780	32.2
6	0.5201	0.2600			14	0.4232	0.1040	1.5160	56.8
7	6.3020	0.1418	1.6200	60.8	15	1.4893	0.1584	1.6780	50.8
8	0.8510	0.6099	1.5500	45.4	16	-0.7366			

$0.0875^* = 0.0435 + 0.0440$

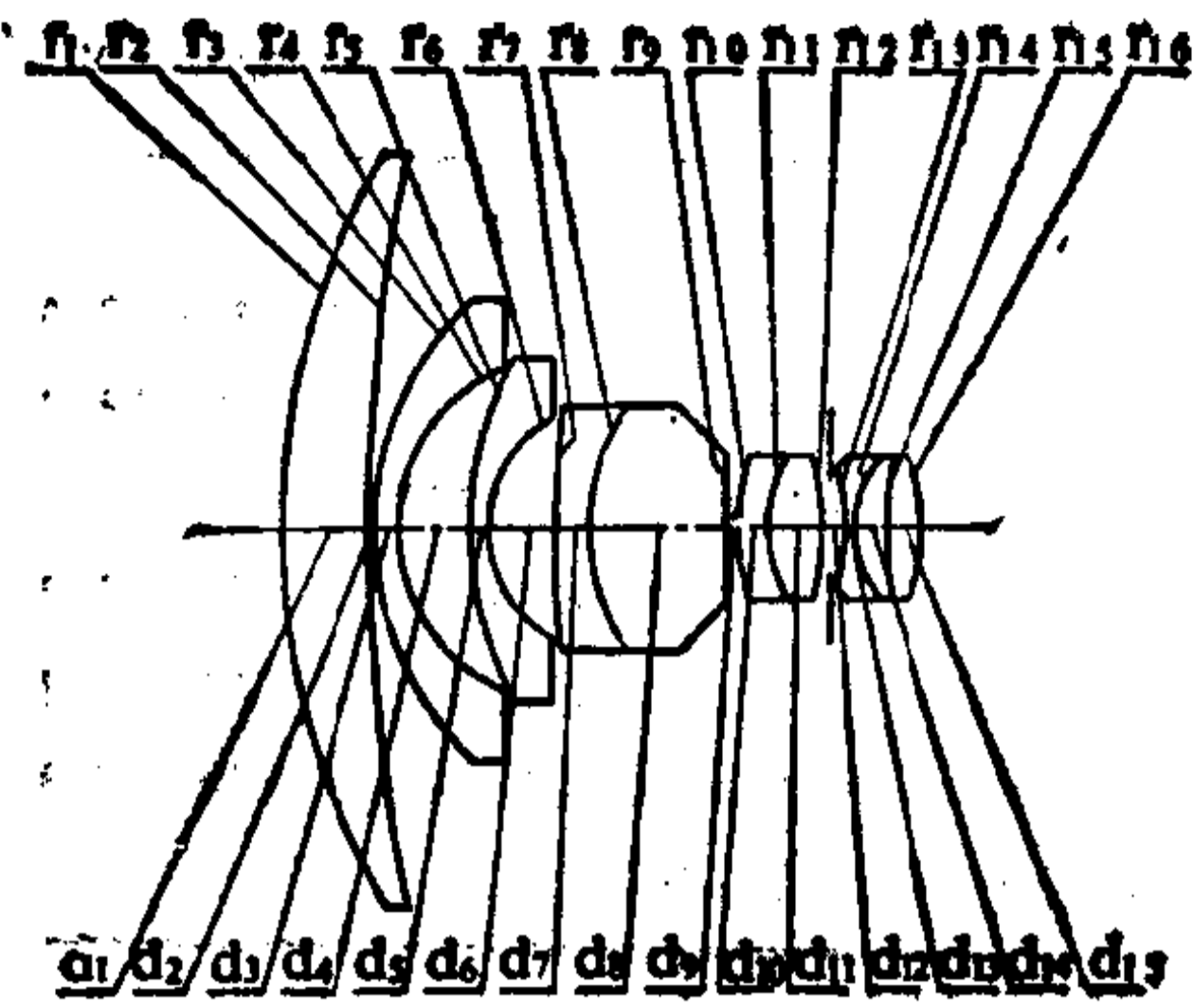
	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP (1 $\omega$ )
	-0.00153	0.00159	-0.00159	-0.00046	-0.00557	1	-1.5%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_i$	$x'_s$	$x'_i - x'_s$	$Kf_1$	$Kf_{0.7}$
100	0.0197	-0.0153	-0.0394	-0.0193	-0.0201	0.0021	0.00059
70	-0.0133	-0.0129	-0.0161	-0.0109	-0.0052	0.0037	0.00026



编号: 03-02-075

# 超广角镜头

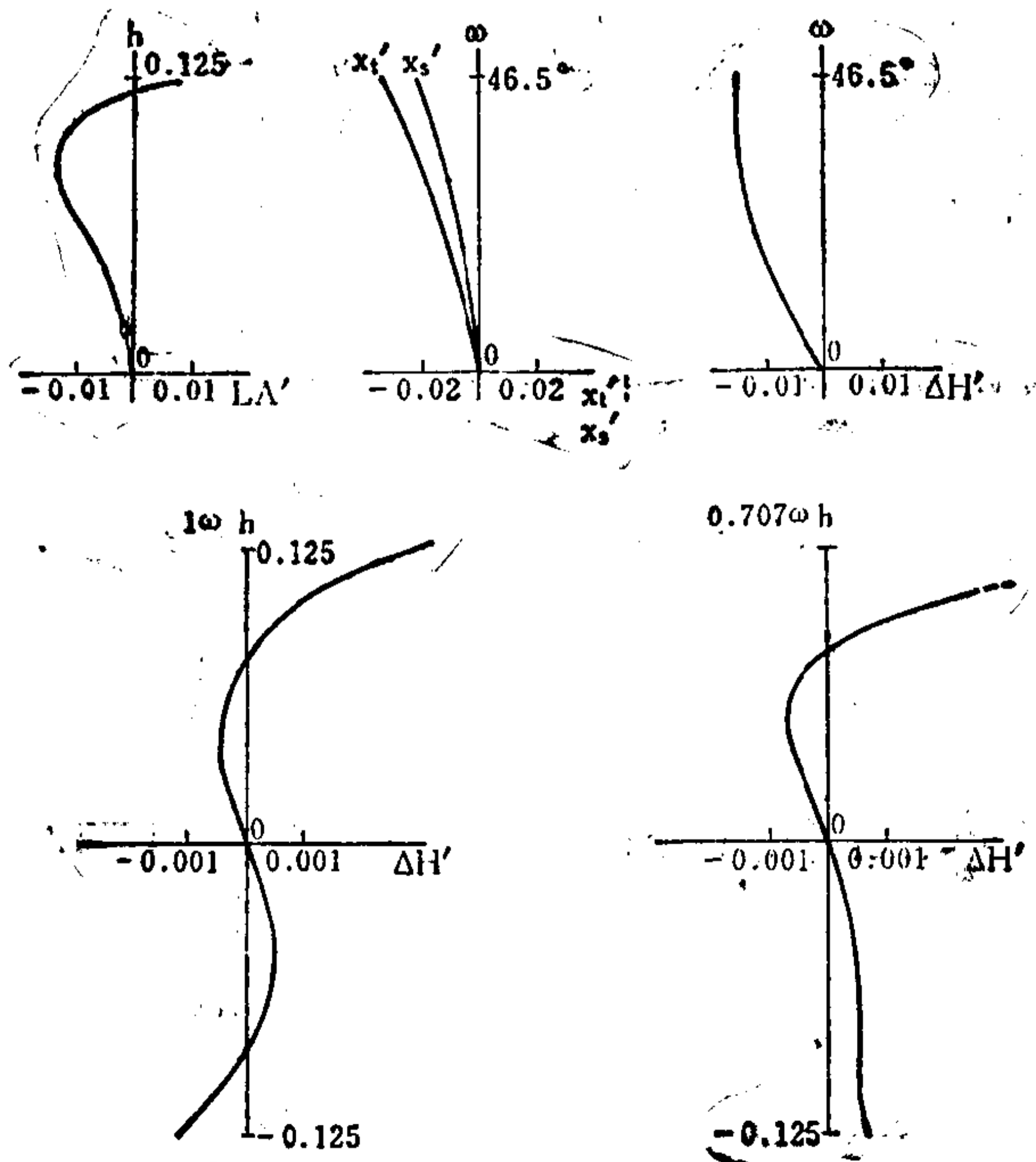
E.F.L = 1    B.F.L = 1.8239    FNo. = 4    F.A. = ±46.5°



序号	r	d	n <sub>d</sub>	v	序号	r	d	n <sub>d</sub>	v
1	2.9820	0.3722	1.5878	68.2	9	-9.0080	0.0424		
2	7.6730	0.0047			10	0.8065	0.1107	1.7352	41.0
3	1.3197	0.1036	1.6935	53.6	11	0.5397	0.2261	1.6166	36.6
4	0.7171	0.2874			12	-1.2398	0.0872*		
5	1.5198	0.0848	1.6935	53.6	13	-0.9116	0.0495	1.6889	31.1
6	0.5093	0.2615			14	0.4306	0.1272	1.5145	54.7
7	14.7230	0.1413	1.6428	58.4	15	1.6246	0.1413	1.6935	53.6
8	0.8413	0.5654	1.5731	42.7	16	-0.7538			

0.0872\* = 0.0432 + 0.0440

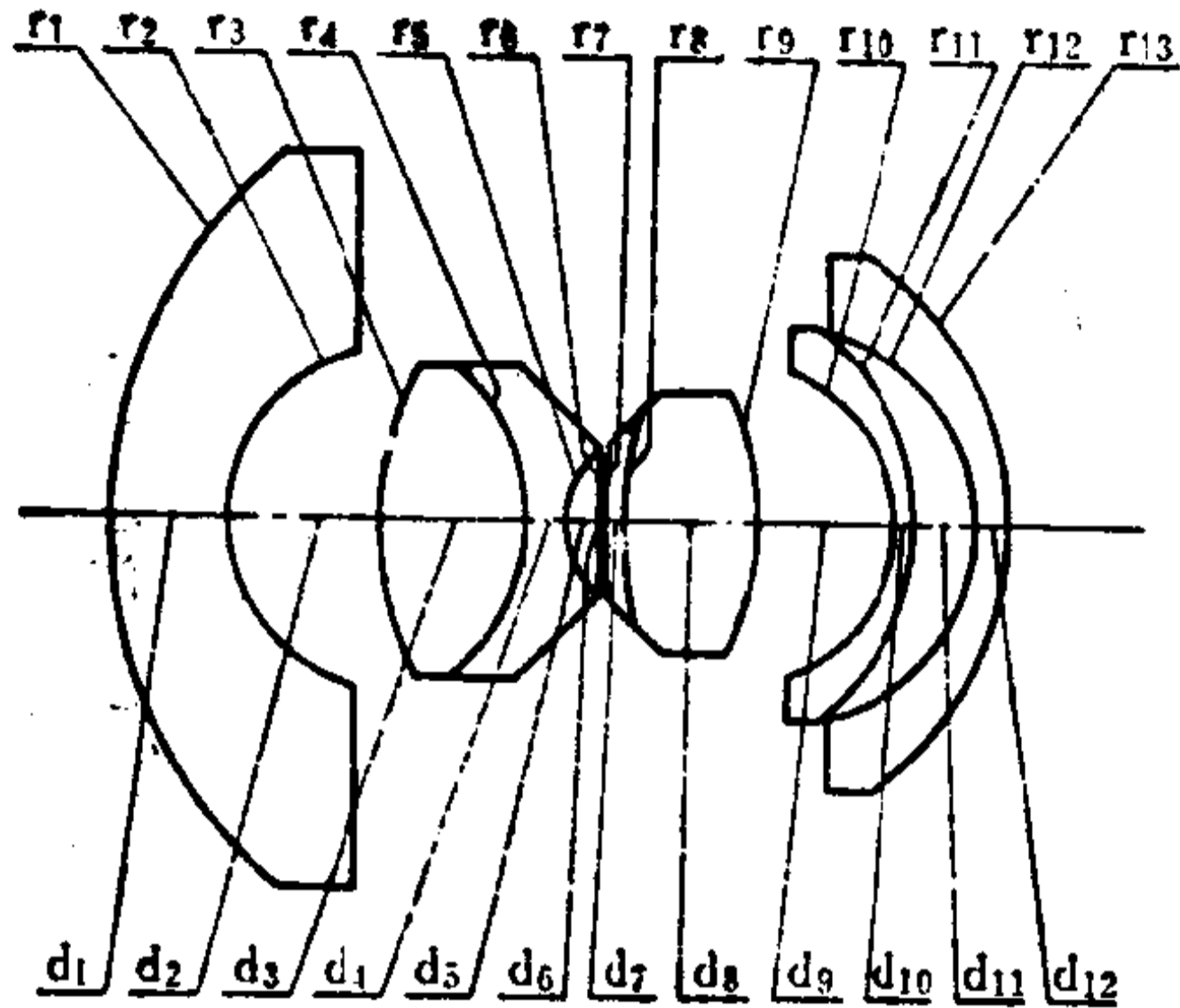
	ΣS <sub>1</sub>	ΣS <sub>2</sub>	ΣS <sub>3</sub>	ΣS <sub>4</sub>	ΣS <sub>5</sub>	HI	QP(1ω)
	-0.00146	0.00204	-0.00305	-0.00041	-0.00306	1.05	-1.4%
h 或 ω %	LA'	ΔH'	x <sub>t</sub> '	x <sub>s</sub> '	x <sub>t</sub> ' - x <sub>s</sub> '	K <sub>T1</sub> '	K <sub>T0.7</sub> '
100	0.0083	-0.01490	-0.0334	-0.0206	-0.0128	0.00074	0.00003
70	-0.0142	-0.01486	-0.0225	-0.0130	-0.0095	0.00376	0.00010



编号: 03-02-076

# 广角物镜

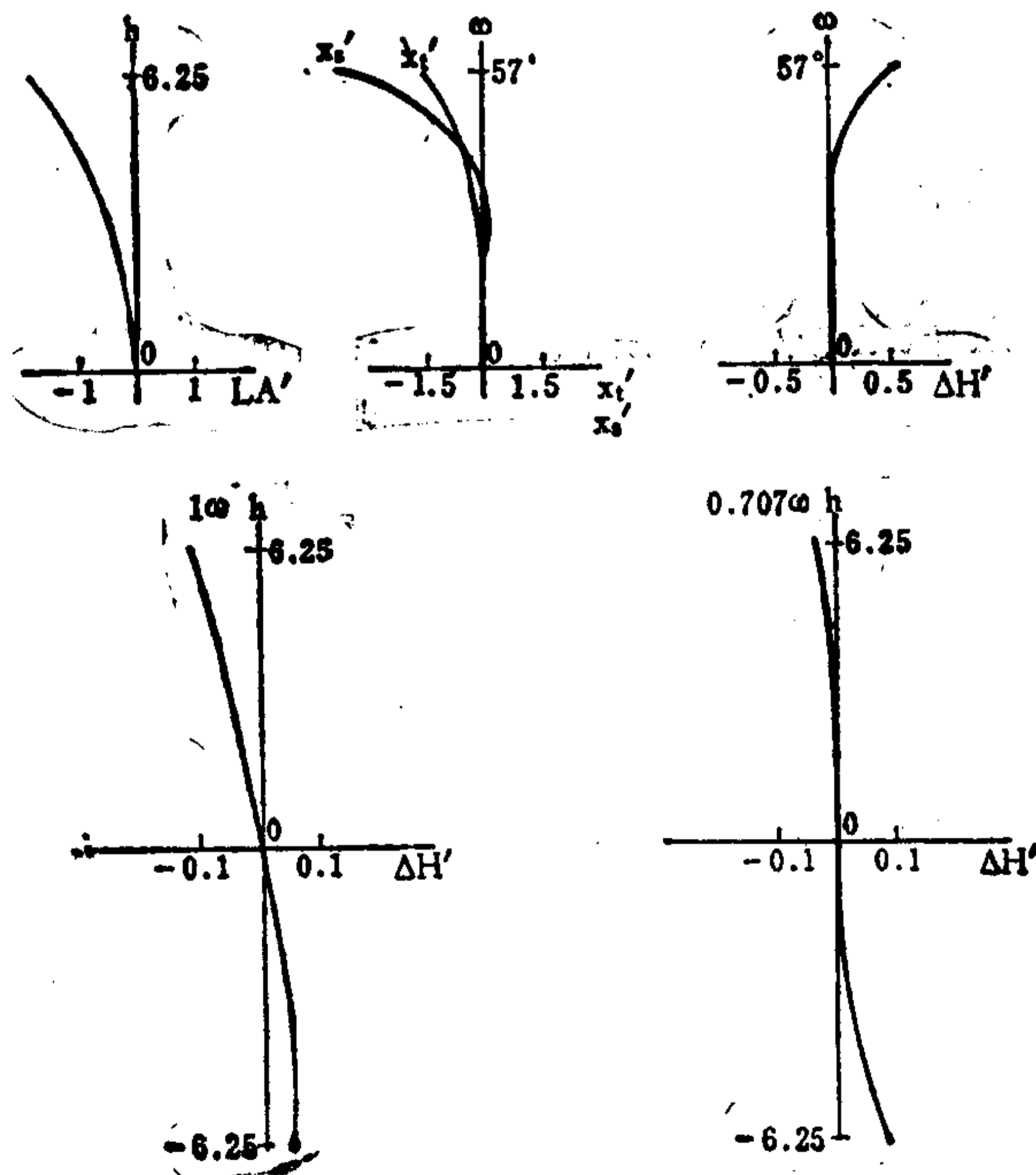
E.F.L=100.9 B.F.L=41 FNo.=8 F.A.=±57°\*\*



序号	r	d	nd	v	序号	r	d	nd	v
1	103.80	25.31	1.69651	55.6	8	101.00	28.00	1.7053	53.9
2	37.96	34.17			9	-69.85	29.61		
3	69.85	31.36	1.72952	36.6	10	-36.70	4.05	1.48744	70.0
4	-40.75	9.11	1.69823	31.1	11	-54.57	13.64		
5	20.78	6.83	1.71317	36.5	12	-43.96	6.33	1.48744	70.0
6	2842.00	0.30*			13	-71.72			
7	-2480.30	4.39	1.71079	29.7					

0.30\* = 0.15 + 0.15

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.01331	0.00059	-0.00716	0.01467	0.00732	155.4	0.3%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_i$	$x'_s$	$x'_i - x'_s$	$K'_{11}$	$K'_{T0.7}$
100	-1.862	0.536	-1.456	-3.743	2.287	-0.0285	-0.0139
70	-0.898	0.056	-0.399	-0.374	-0.025	0.0167	0.0085

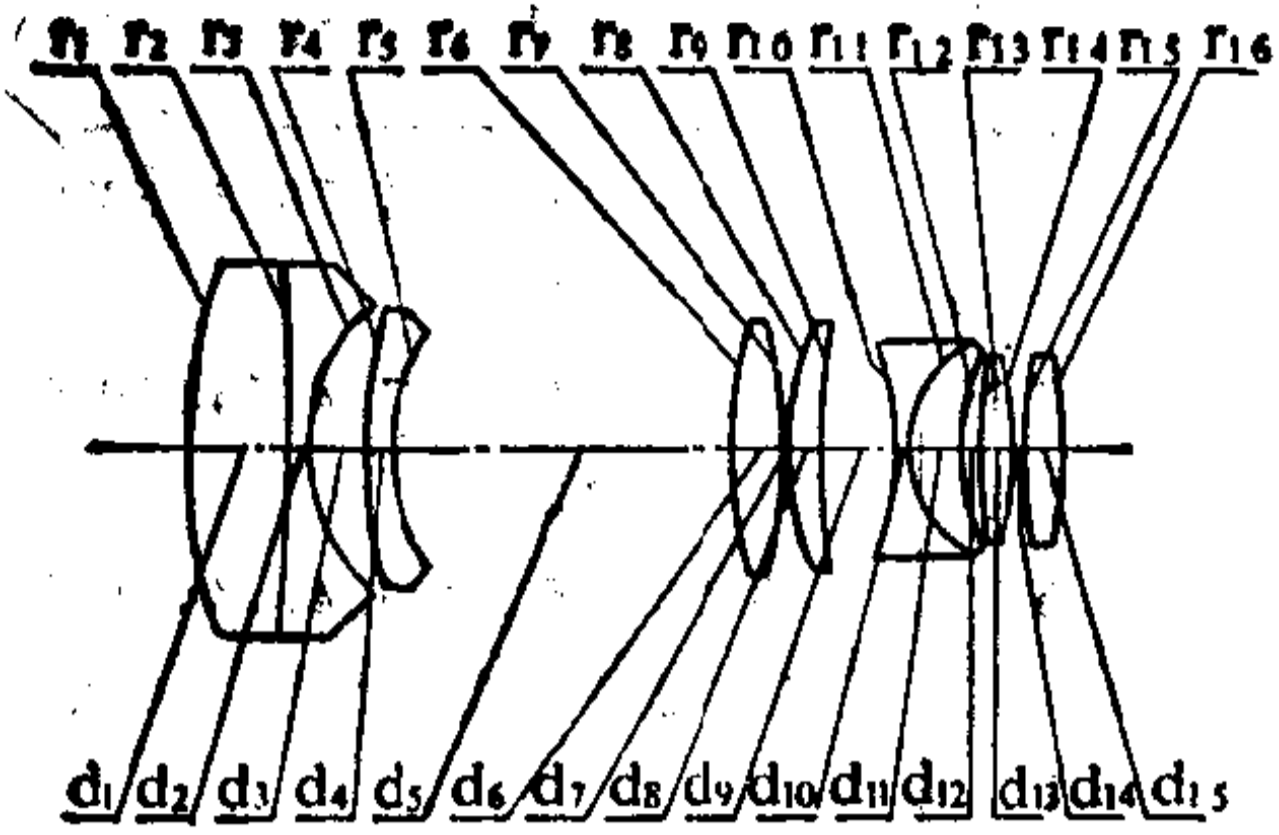




编号: 03-02-077

# 反 远 距 型 物 镜

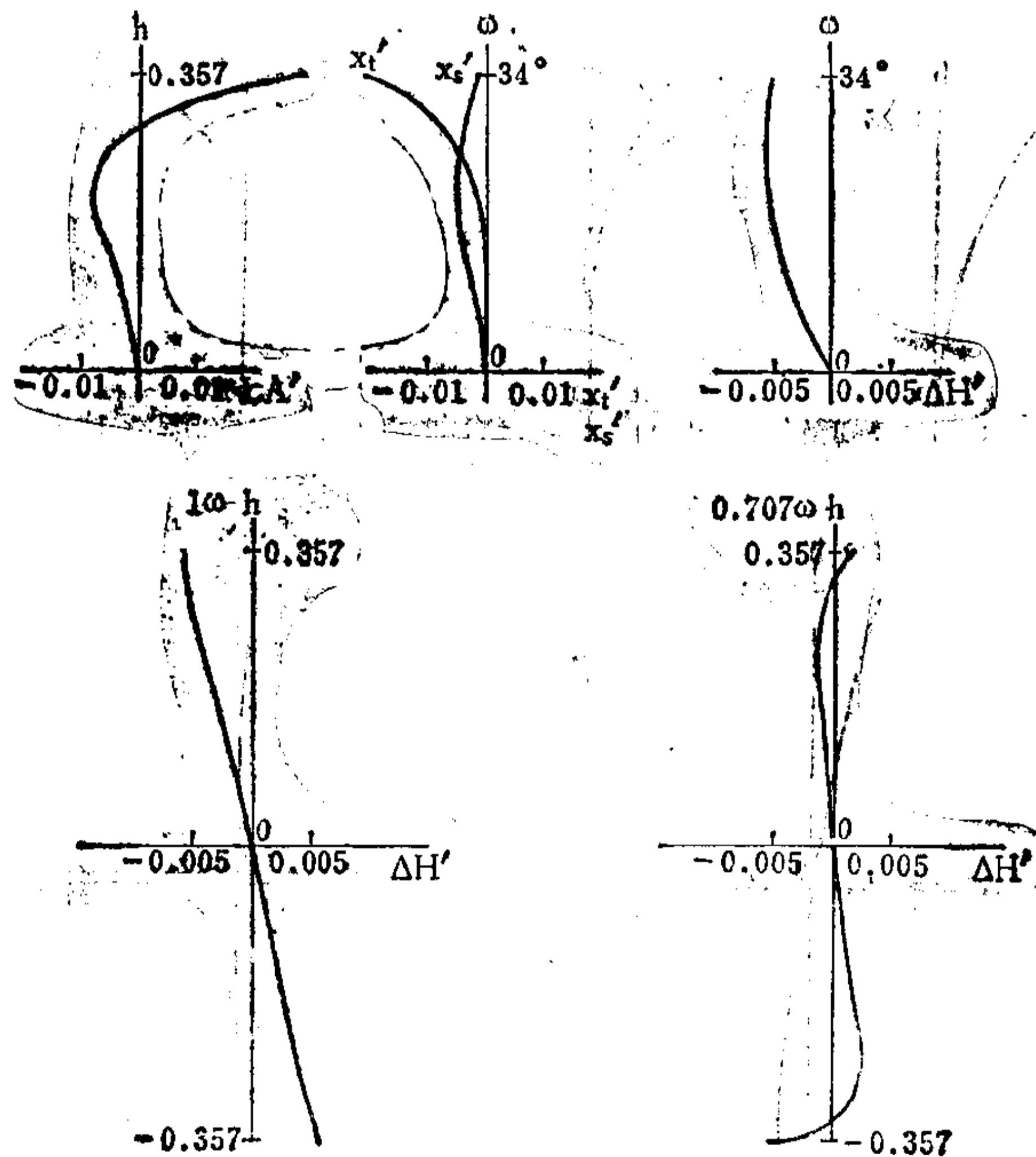
E.F.L=1 B.F.L=1.467 FNo.=1.4 E.A.=±34°



序号	r	d	n <sub>d</sub>	v	序号	r	d	n <sub>d</sub>	v
1	3.406	0.640	1.74900	35.00	9	7.090	0.461		
2	-21.854	0.148	1.50970	64.44	10	-1.737	0.083	1.70035	30.28
3	1.206	0.398			11	0.755	0.335	1.74900	35.00
4	4.371	0.140	1.70000	41.20	12	1.410	0.083*		
5	1.311	2.195			13	2.790	0.293	1.65100	58.60
6	3.015	0.315	1.57427	52.02	14	-1.737	0.004		
7	-3.015	0.006			15	3.406	0.252	1.63945	55.70
8	1.942	0.246	1.65100	58.60	16	-3.406			

0.083\* = 0.043 + 0.040

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.01005	0.00707	-0.00397	-0.00389	-0.00869	0.67	-0.8%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{11}$	$K'_{10.7}$
100	0.02855	-0.00532	-0.02192	-0.00145	-0.02047	-0.00022	-0.00055
70	-0.00726	-0.00615	-0.00247	-0.00452	-0.00205	-0.00162	-0.00064

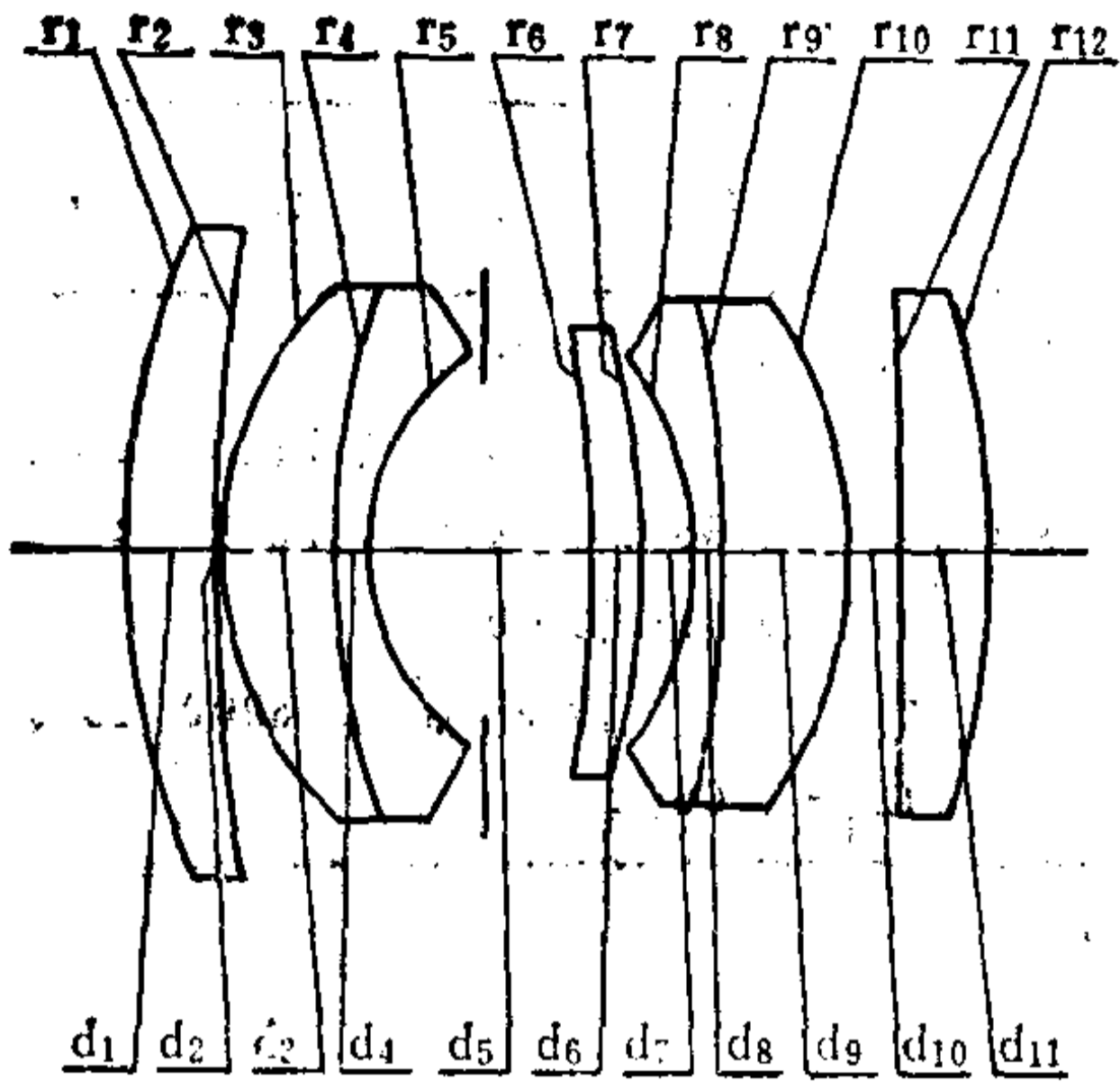




编号: 03-02-078

# 大孔径摄影物镜

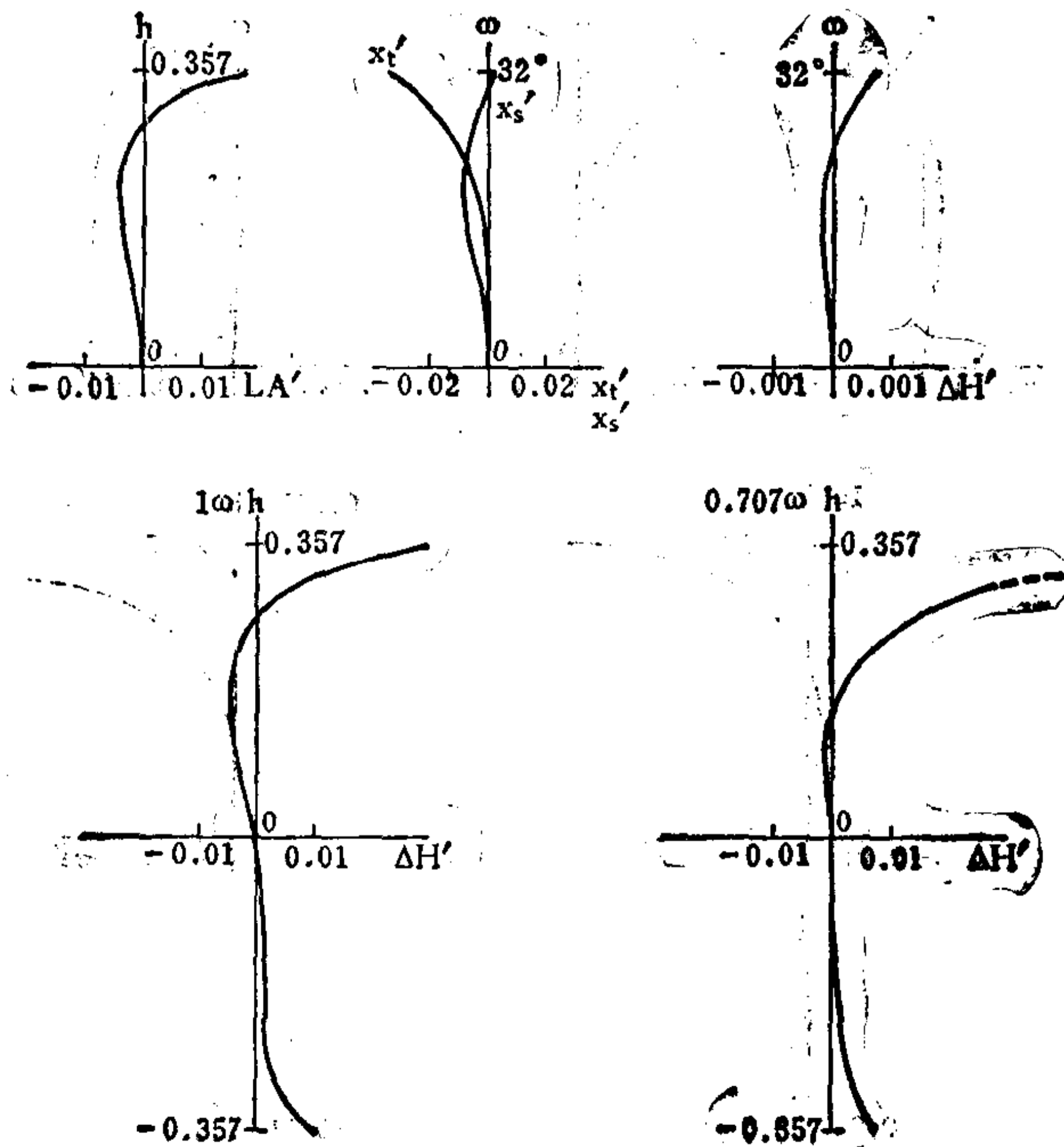
E.F.L=1    B.F.L=0.5462    FNo.=1.4    F.A.=±32°



序号	r	d	n <sub>e</sub>	v	序号	r	d	n <sub>e</sub>	v
1	0.84171	0.1000	1.72341	50.10	7	-0.8639	0.0494		
2	2.5689	0.0006			8	-0.3448	0.0374	1.76167	27.34
3	0.3812	0.1297	1.78990	48.0	9	-1.3714	0.1314	1.78990	48.0
4	0.8639	0.0374	1.70444	29.84	10	-0.4575	0.0171		
5	0.2552	0.2309*			11	-20.0000	0.1371	1.72056	47.59
6	-1.6077	0.0554	1.78990	48.0	12	-0.8417			

0.23090\* = 0.11545 + 0.11545

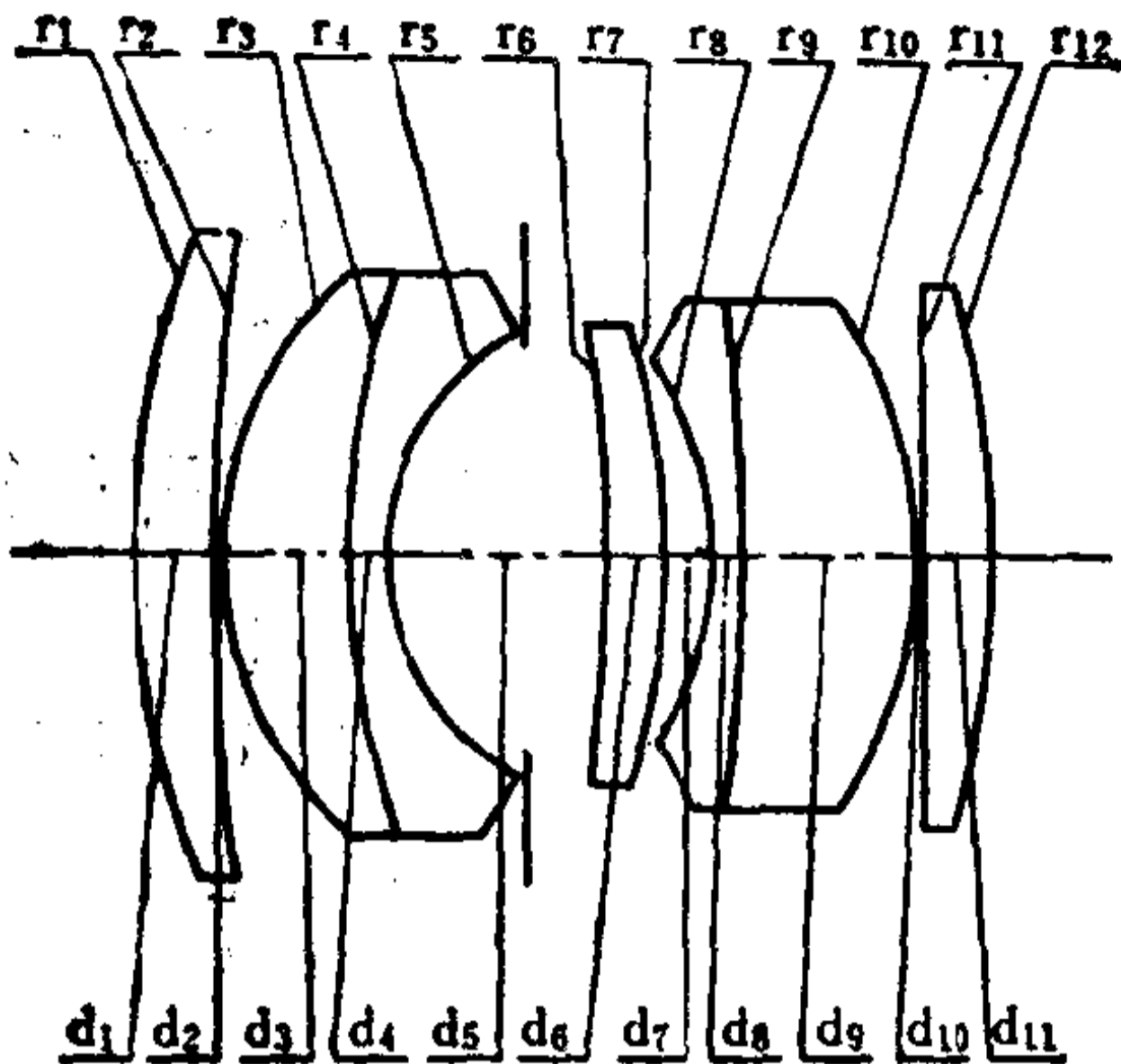
	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.00508	0.00041	0.00216	-0.00892	0.00011	0.63	0.12%
h或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{f1}$	$K'_{f0.7}$
100	0.0162	0.00076	-0.0351	0.0010	-0.0361	0.0201	-0.0008
70	-0.0036	-0.00004	-0.0072	-0.0084	0.0012	0.0781	0.0056



编号: 03-02-079

# 大孔径摄影物镜

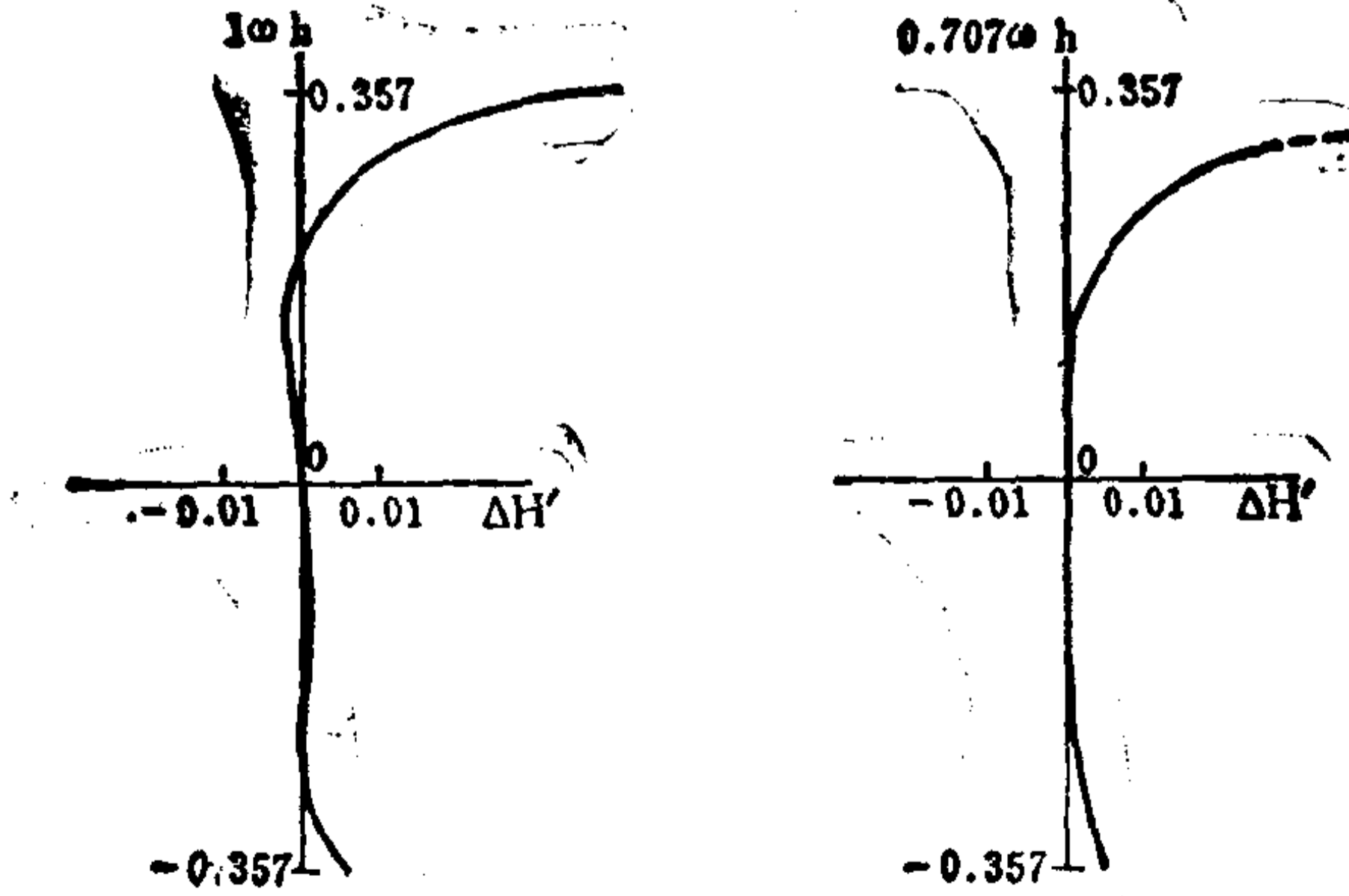
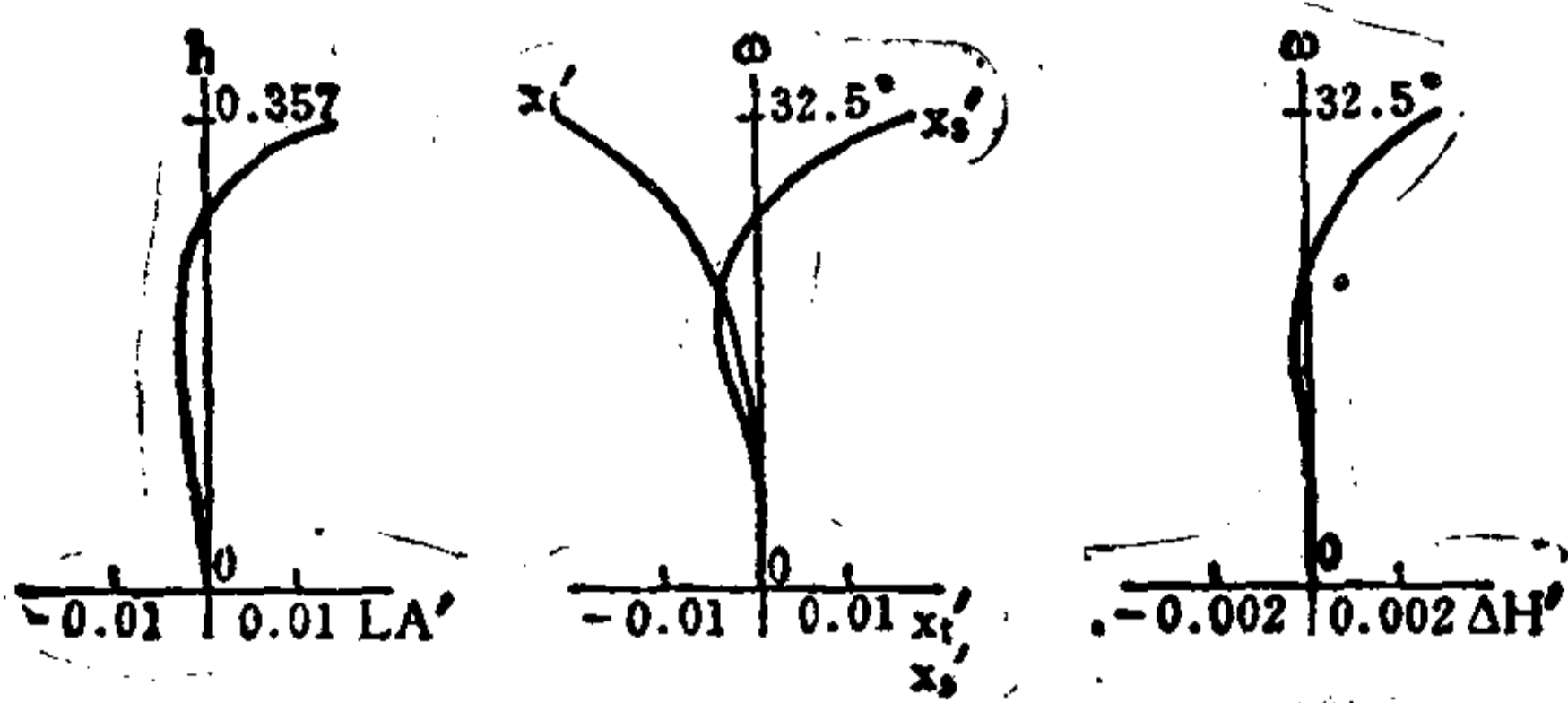
E.F.L=1.04 B.F.L=0.6116 FNo.=1.4 F.A.=±32.5°



序号	r	d	$n_d$	$v$	序号	r	d	$n_d$	$v$
1	0.8824	0.0894	1.72056	47.69	7	-0.8984	0.0514		
2	2.7880	0.0078			8	-0.3562	0.0388	1.76167	27.34
3	0.3996	0.1348	1.78990	48.0	9	-1.9892	0.1800	1.78990	48.0
4	0.8984	0.0388	1.70444	29.84	10	-0.4858	0.0078		
5	0.2654	0.2400*			11	$\infty$	0.0756	1.78990	48.0
6	-1.6720	0.0576	1.78990	48.0	12	-1.0658			

0.2400\* = 0.1200 + 0.1200

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
误差	-0.00352	0.00030	0.00144	-0.00618	-0.00026	0.65	0.4%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_i$	$x'_s$	$x'_i - x'_s$	$K'_{F1}$	$K'_{F0.7}$
100	0.0153	0.0029	-0.0223	0.0175	-0.0398	0.0237	0.0009
70	-0.0019	-0.000009	-0.0047	-0.0032	0.0015	0.0511	0.0055



编号: 03-02-080

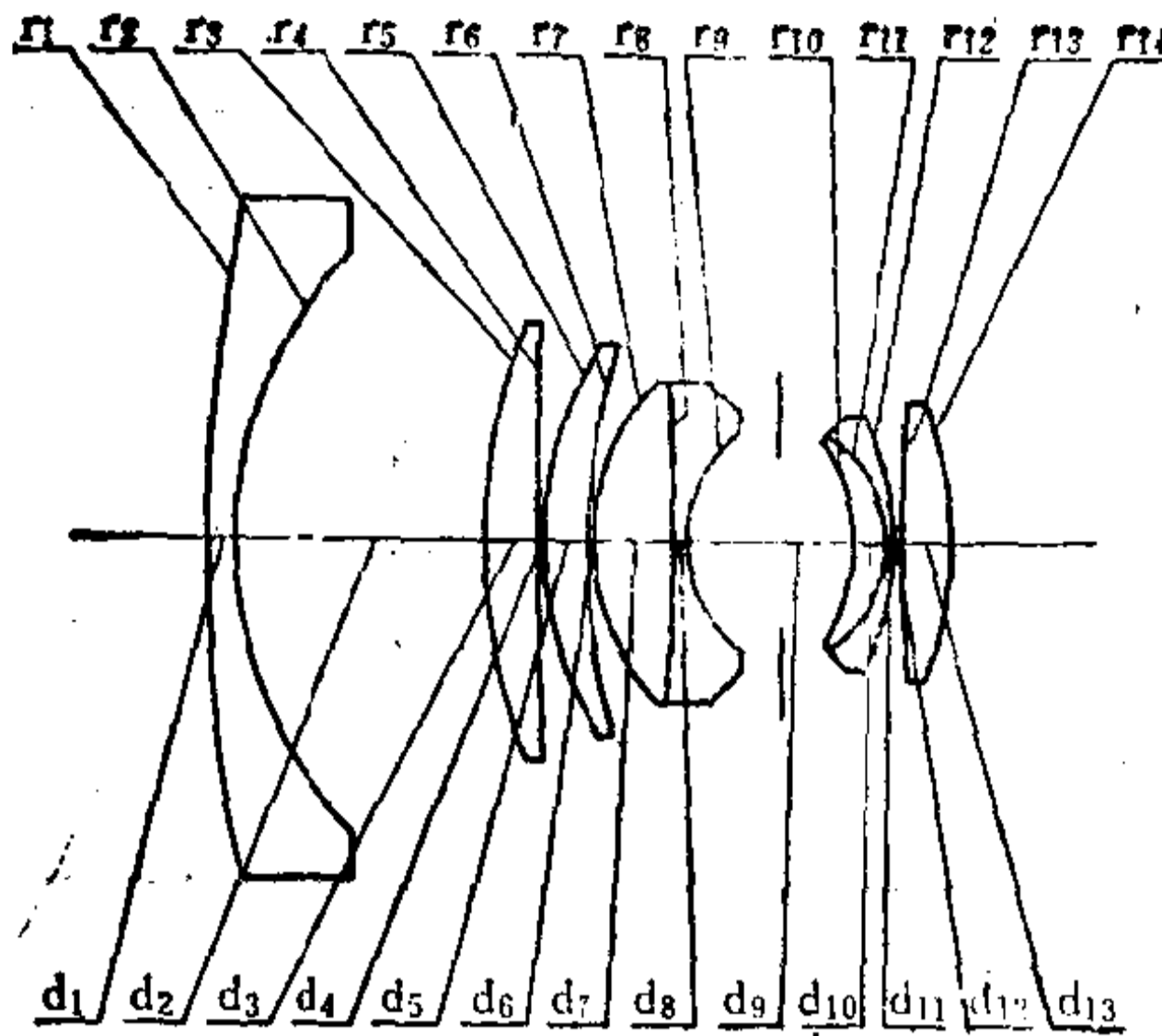
# 广 角 物 镜

E. F. L = 100

B. F. L = 71.3

FNo. = 2

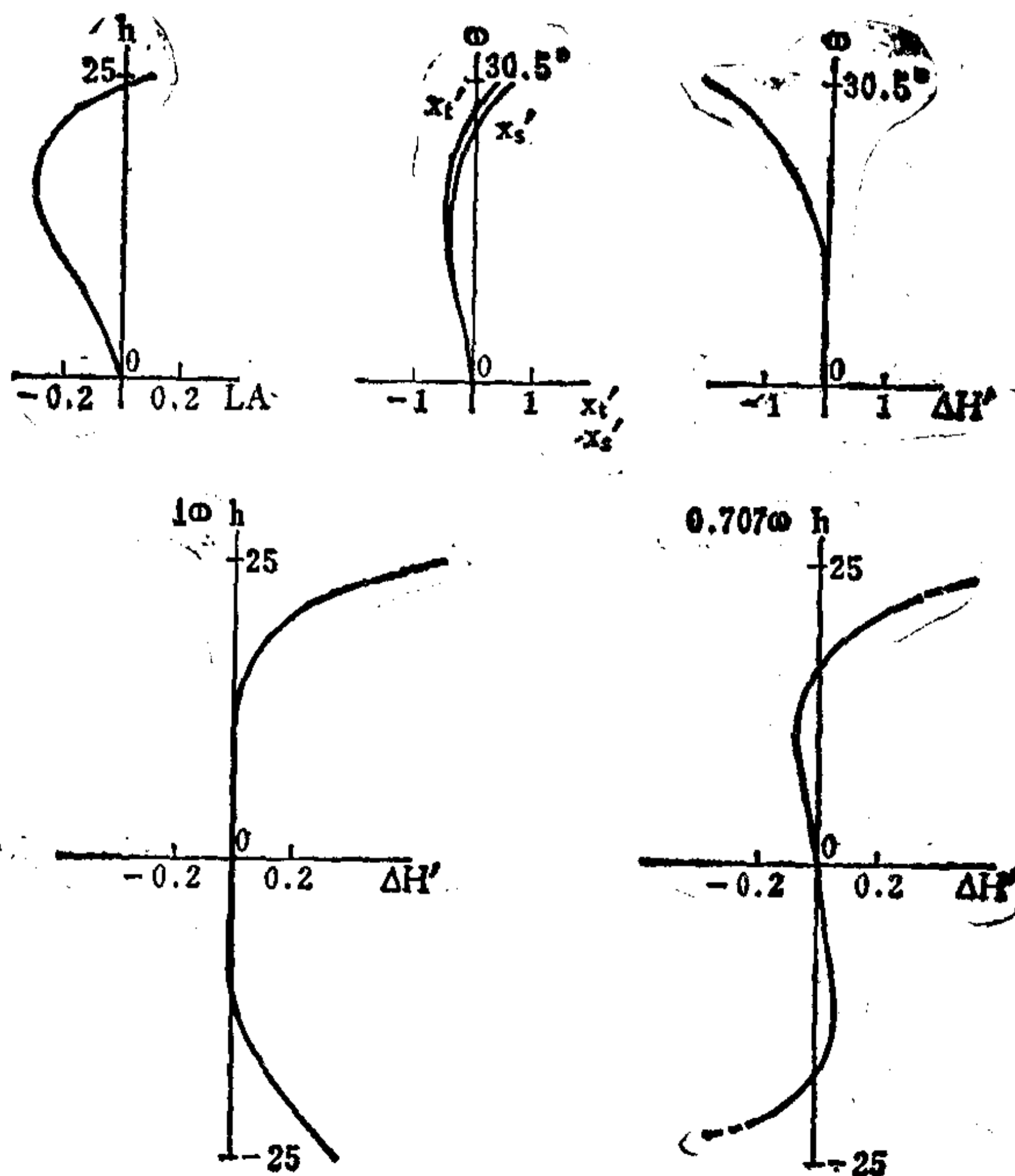
F. A. =  $\pm 30.5^\circ$



序号	r	d	nd	v	序号	r	d	nd	v
1	314.2040	4.9840	1.56017	61.00	8	-364.0050	2.6564	1.64838	33.86
2	73.4716	44.7510			9	24.5256	28.6548*		
3	107.5050	7.9429	1.56296	50.90	10	-32.1529	5.9440	1.55262	63.30
4	911.5890	0.2367			11	-21.9218	1.6964	1.53232	48.90
5	56.3365	8.9423	1.67050	47.59	12	-42.9625	0.2236		
6	126.5600	0.1315			13	259.4580	9.0344	1.50476	66.94
7	39.9774	14.9126	1.67811	55.58	14	-67.8563			

$28.6548^* = 15.6490 + 13.0058$

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.1798	-0.0234	-0.0486	-0.1446	-0.3493	58.6	-3.8%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{T1}$	$K'_{T0.7}$
100	0.083	-2.247	0.378	0.635	-0.257	0.522	0.086
70	-0.328	-0.493	-0.522	-0.355	-0.167	-0.000	-0.000



编号: 03-02-081

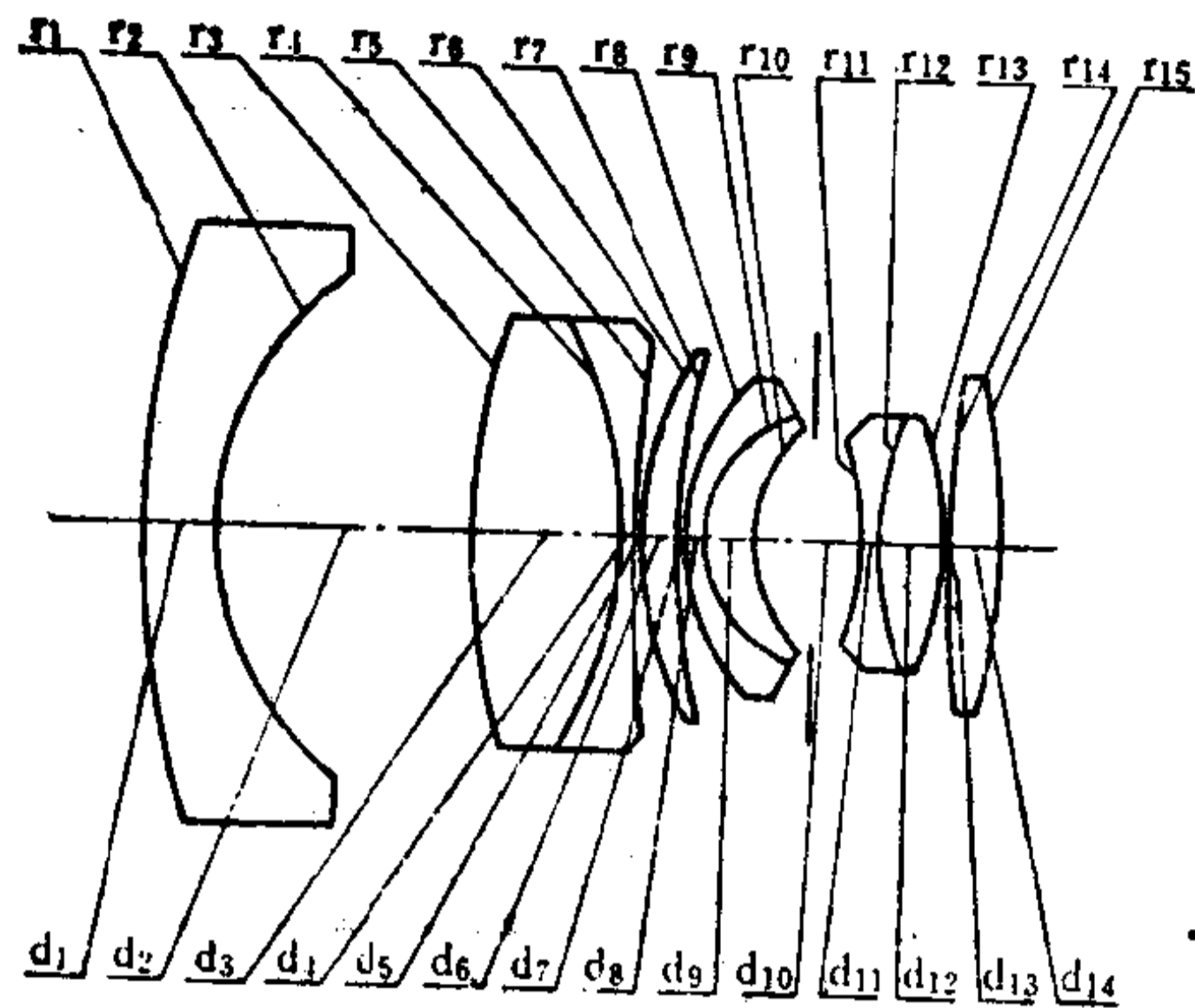
# 广角物镜

E.F.L=0.088

B.F.L=0.832

FNo.=2

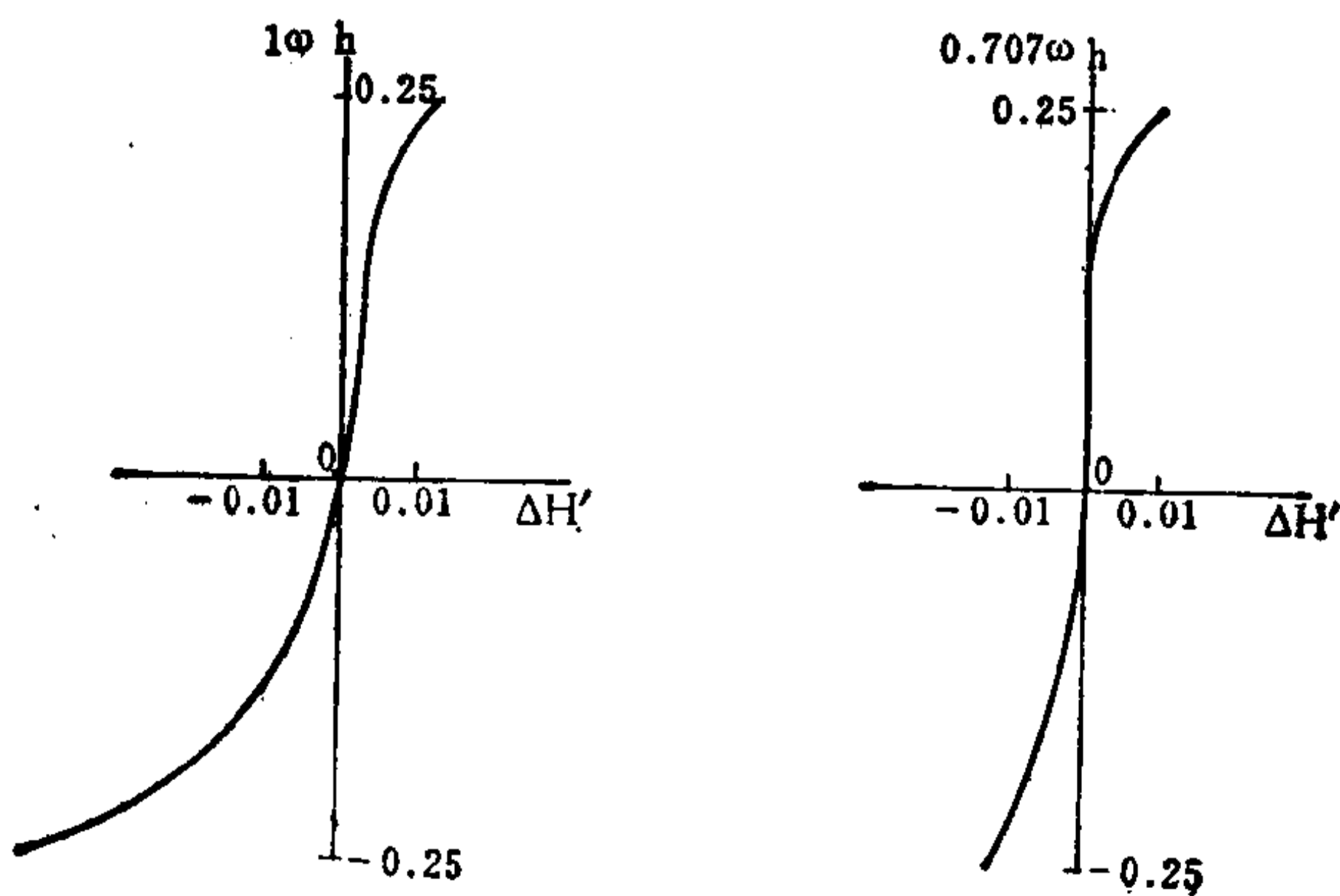
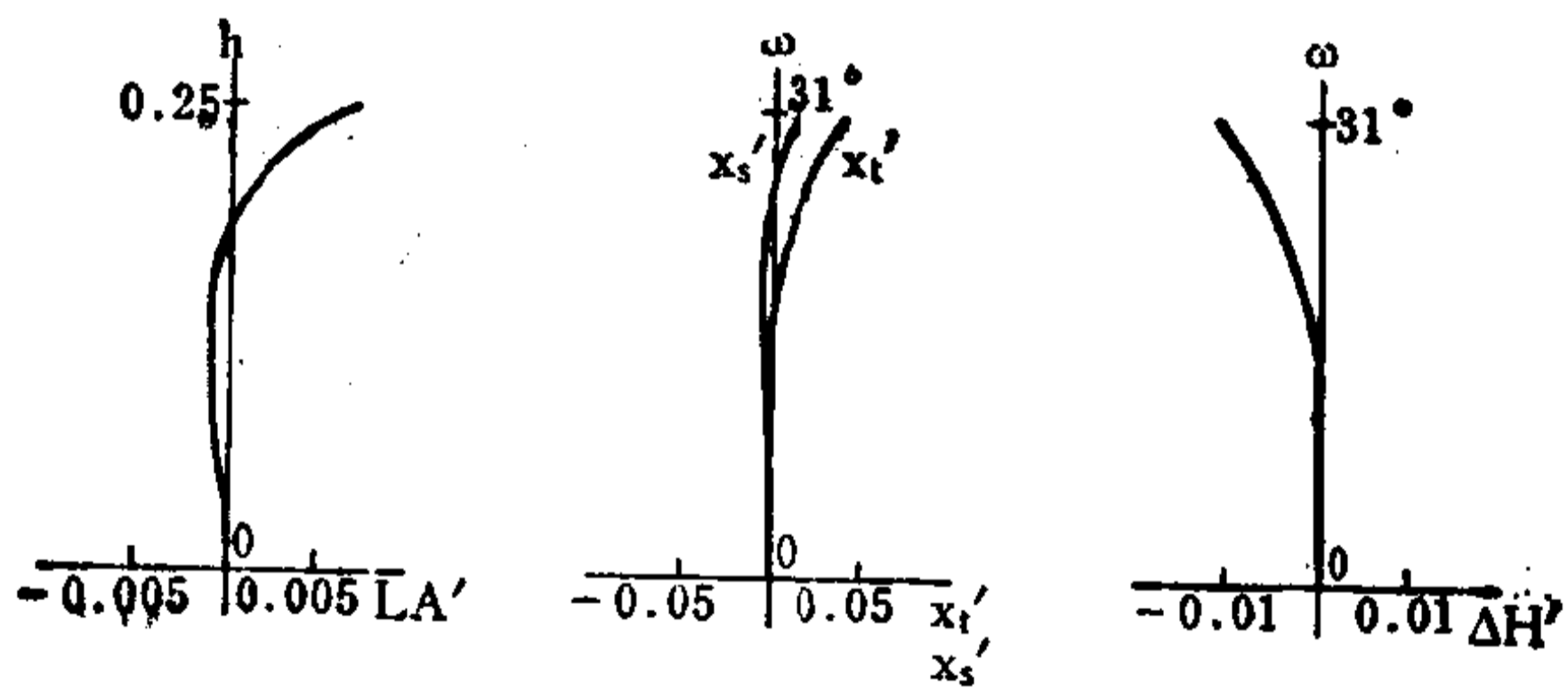
F.A.=±31°



序号	r	d	n	v	序号	r	d	n	v
1	1.70	0.14	1.50	67	9	0.25	0.10	1.61	59
2	0.60	0.48			10	0.31	0.19*		
3	1.20	0.23	1.69	54	11	-0.60	0.04	1.60	38
4	-0.80	0.03	1.57	51	12	0.60	0.12	1.59	61
5	2.90	0.01			13	-0.65	0.01		
6	0.70	0.07	1.71	54	14	3.30	0.09	1.71	34
7	1.30	0.01			15	-1.50			
8	0.43	0.03	1.60	38					

0.19\* = 0.13 + 0.06

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.00082	-0.00127	0.00106	-0.00320	-0.00279	0.594	-1.9%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{f1}$	$K'_{f0.7}$
100	0.00632	-0.0112	0.0381	0.0120	0.0261	-0.0145	-0.0057
70	-0.00083	-0.0029	0.0074	-0.0039	0.0113	-0.0009	-0.0025



编号: 03-02-082

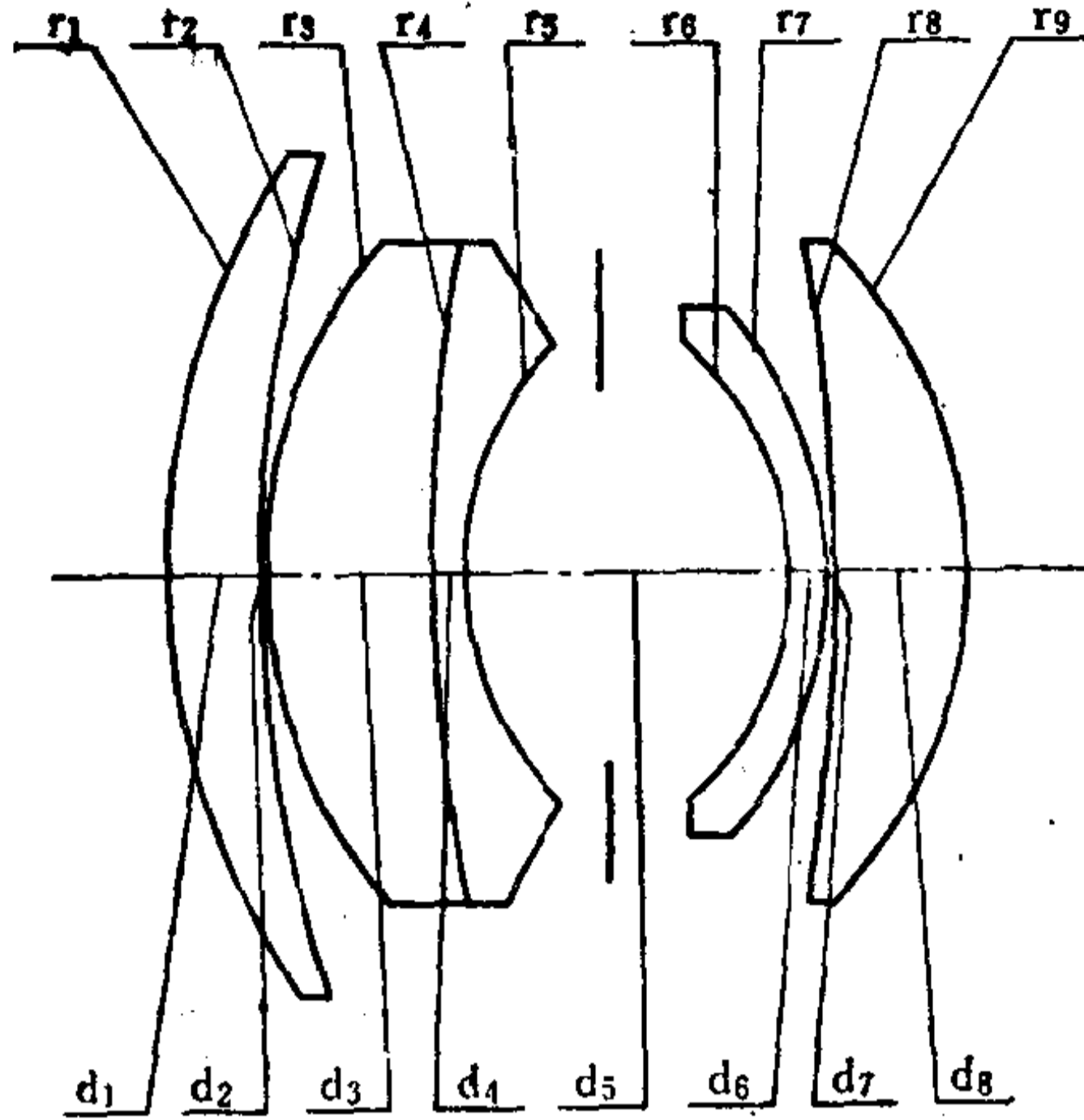
# 改进的高斯型五片式摄影镜头

E.F.L=100.7

B.F.L=78.3

FNo.=2.8

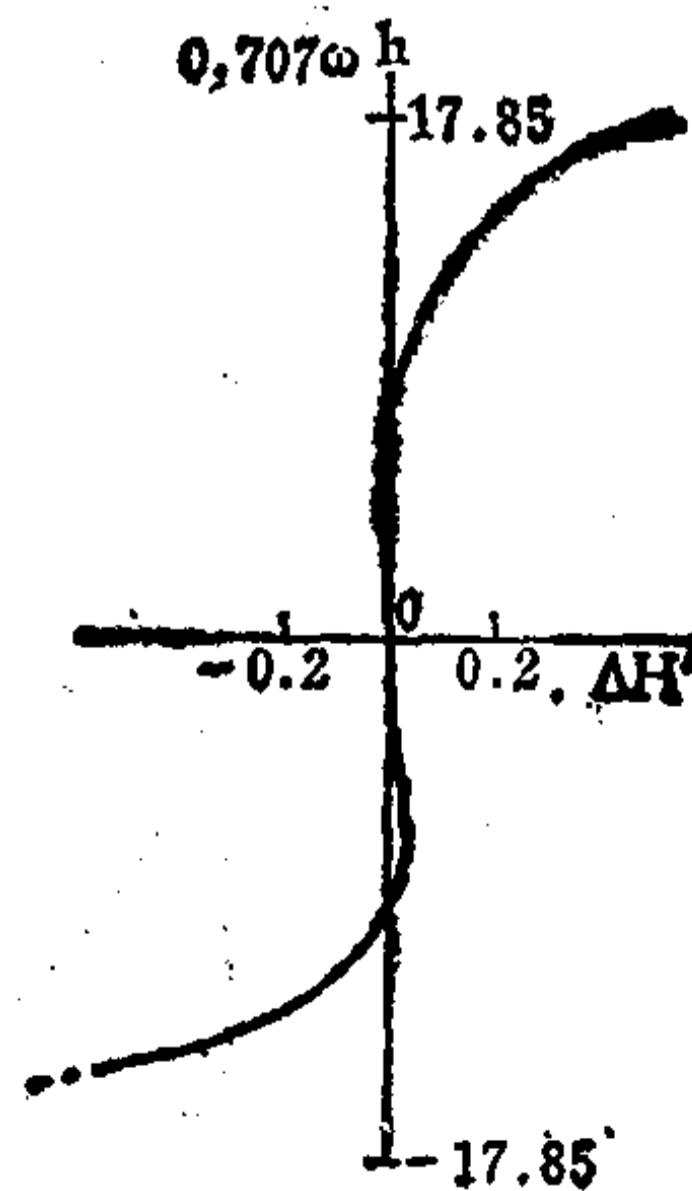
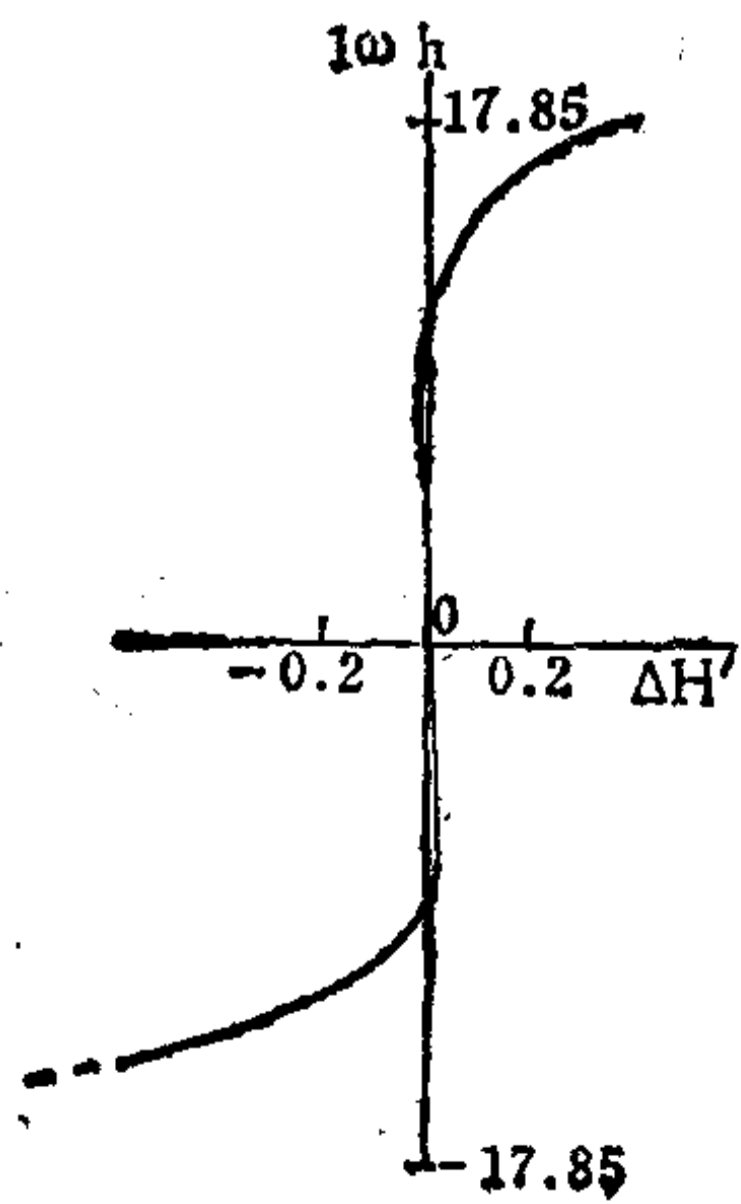
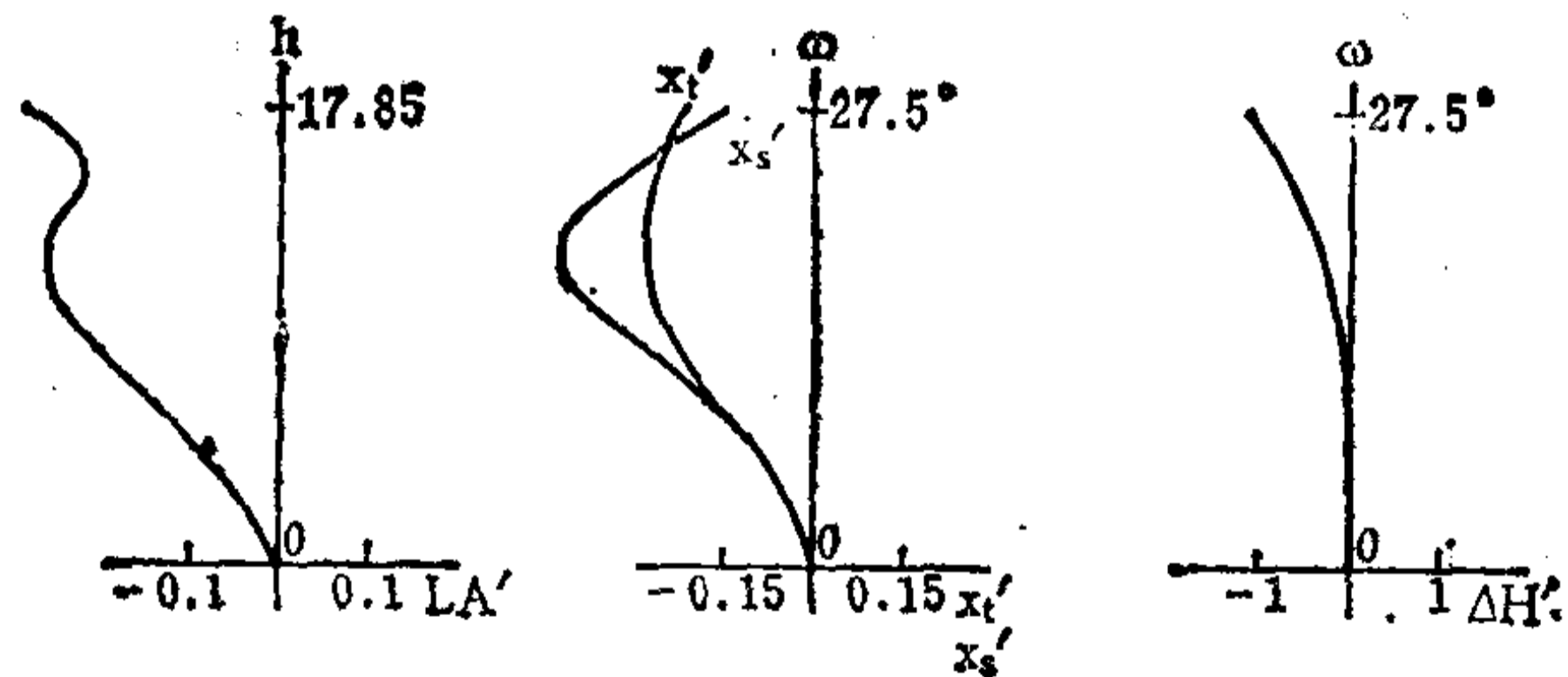
F.A.=±27.5°



序号	r	d	$n_d$	$v$	序号	r	d	$n_d$	$v$
1	45.8	5.50	1.6668	33.1	6	-18.3	2.40	1.7283	28.3
2	83.0	0.12			7	-24.3	0.12		
3	30.6	9.80	1.6935	53.5	8	-123.0	7.80	1.6204	60.3
4	109.2	2.10	1.6889	31.1	9	-28.0			
5	19.8	19.40*							

19.40\* = 9.70 + 9.70

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.0785	0.0243	0.0118	-0.1057	-0.1867	52.5	-2.2%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_s$	$x'_s$	$x'_i - x'_s$	$K'_{T1}$	$K'_{T0.7}$
100	-0.291	-1.166	-0.255	-0.144	-0.111	-1.509	-0.105
70	-0.270	-0.299	-0.298	-0.448	0.150	-0.932	-0.052



编号: 03-02-083

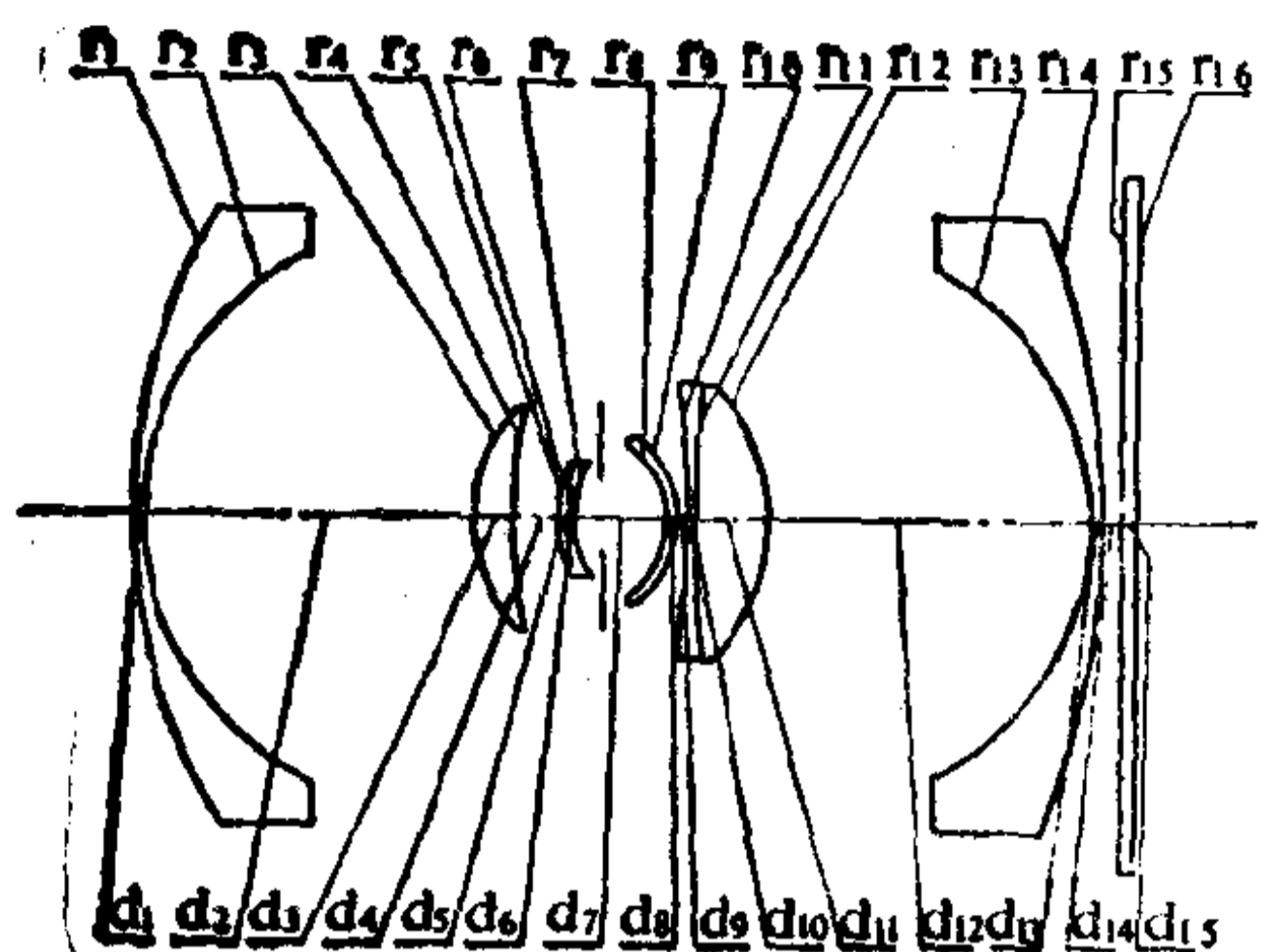
# 超广角镜头

E.F.L=1

B.F.L=0

FNo.=5.8

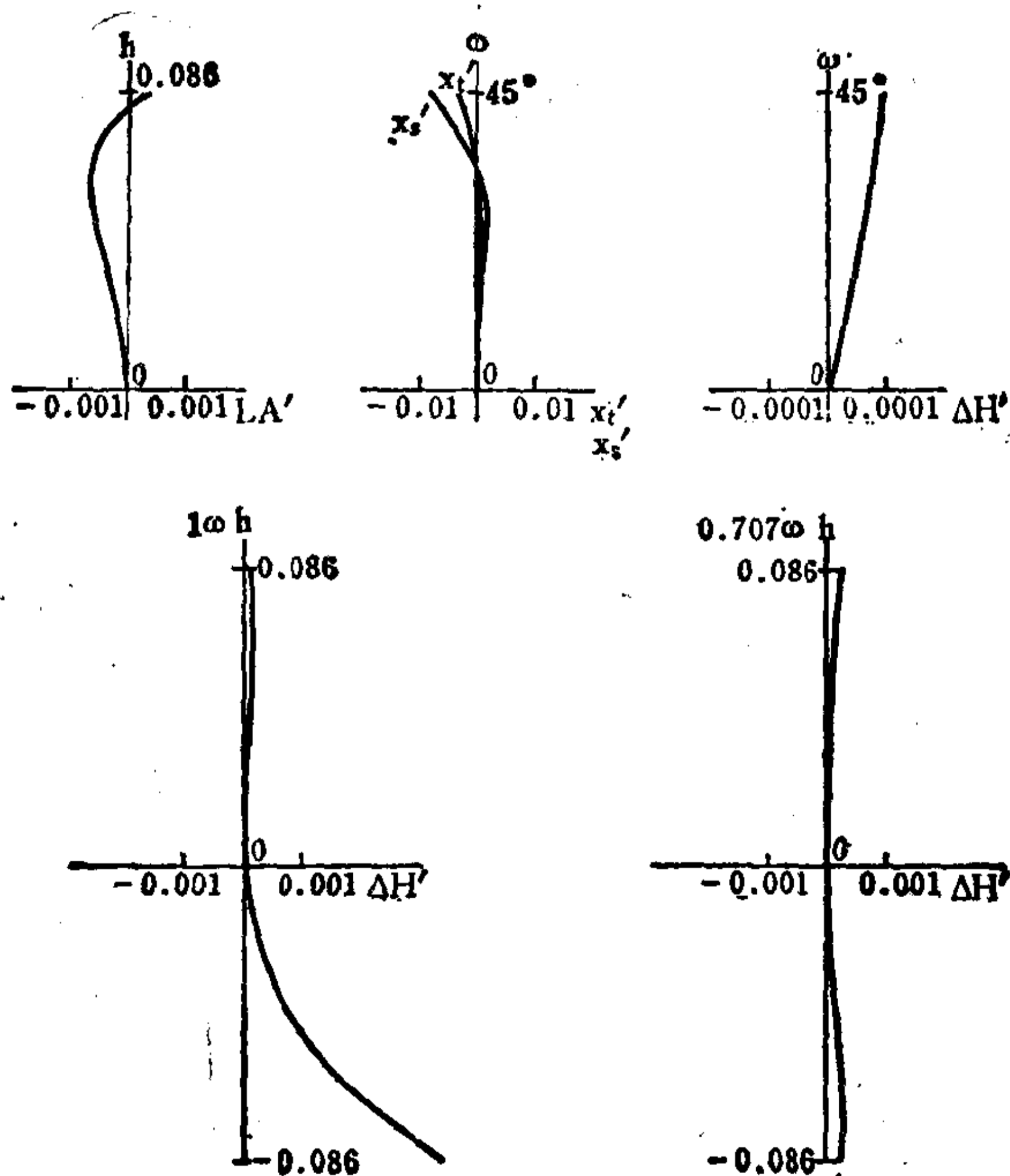
F.A.=±45°



序号	r	d	nd	v	序号	r	d	nd	v
1	1.5172	0.0341	1.700	56.2	9	-0.3050	0.0280		
2	0.7949	0.8965			10	-3.8944	0.0170	1.651	33.6
3	0.4485	0.1035	1.613	36.9	11	4.8691	0.2062	1.651	58.6
4	1.4801	0.1188			12	-0.5143	0.8640		
5	0.3500	0.0239	1.748	45.8	13	-0.7712	0.0343	1.720	50.3
6	0.9794	0.0128	1.748	27.8	14	-2.2429	0.0502		
7	0.2832	0.2457*			15	∞	0.0417	1.524	58.8
8	-0.2413	0.0202	1.801	25.5	16	∞			

0.2457\* = 0.1000 + 0.1457

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.000044	-0.000098	0.000011	0.000074	-0.000210	1	0.009%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{T1}$	$K'_{T0.7}$
100	0.00034	0.000095	-0.00350	-0.00785	0.00435	0.00180	0.00086
70	-0.00072	0.000078	0.00001	0.00002	-0.00003	0.000184	0.000156





编号: 03-02-084

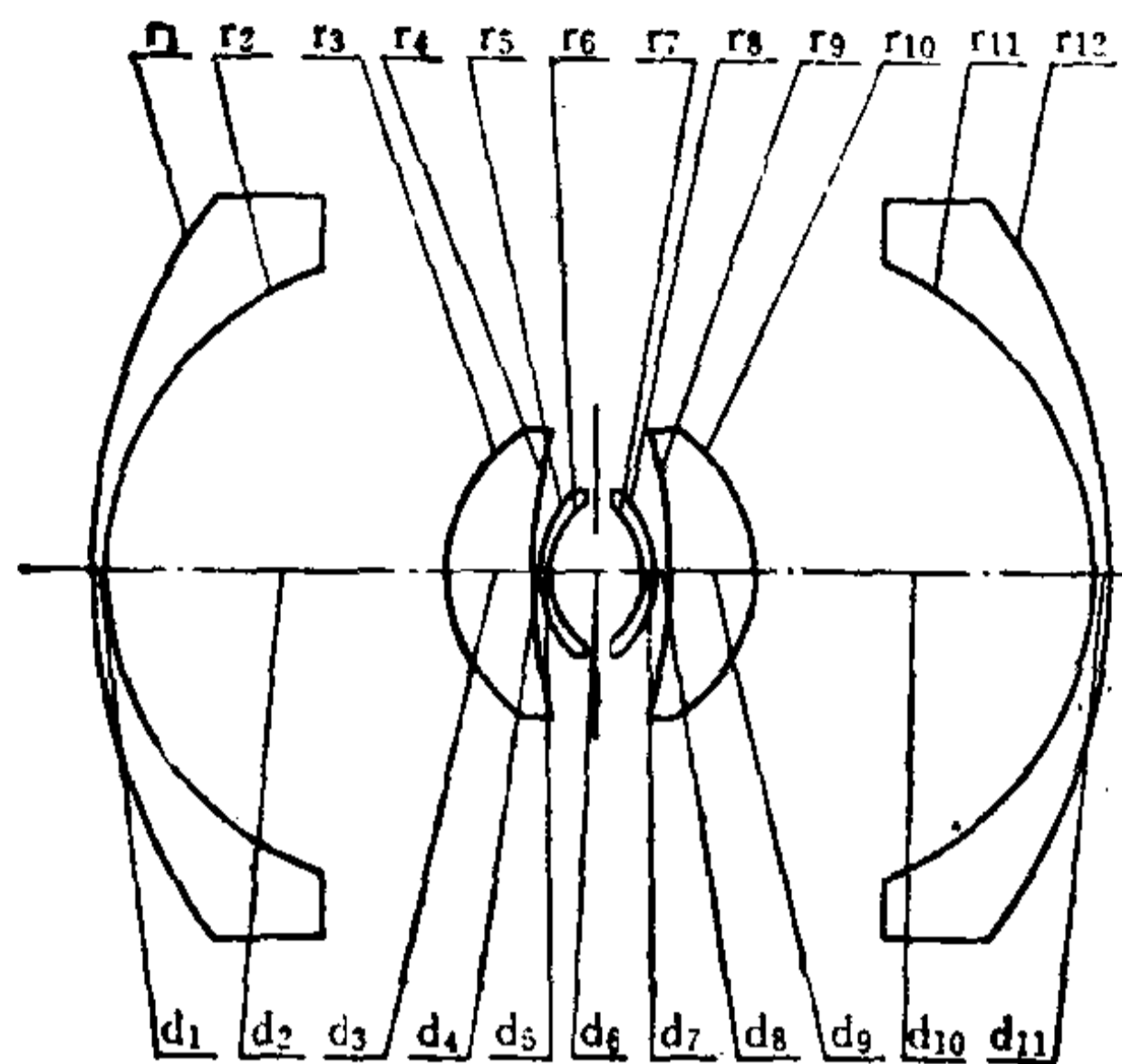
# 超 广 角 镜 头

E.F.L = 1

B.F.L = 0.1655

FNo. = 5.8

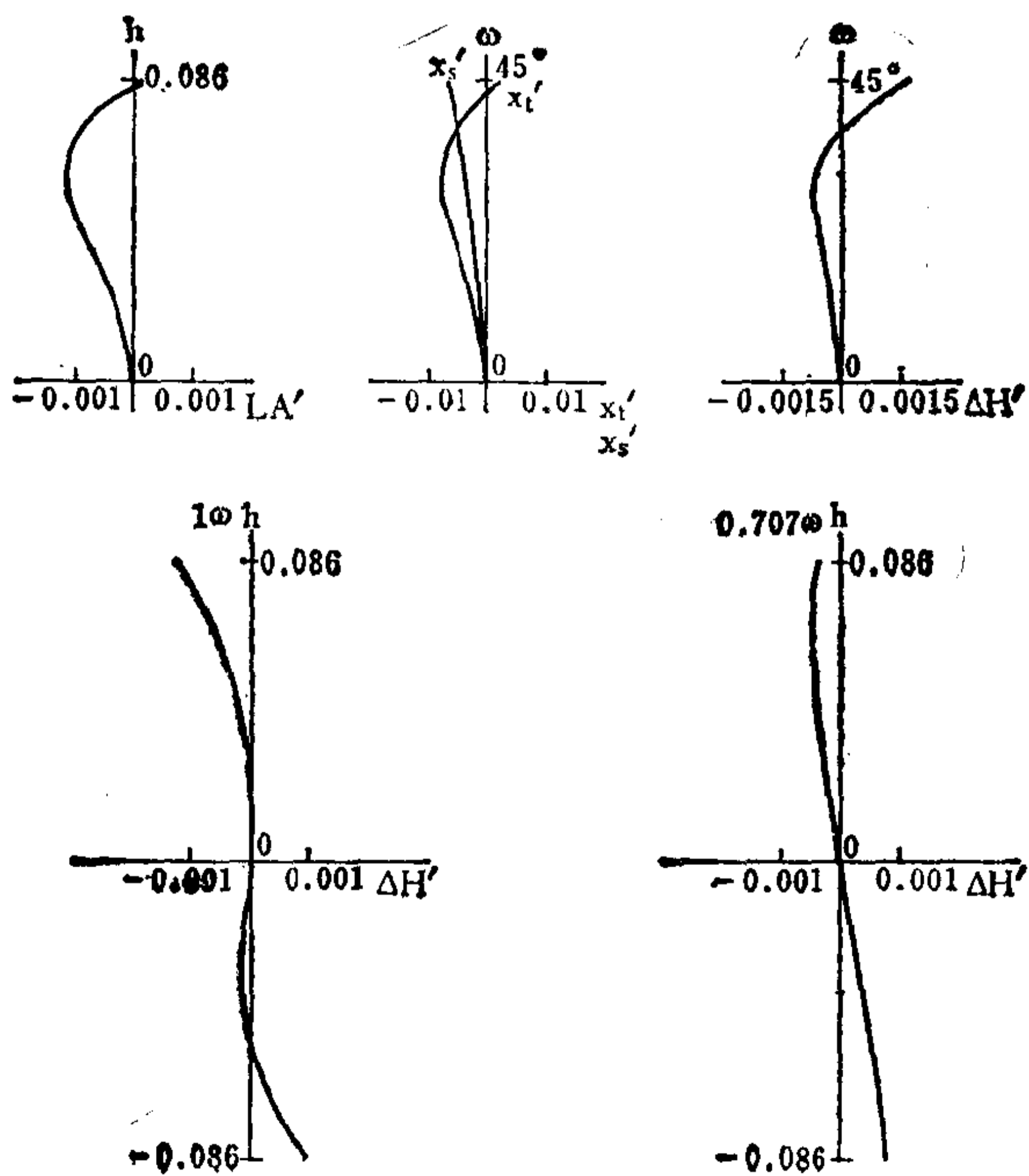
F.A. = ± 45°



序号	r	d	n <sub>D</sub>	v	序号	r	d	n <sub>D</sub>	v
1	1.51712	0.03408	1.700	56.2	7	-0.21875	0.02130	1.748	27.9
2	0.79484	0.81275			8	-0.26565	0.00102		
3	0.41764	0.20318	1.613	59.3	9	-1.29659	0.21553	1.651	58.6
4	1.21430	0.03216			10	-0.41553	0.80937		
5	0.27141	0.02130	1.748	27.9	11	-0.76831	0.03408	1.748	27.9
6	0.21875	0.23346*			12	-1.49349			

0.23346\* = 0.11673 + 0.11673

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.000071	0.000022	-0.000100	0.0000006	-0.000463	1	0.17%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{T1}$	$K'_{T0.7}$
100	0.00026	0.00173	0.00178	-0.00694	0.00872	-0.000056	-0.000125
70	-0.00121	-0.00073	-0.00852	-0.00356	-0.00496	0.000274	0.000063



编号: 03-02-085

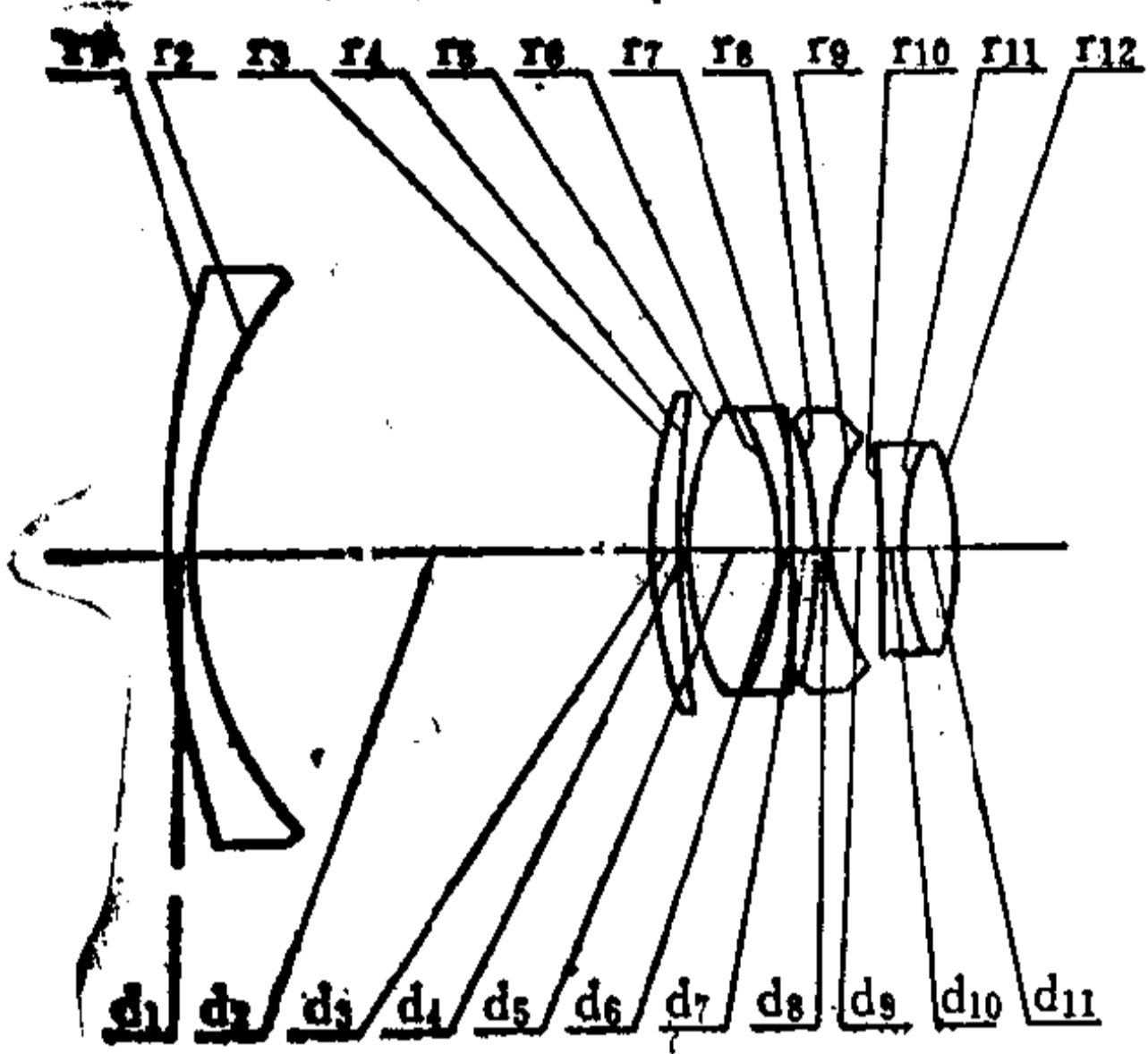
# 广角物镜

E.F.L = 1

B.F.L = 1

FNo. = 2.8

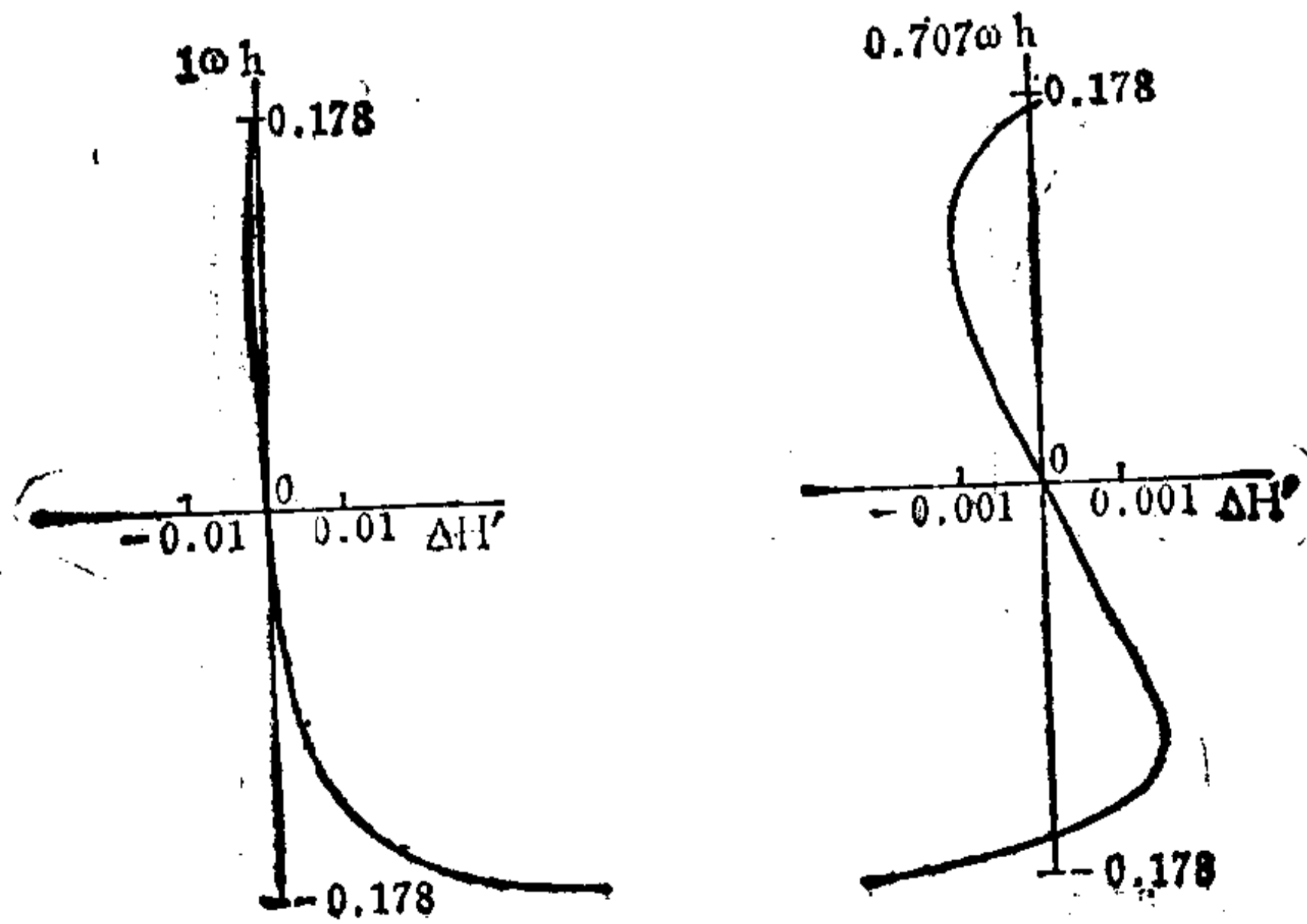
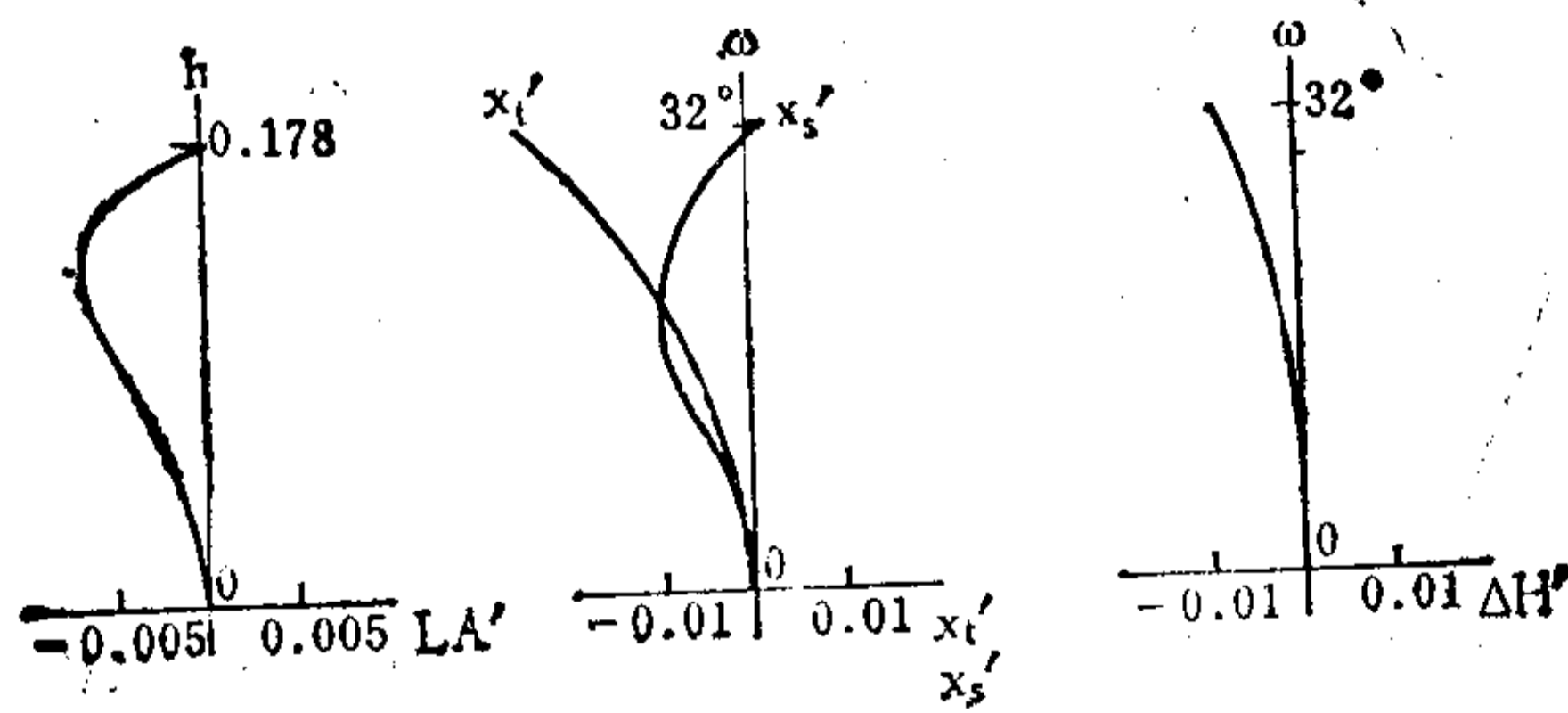
F.A. = ± 32°



序号	r	d	nd	v	序号	r	d	nd	v
1	2.034	0.045	1.60557	60.02	7	- 6.597	0.044		
2	0.936	1.001			8	- 0.970	0.040	1.62576	35.74
3	1.056	0.060	1.70000	41.18	9	0.463	0.107*		
4	3.200	0.006			10	- 12.730	0.051	1.62576	35.74
5	0.644	0.203	1.69100	54.8	11	0.567	0.105	1.69100	54.8
6	- 0.671	0.027	1.65100	58.6	12	- 0.650			

0.107\* = 0.057 + 0.050

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	- 0.00139	0.00039	- 0.00032	- 0.00153	- 0.00238	0.63	- 1.5%
h 或 $\omega$ %	LA'	$\Delta H'$	$x_t'$	$x_s$	$x_t' - x_s$	$K_{r1}'$	$K_{r0.7}'$
100	0.00026	- 0.00938	- 0.0264	0.0011	- 0.0275	0.02148	0.00191
70	- 0.00679	- 0.00320	- 0.0126	- 0.0094	- 0.0032	- 0.00099	0.00021



编号: 03-02-086

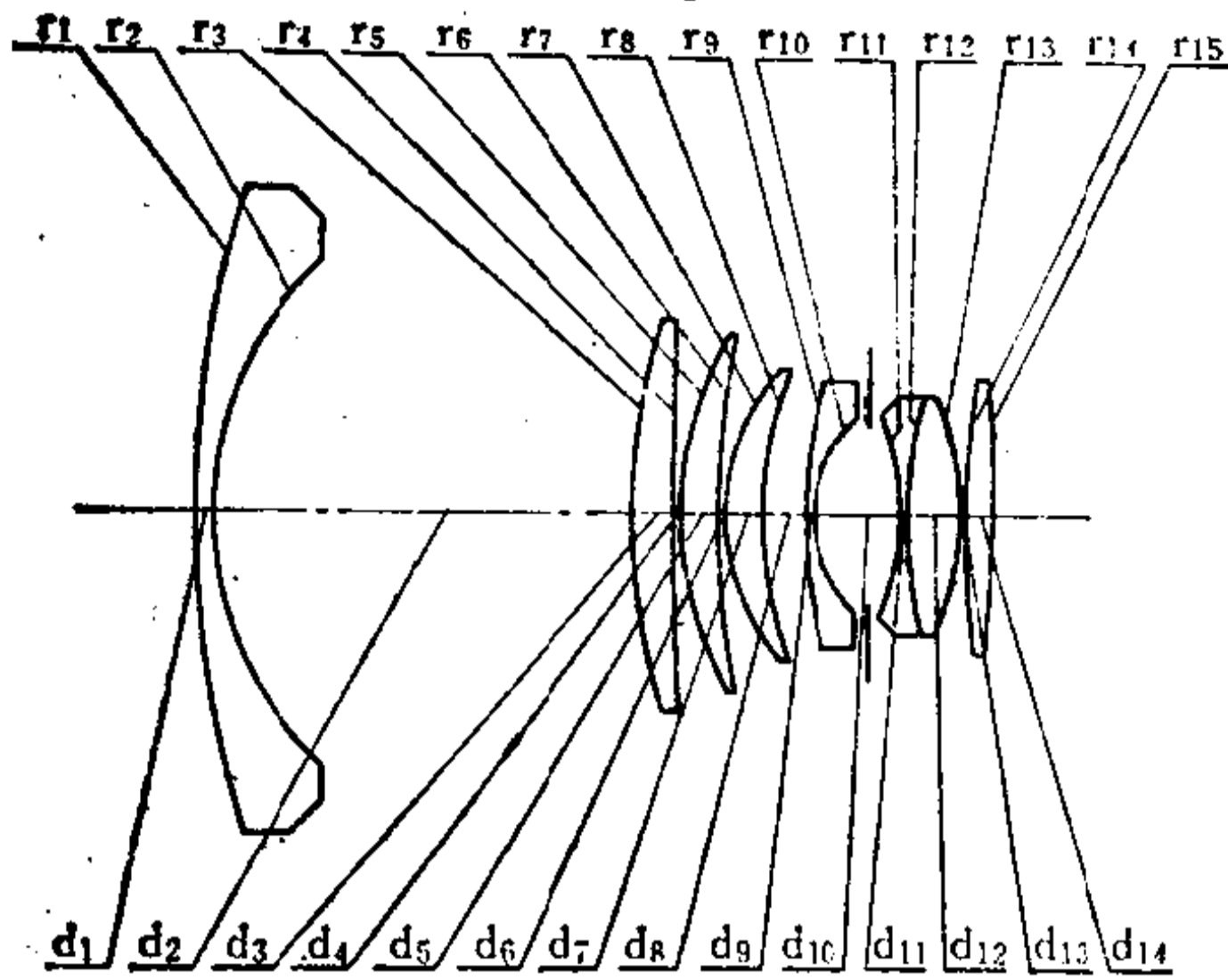
# 广角摄影物镜

E.F.L.=0.998

B.F.L.=0.955

FNo.=2

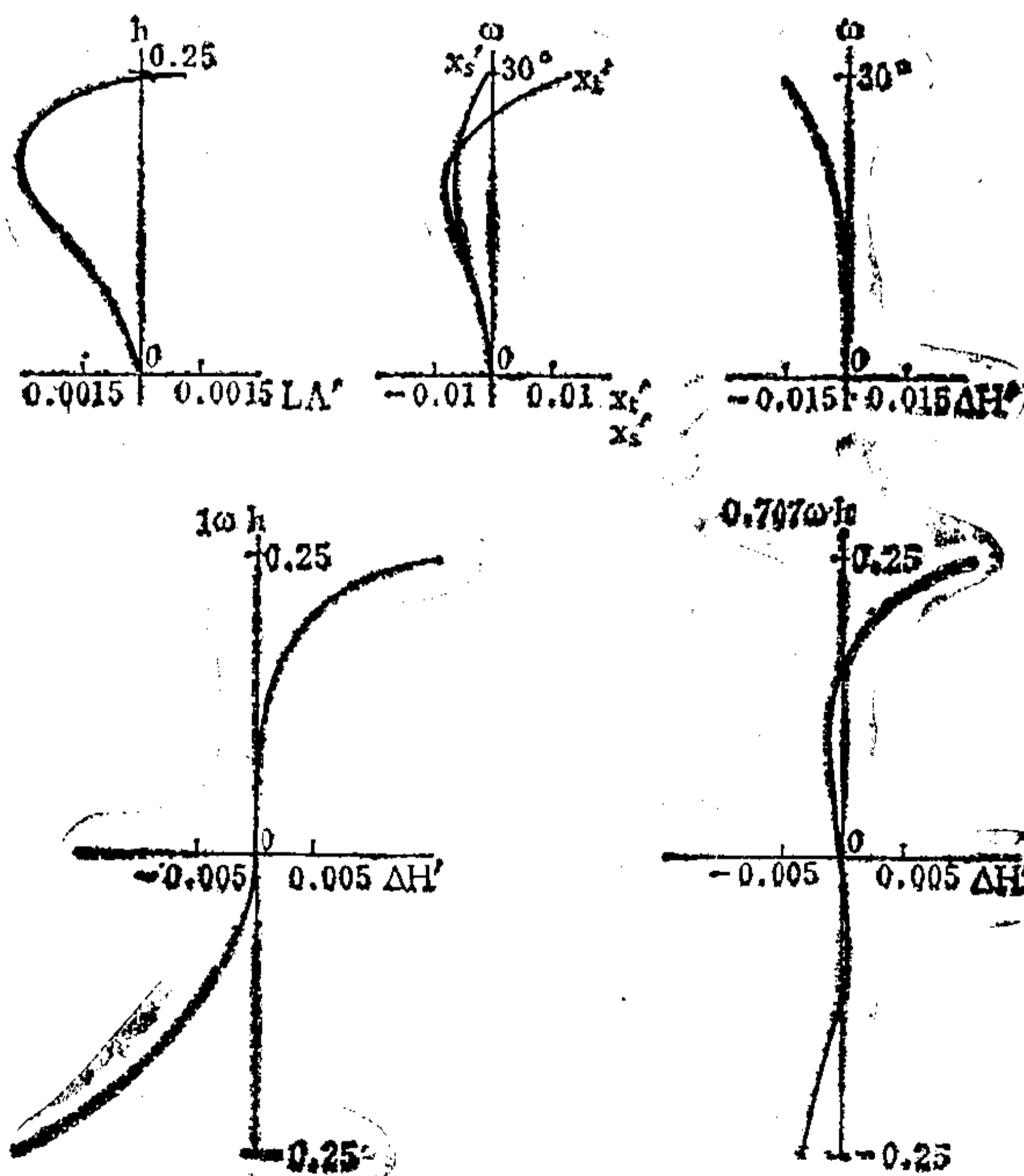
F.A.=±30°



序号	r	d	nd	va	序号	r	d	nd	va
1	2.378	0.044	1.6127	58.6	9	1.211	0.020	1.6254	35.6
2	0.846	1.021			10	0.357	0.209*		
3	1.634	0.099	1.6204	60.3	11	-0.625	0.020	1.6364	35.4
4	11.464	0.014			12	1.200	0.124	1.6968	55.61
5	0.885	0.094	1.6127	58.6	13	-0.729	0.005		
6	3.363	0.006			14	2.489	0.065	1.6968	55.61
7	0.556	0.107	1.6425	58.09	15	-2.945			
8	1.271	0.092							

0.209\* = 0.105 + 0.104

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.00131	-0.00045	-0.00075	-0.00199	-0.00462	0.58	-2.8%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_i$	$x'_s$	$x'_i - x'_s$	$K'_{T1}$	$K'_{T0.7}$
100	0.00106	-0.0162	0.0127	-0.0015	0.0142	-0.00271	-0.00362
70	-0.00321	-0.0046	-0.0084	-0.0074	-0.0010	0.00414	-0.00066



编号: 03-02-087

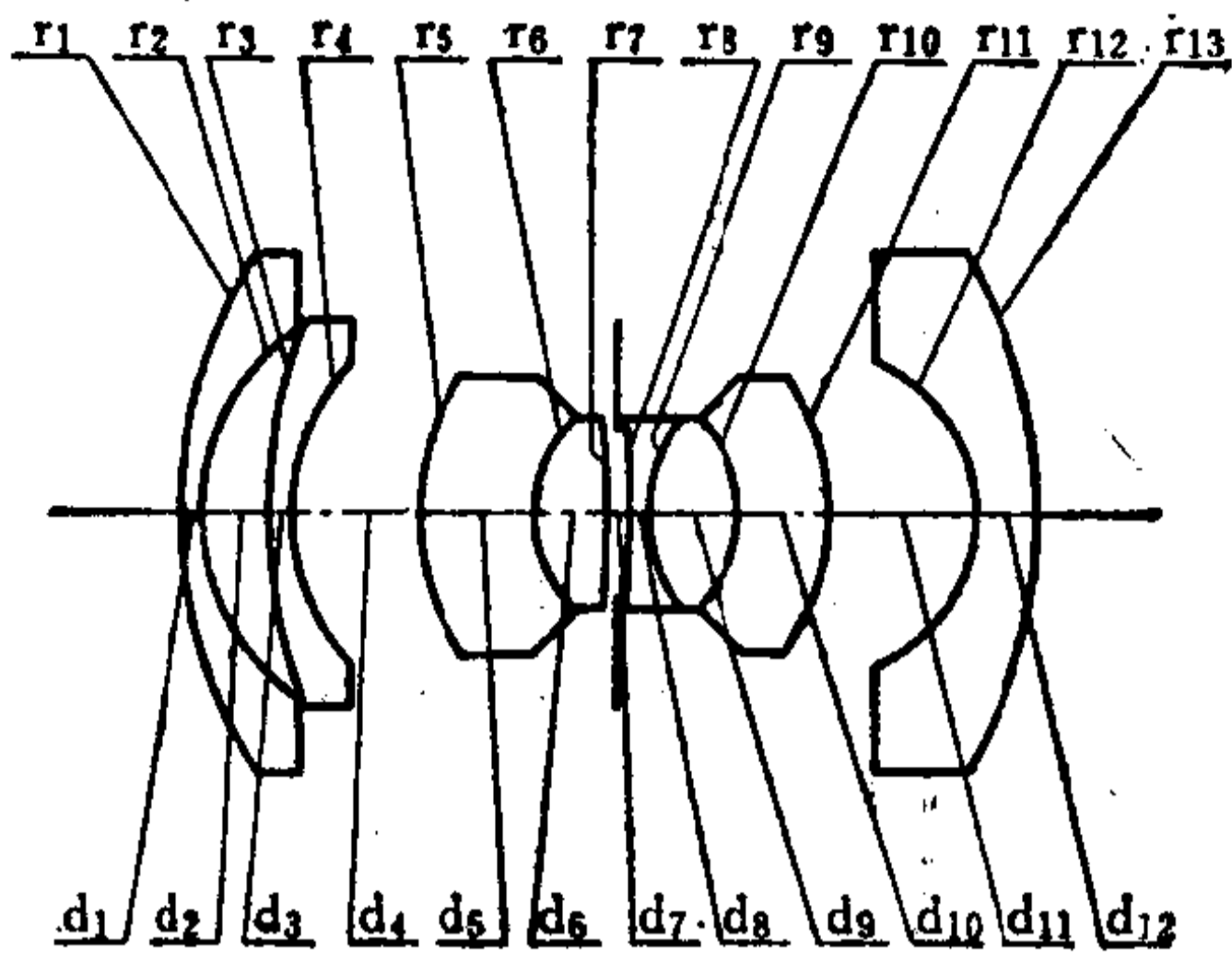
### 五组元超广角物镜

E.F.L = 99.94

B.F.L = 67.65

FNo. = 6.3

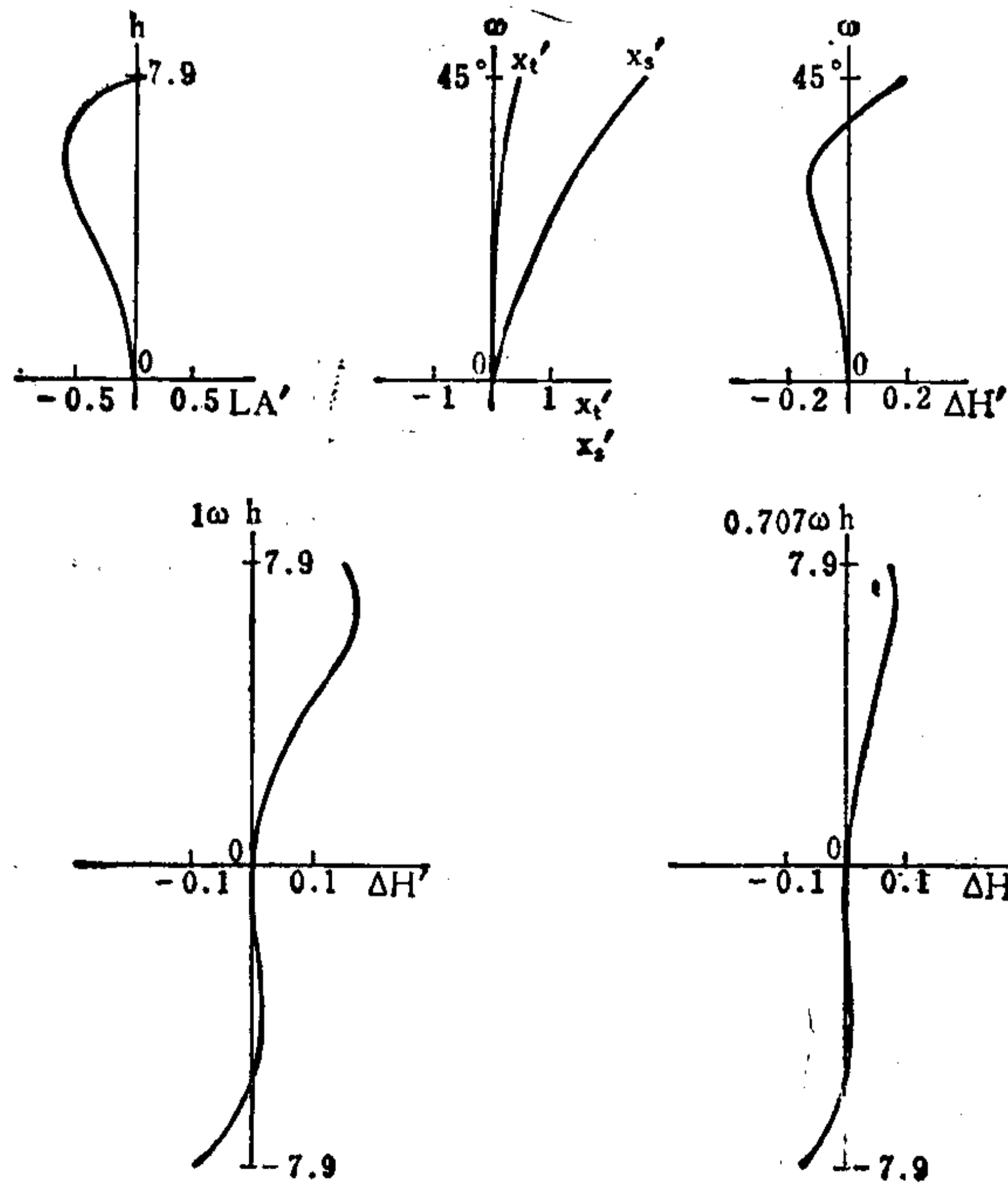
F.A. = ±45°



序号	r	d	nd	v	序号	r	d	nd	v
1	73.93	3.60	1.50380	66.7	8	-166.00	1.93	1.54579	59.6
2	35.30	10.70			9	21.23	15.20	1.60000	60.7
3	88.35	3.05	1.48697	70.3	10	-20.46	13.90	1.71966	29.3
4	35.30	20.30			11	-38.82	23.10		
5	39.35	18.30	1.72050	50.3	12	-26.68	9.40	1.64200	58.1
6	18.28	11.30	1.60739	53.3	13	-79.85			
7	-135.26	3.30*							

3.30\* = 1.65 + 1.65

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.0219	-0.0034	-0.0170	0.0477	-0.0682	99.9	0.18%
h 或 $\omega$ %	LA'	$\Delta H'$	$x_t$	$x'_s$	$x'_t - x'_s$	$K'_{T1}$	$K'_{T0.7}$
100	0.041	0.178	0.447	2.543	-2.096	0.0288	0.0758
70	-0.583	-0.130	0.179	1.419	-1.240	-0.0065	0.0276



⑥

⑱

编号: 03-02-088

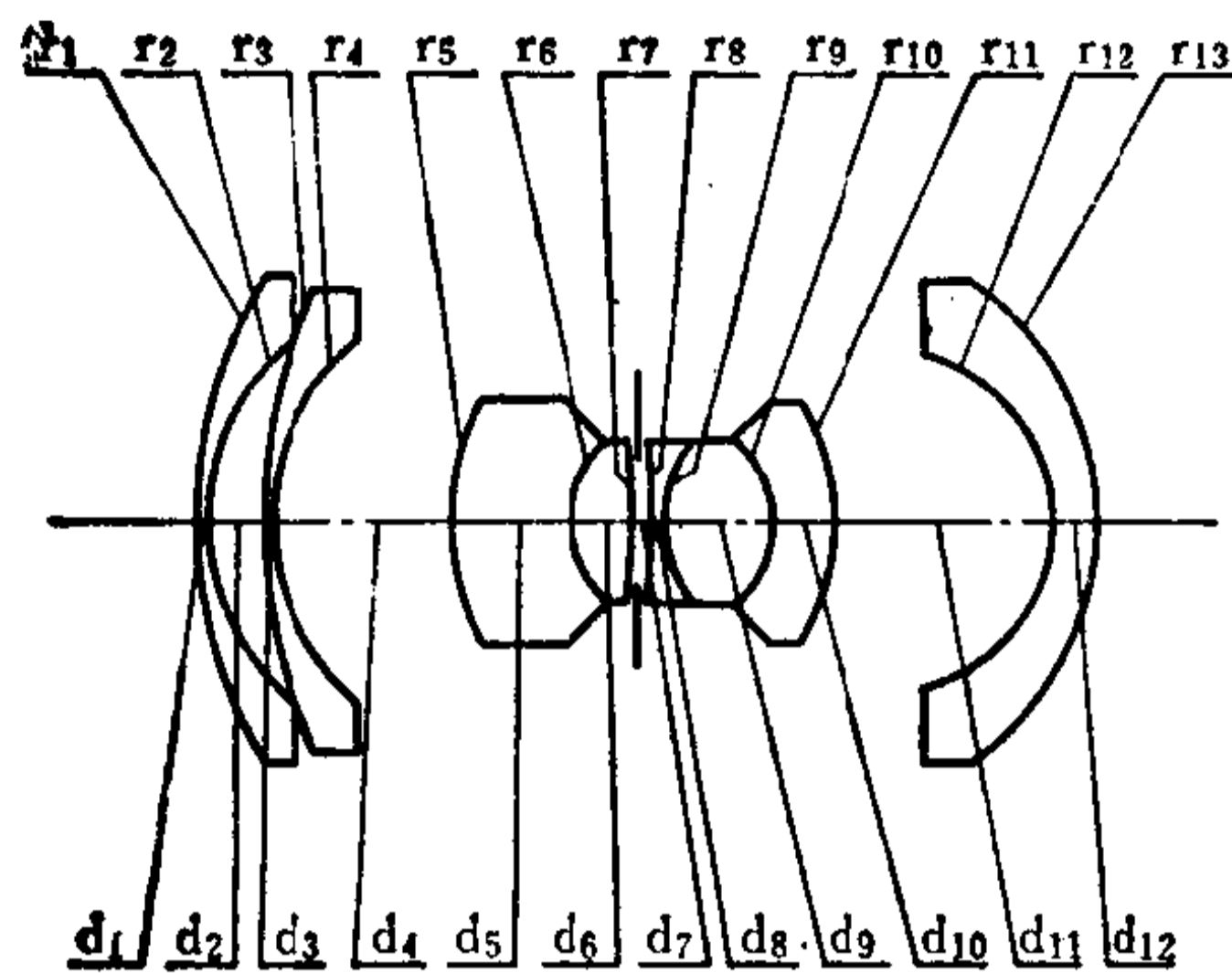
### 五组元超广角物镜

E.F.L=99.95

B.F.L=20.5

FNo.=3.4

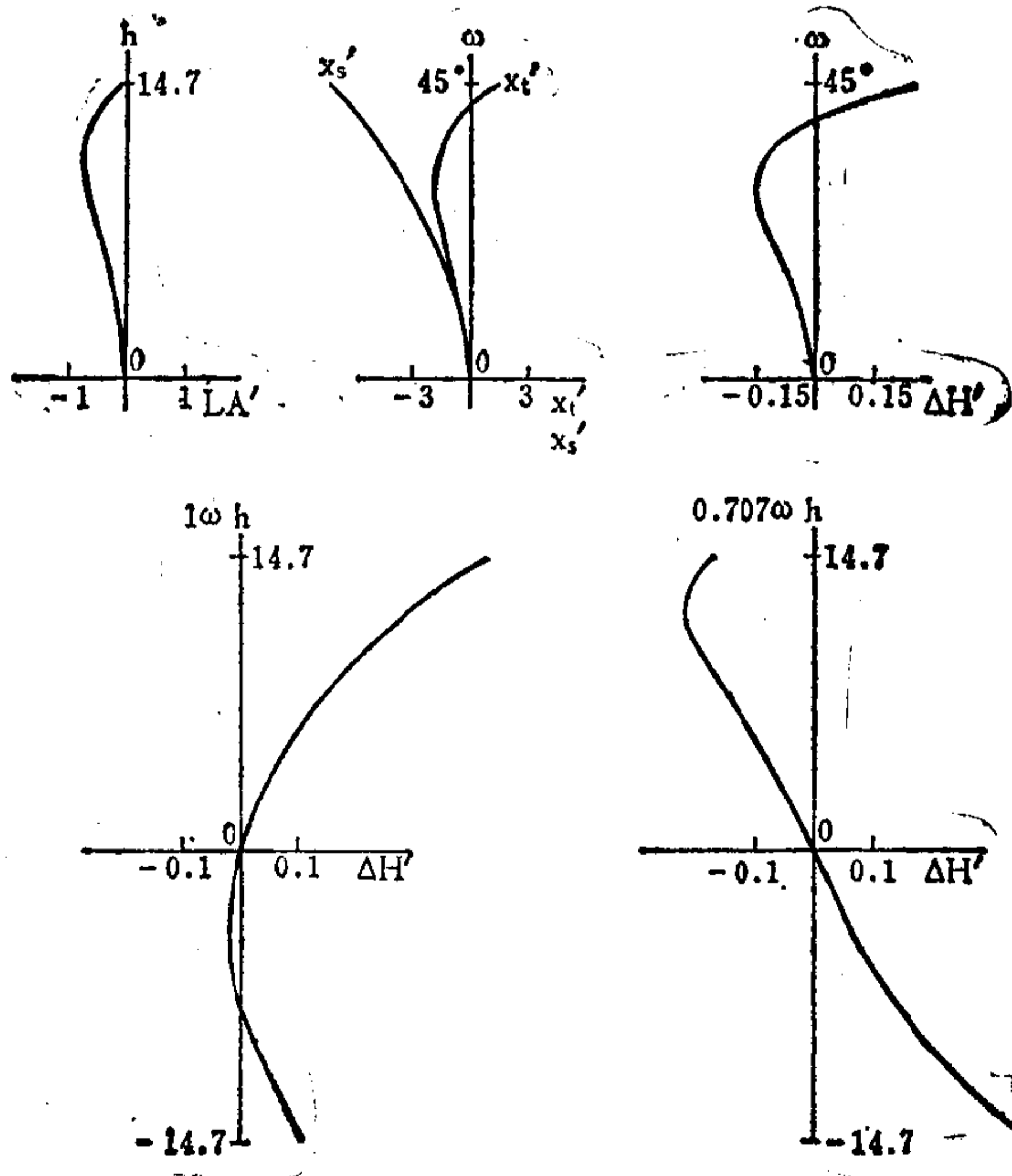
F.A.=±45°



序号	r	d	n <sub>d</sub>	v	序号	r	d	n <sub>d</sub>	v
1	138.19	3.4	1.50380	66.7	8	-346.44	3.9	1.56993	57.5
2	73.80	17.8			9	41.93	34.3	1.62500	59.0
3	162.28	3.4	1.48697	70.3	10	-31.48	19.6	1.71966	29.3
4	74.64	56.2			11	-76.36	69.6		
5	76.38	40.1	1.72050	50.3	12	-55.28	12.5	1.64200	58.1
6	33.62	18.2	1.60739	51.0	13	-93.62			
7	-267.23	6.4*							

6.4\* = 3.2 + 3.2

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.0999	-0.0355	-0.0038	-0.2345	-0.1682	99.9	0.27%
h 或 $\omega$ %	LA'	$\Delta H'$	$x_t$	$x_n$	$x'_t - x'_n$	$K'_{T1}$	$K'_{T0.7}$
100	-0.113	0.271	1.272	-7.448	8.720	0.275	0.130
70	-0.741	-0.152	-1.919	-3.505	1.586	0.100	0.006



编号: 03-02-089

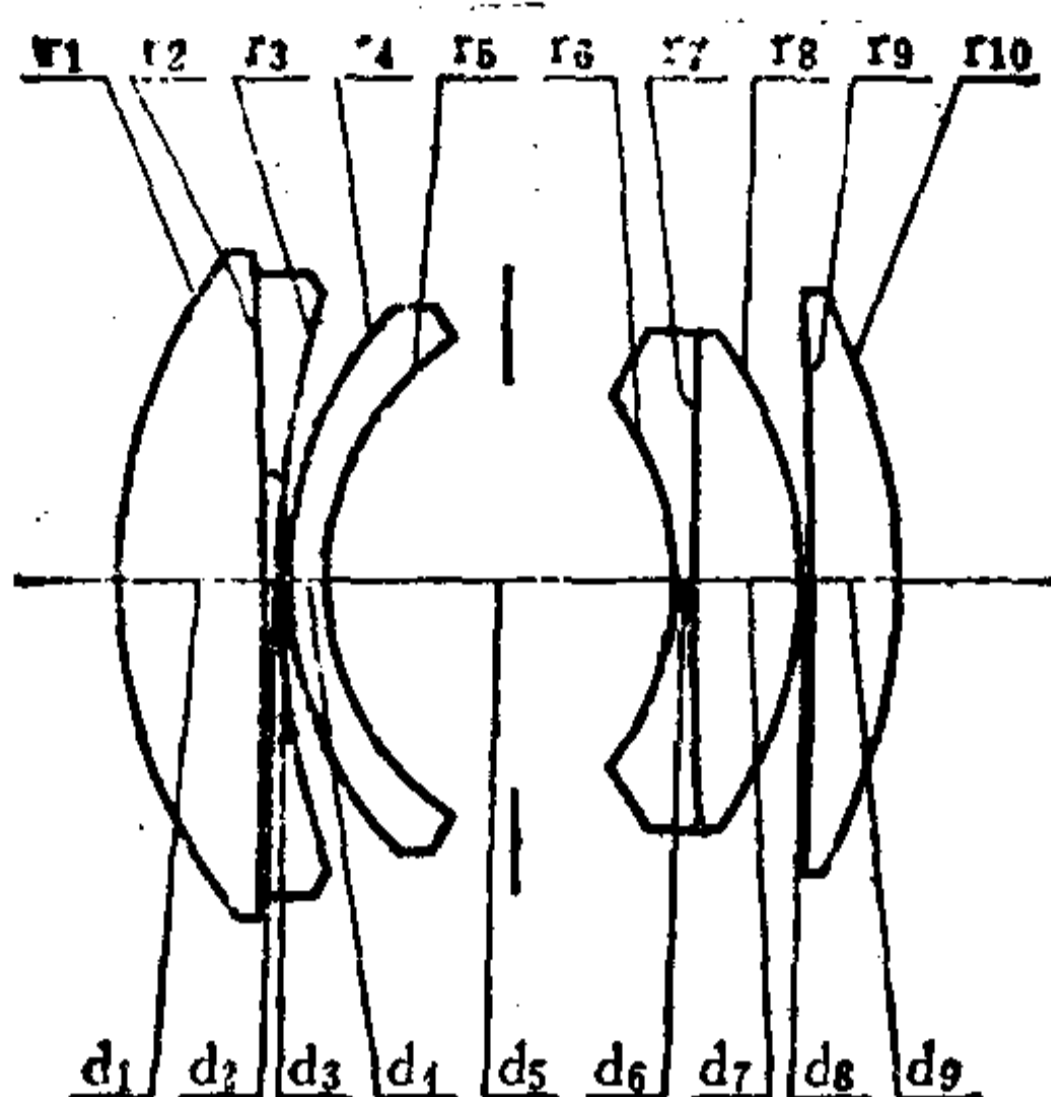
### 高斯型四组元广角物镜

E.F.L=100

B.F.L=78.02

FNo.=2.8

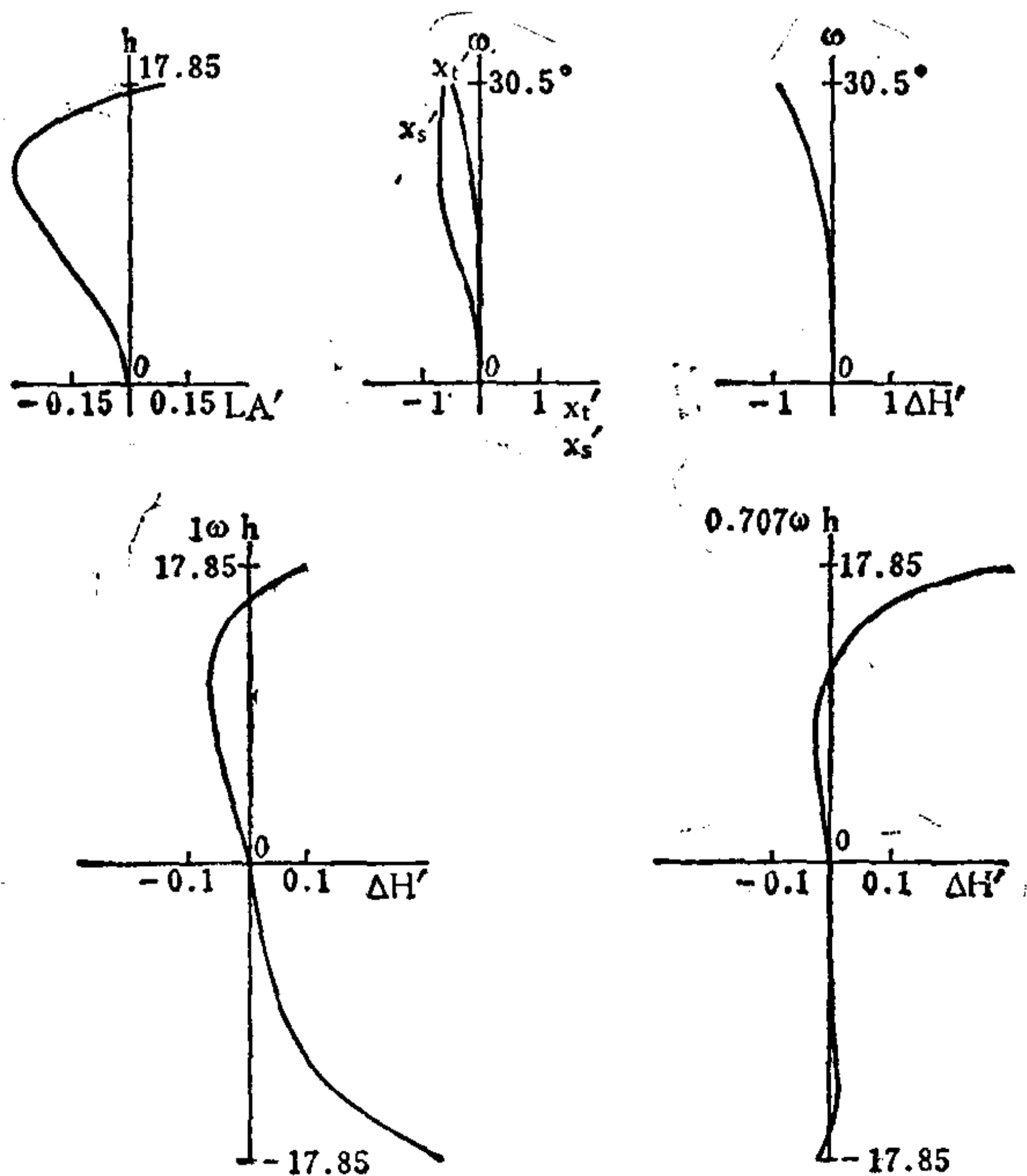
F.A.=±30.5°



序号	r	d	$n_d$	v	序号	r	d	$n_d$	v
1	42.8325	11.6958	1.7200	50.3	6	-23.7632	1.2989	1.7618	26.5
2	-360.7830	1.3042	1.6676	41.9	7	360.7830	8.3722	1.6645	35.9
3	74.7543	0.1294			8	-30.7973	0.4102		
4	30.7973	4.7330	1.7618	26.5	9	-360.7830	6.1214	1.7440	44.9
5	22.7214	27.7134*			10	-46.8675			

27.7134\* = 14.1444 + 13.5690

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP(1 $\omega$ )
	-0.0703	0.0087	0.0419	-0.1691	-0.2207	58.6	-1.7%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{f1}$	$K'_{T0.7}$
100	0.085	-0.970	-0.489	-0.697	0.208	0.226	0.034
70	-0.299	-0.295	-0.148	-0.714	0.566	0.153	0.014



⑥

①



编号: 03-02-090

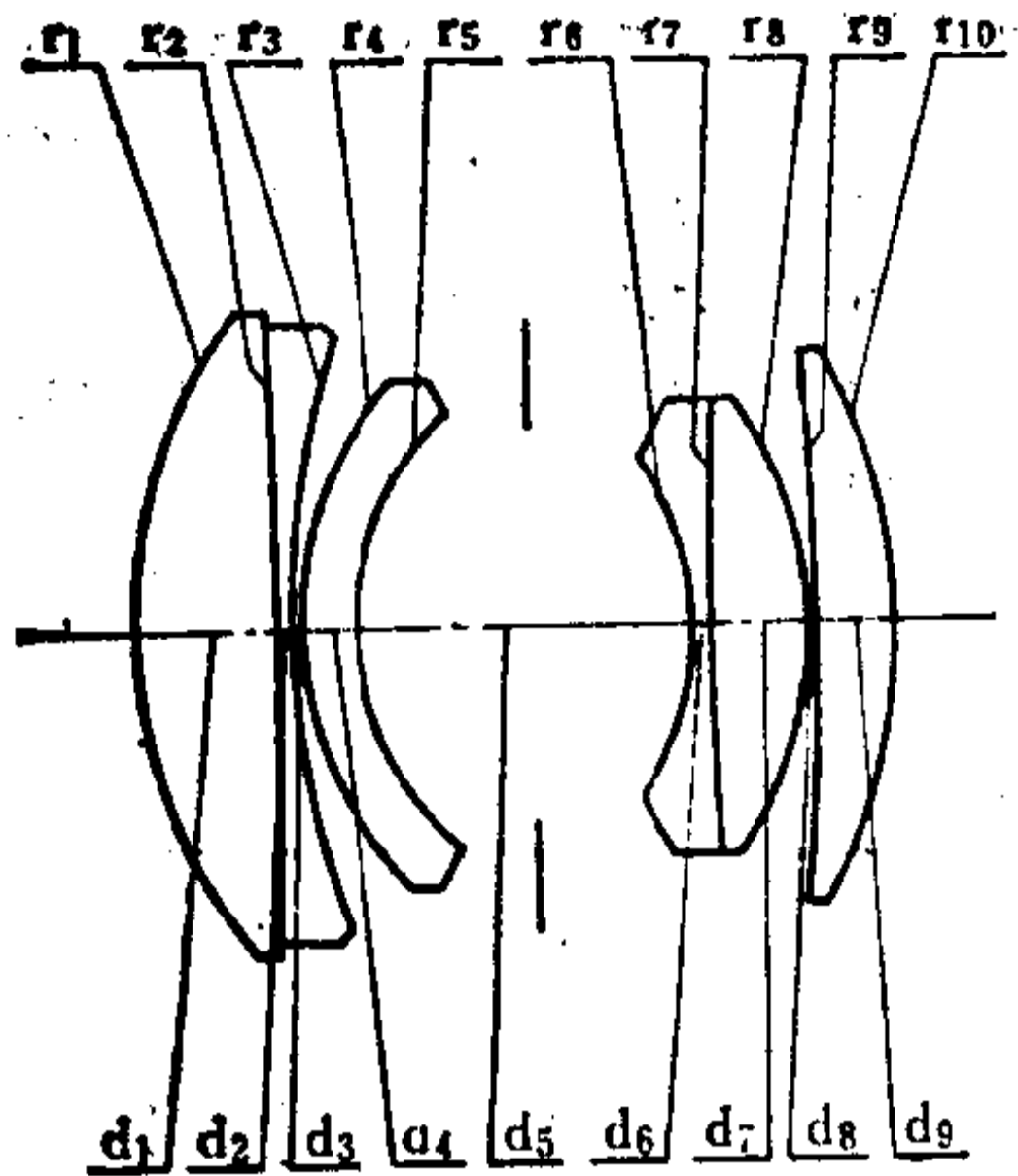
### 高斯型四组元广角物镜

E.F.L = 100

B.F.L = 84.53

FNo. = 2.8

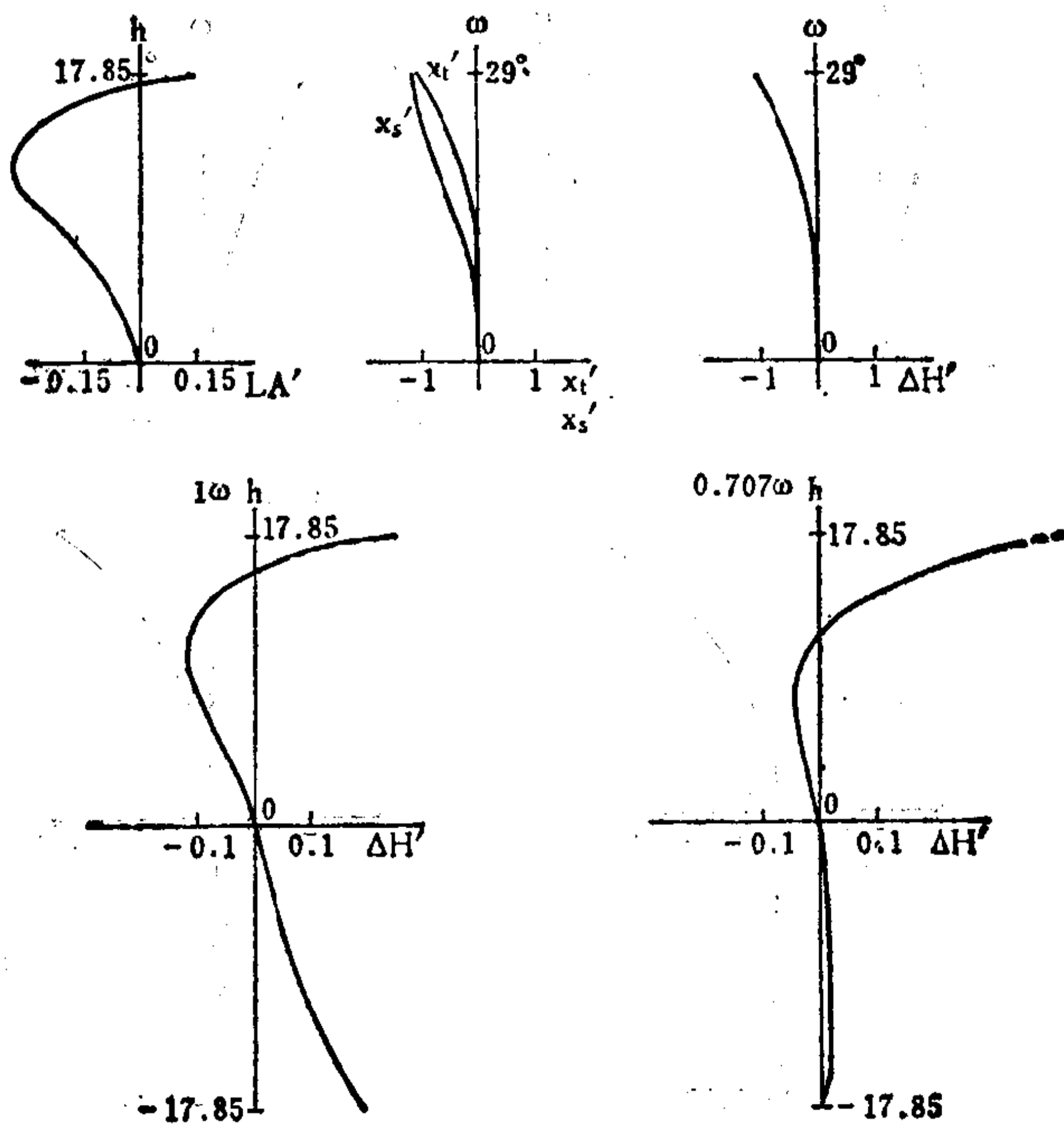
F.A. = ± 29°



序号	r	d	n <sub>d</sub>	v	序号	r	d	n <sub>d</sub>	v
1	42.61765	11.68507	1.7170	48.2	6	-24.25732	1.29879	1.7618	26.5
2	-360.4458	1.30278	1.6490	38.2	7	360.4458	8.99159	1.6398	34.6
3	72.23246	0.12888			8	-30.76853	0.09991		
4	30.76853	3.49673	1.7618	26.5	9	-360.4458	7.31316	1.7440	44.9
5	22.70018	27.68711*			10	-46.53649			

27.68711\* = 14.14440 + 13.54271

	$\Sigma S_1$	$\Sigma S_2$	$\Sigma S_3$	$\Sigma S_4$	$\Sigma S_5$	HI	QP (1 $\omega$ )
	-0.08047	0.00008	0.04054	-0.16048	-0.29309	55.4	-1.9%
h 或 $\omega$ %	LA'	$\Delta H'$	$x'_t$	$x'_s$	$x'_t - x'_s$	$K'_{f1}$	$K'_{f0.7}$
100	0.141	-1.068	-1.071	-1.119	0.048	0.2209	-0.0058
70	-0.341	-0.355	-0.341	-0.792	0.451	0.2724	0.0164



编号: 03-02-091

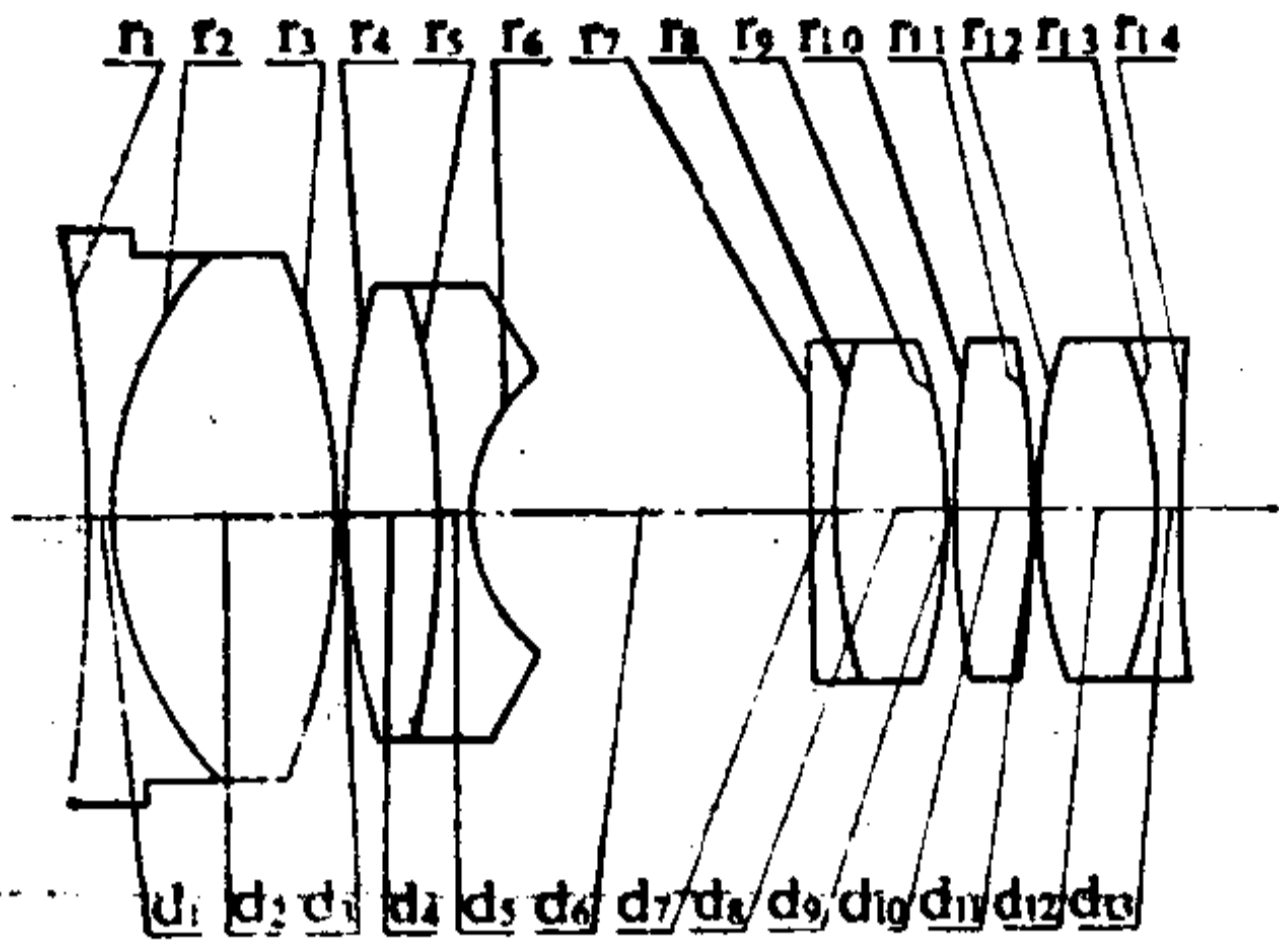
# 摄影或电影摄影用的大孔径广角物镜

E.F.L.=1

B.F.L.=1.74

FNo.=1.8

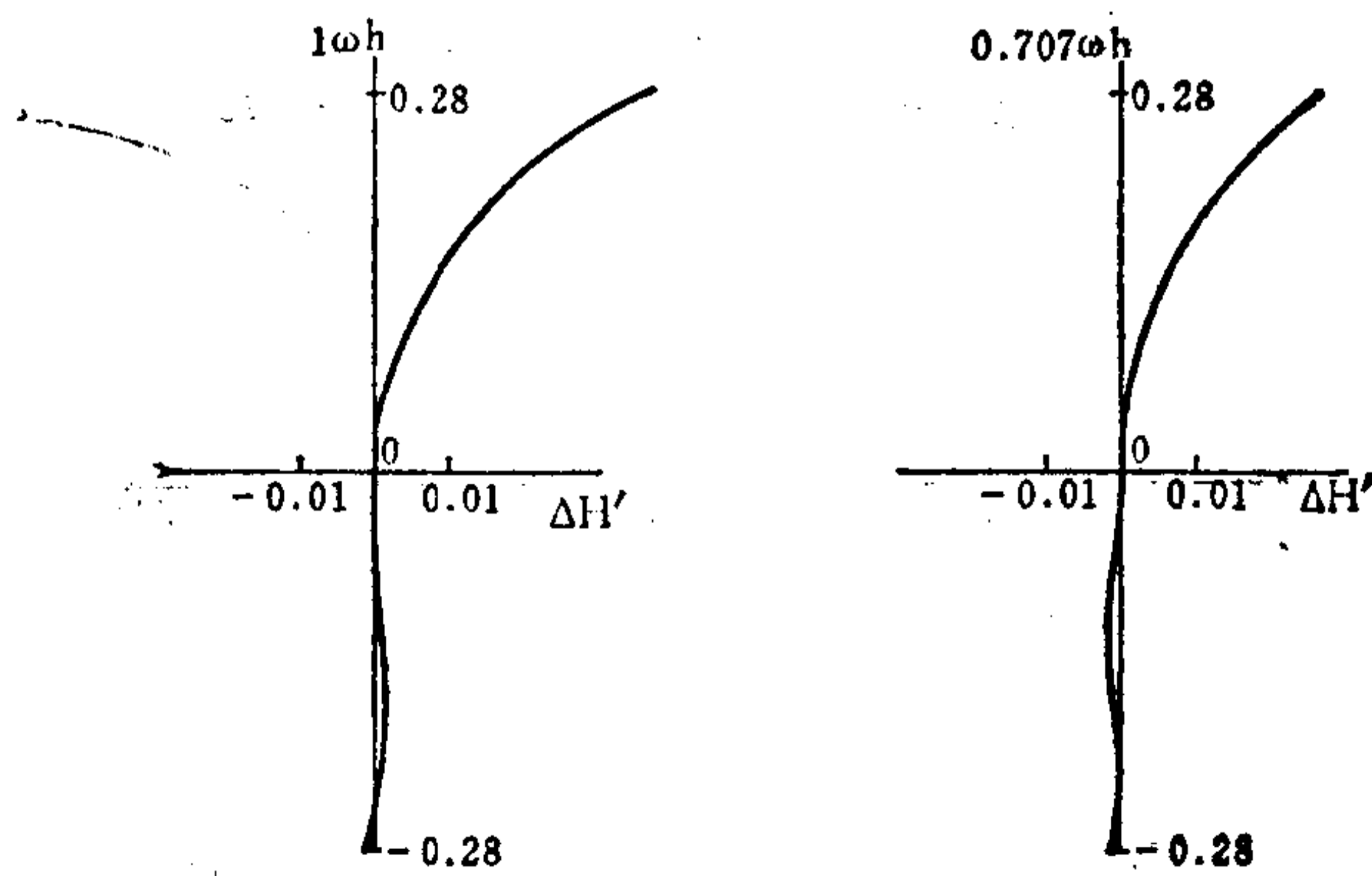
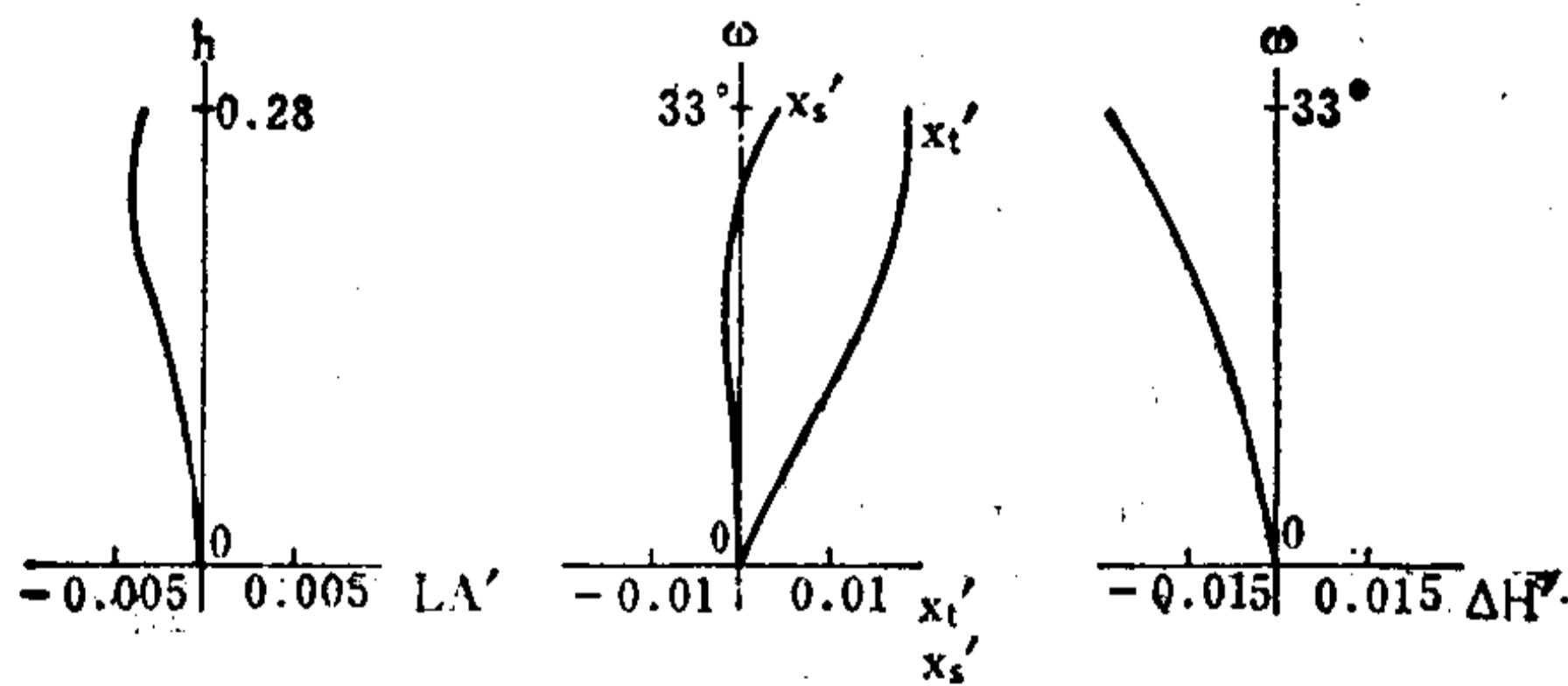
F.A.=±33°



序号	r	d	n <sub>D</sub>	v	序号	r	d	n <sub>D</sub>	v
1	-12.040	0.098	1.7440	44.9	8	2.828	0.488	1.5687	63.1
2	1.707	0.975	1.5014	56.5	9	-1.950	0.005		
3	-3.061	0.010			10	4.746	0.341	1.6425	58.1
4	3.804	0.410	1.7400	28.2	11	-5.303	0.005		
5	-4.188	0.146	1.5128	57.2	12	2.440	0.512	1.5400	59.7
6	0.791	2.511*			13	-2.094	0.088	1.7282	28.3
7	131.700	0.098	1.6727	32.2	14	14.010			

2.511\* = 1.240 + 1.271

	ΣS <sub>1</sub>	ΣS <sub>2</sub>	ΣS <sub>3</sub>	ΣS <sub>4</sub>	ΣS <sub>5</sub>	HI	QP(1ω)
	-0.00166	0.00086	0.00246	-0.00312	-0.02232	0.65	-4.4%
h 或 ω%	LA'	ΔH'	x <sub>t</sub> '	x <sub>s</sub> '	x <sub>t</sub> ' - x <sub>s</sub> '	K <sub>t1</sub> '	K <sub>i0.7</sub> '
100	-0.0035	-0.0238	0.0179	0.0043	0.0136	0.0172	0.0075
70	-0.0038	-0.0149	0.0168	-0.0009	0.0177	0.0133	0.0052



编号: 03-02-092

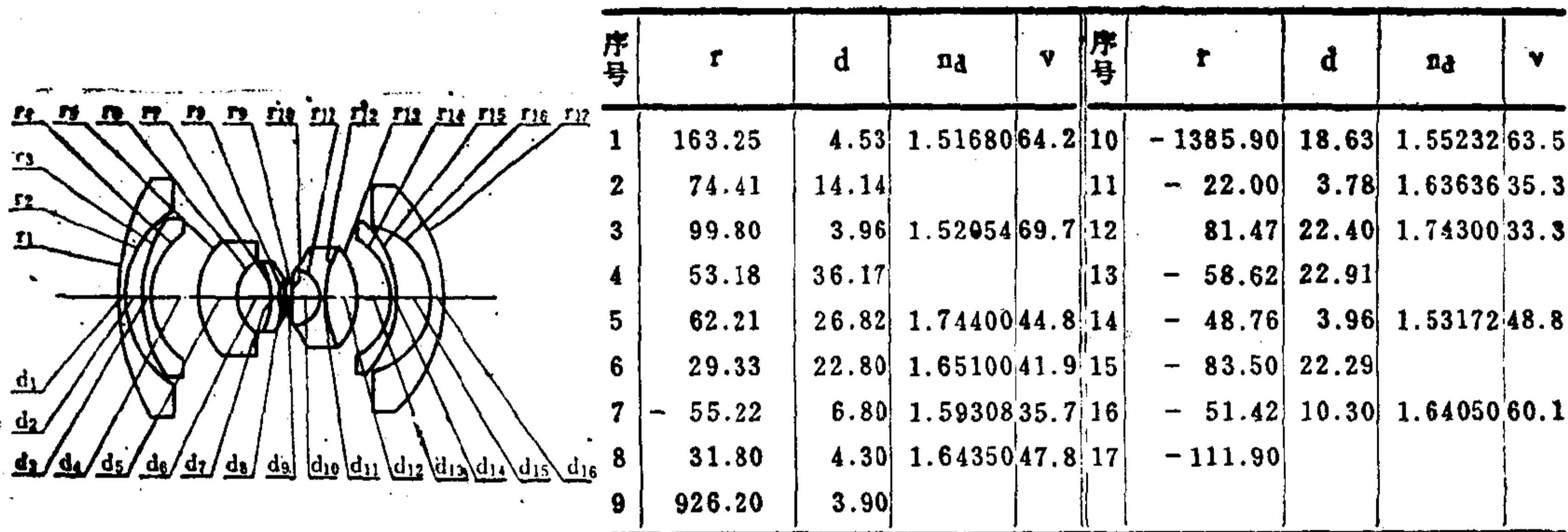
## 超广角镜头

E.F.L=100

B.F.L=28.96

FNo.=5.6

F.A.=±60°



编号: 03-02-093

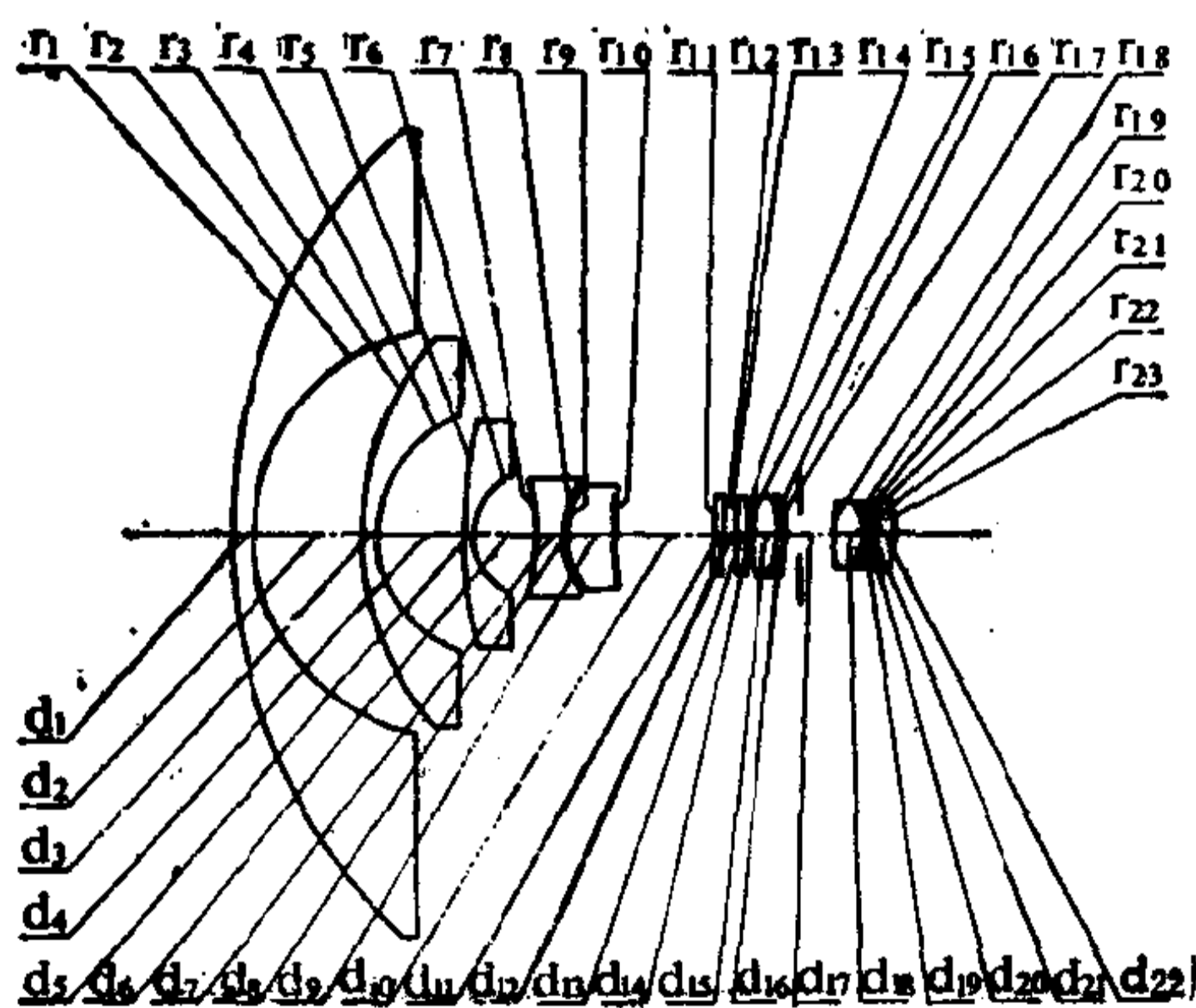
## 超广角鱼眼镜头

E.F.L=6.3

B.F.L=37.657

FNo.=2.8

F.A.=±110°



序号	r	d	nd	v	序号	r	d	nd	v
1	143.470	7.00	1.51680	64.2	13	278.333	3.00	1.64831	33.8
2	52.500	28.00			14	-185.420	0.10		
3	76.400	3.80	1.51680	64.2	15	52.030	7.00	1.53375	55.4
4	31.521	21.80			16	-28.500	2.00	1.77250	49.5
5	150.000	3.00	1.51680	64.2	17	-77.000	13.00		
6	17.100	16.50			18	45.000	8.00	1.51823	59.0
7	-60.000	7.00	1.62041	60.3	19	-14.400	0.60	1.79631	40.8
8	22.625	0.60			20	-34.500	0.10		
9	23.900	12.60	1.72825	28.3	21	-110.000	1.00	1.71736	29.5
10	78.988	25.00			22	35.000	3.50	1.51680	64.2
11	∞	1.80	1.51823	59.0	23	-25.763			
12	∞	2.80							

编号: 03-02-094

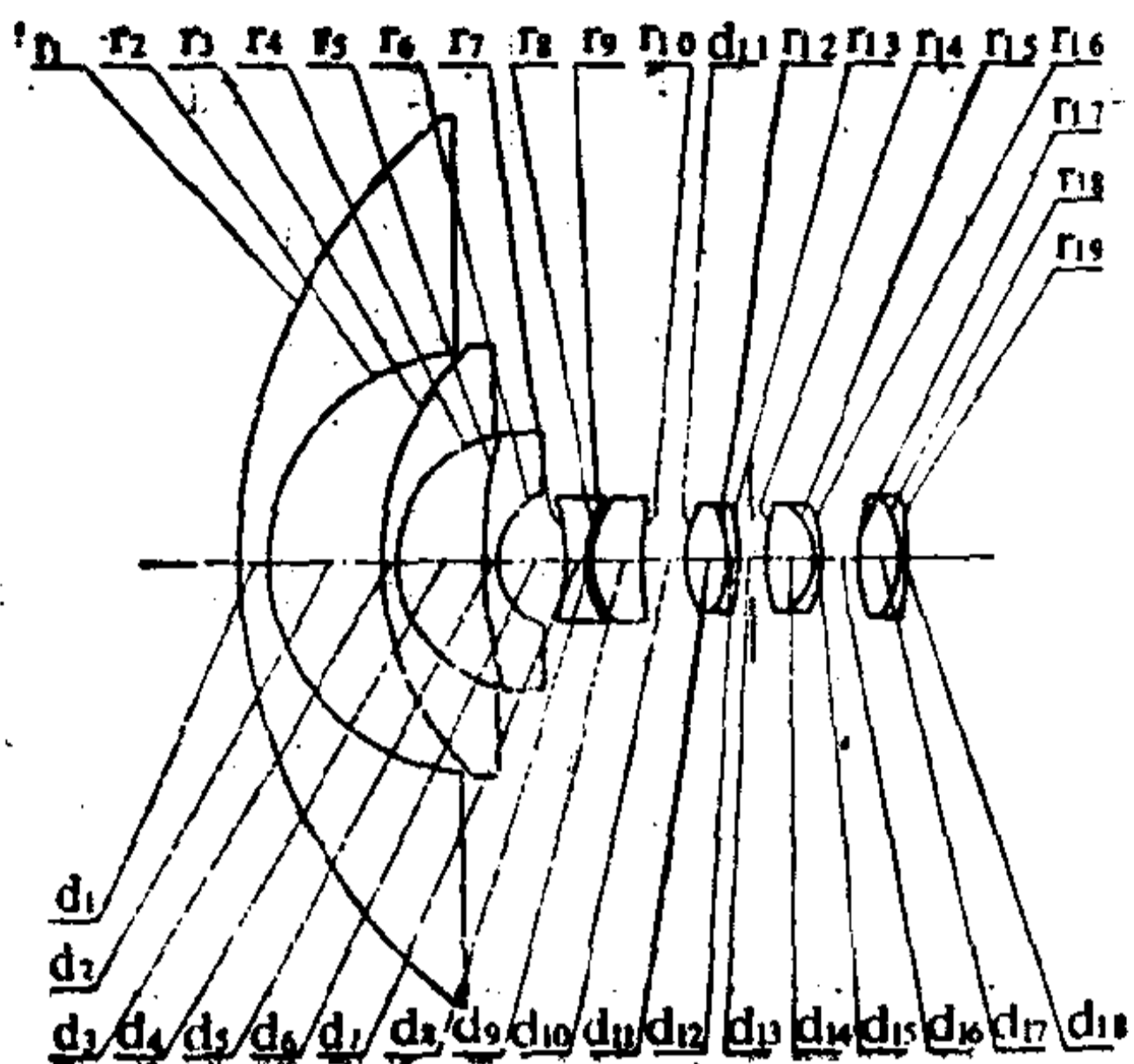
### 超广角鱼眼镜头

E.F.L.=10.2

B.F.L.=25.09

FNo.=4.0

F.A.=±110°



序号	r	d	nd	v	序号	r	d	nd	v
1	143.470	7.0	1.51860	64.2	11	31.000	10.0	1.51454	54.6
2	52.500	28.0			12	-29.000	2.0	1.78470	26.1
3	76.400	3.8	1.51680	64.2	13	-58.000	8.0		
4	31.521	21.8			14	65.000	11.3	1.51454	54.6
5	125.000	3.0	1.51680	64.2	15	-16.000	1.6	1.74950	35.0
6	17.100	15.5			16	-36.110	10.0		
7	-98.060	7.0	1.62041	60.3	17	40.000	10.0	1.56384	60.8
8	25.500	0.7			18	-26.000	1.0	1.71736	29.5
9	27.160	12.6	1.72825	28.3	19	-679.823			
10	180.000	10.0							

编号: 03-02-095

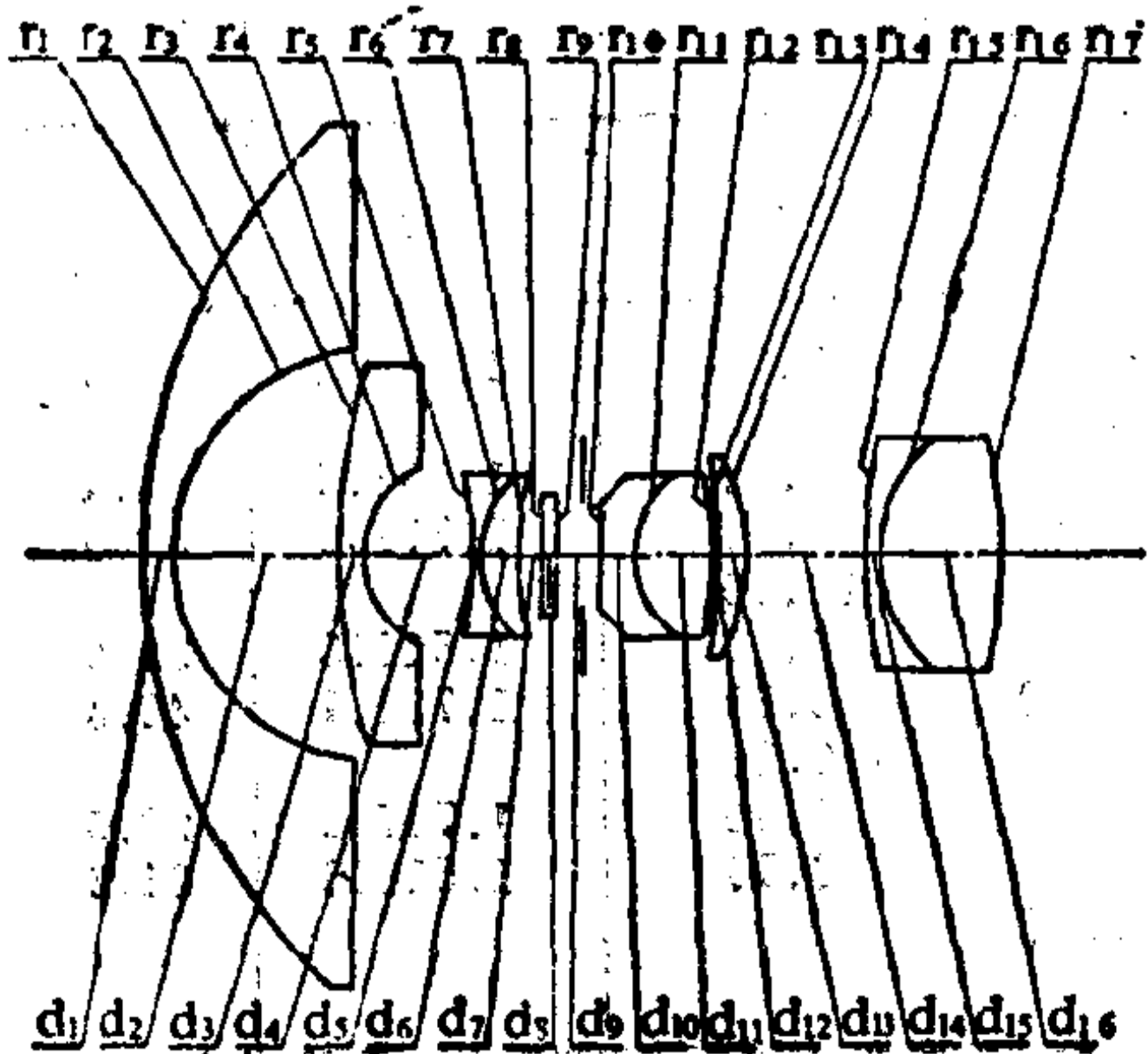
### 消色差超广角镜头

E.F.L.=10

B.F.L.=

FNo.=5.6

F.A.=±110°



序号	r	d	n	v	序号	r	d	n	v
1	88.722	4.5	1.61272	58.6	10	-3220.849	5.6	1.78477	26.0
2	30.356	24.5			11	14.816	11.3	1.74372	45.0
3	89.627	3.9	1.62041	60.3	12	-56.365	0.2		
4	14.301	15.5			13	-305.981	4.8	1.76764	46.5
5	-66.282	1.3	1.48848	70.3	14	-28.988	17.2		
6	17.127	5.8	1.78470	26.0	15	64.417	2.6	1.78485	26.0
7	59.586	3.2			16	22.224	17.4	1.62230	53.1
8	∞	1.9	1.51743	58.5	17	-69.508			
9	∞	6.4							

编号: 03-02-096

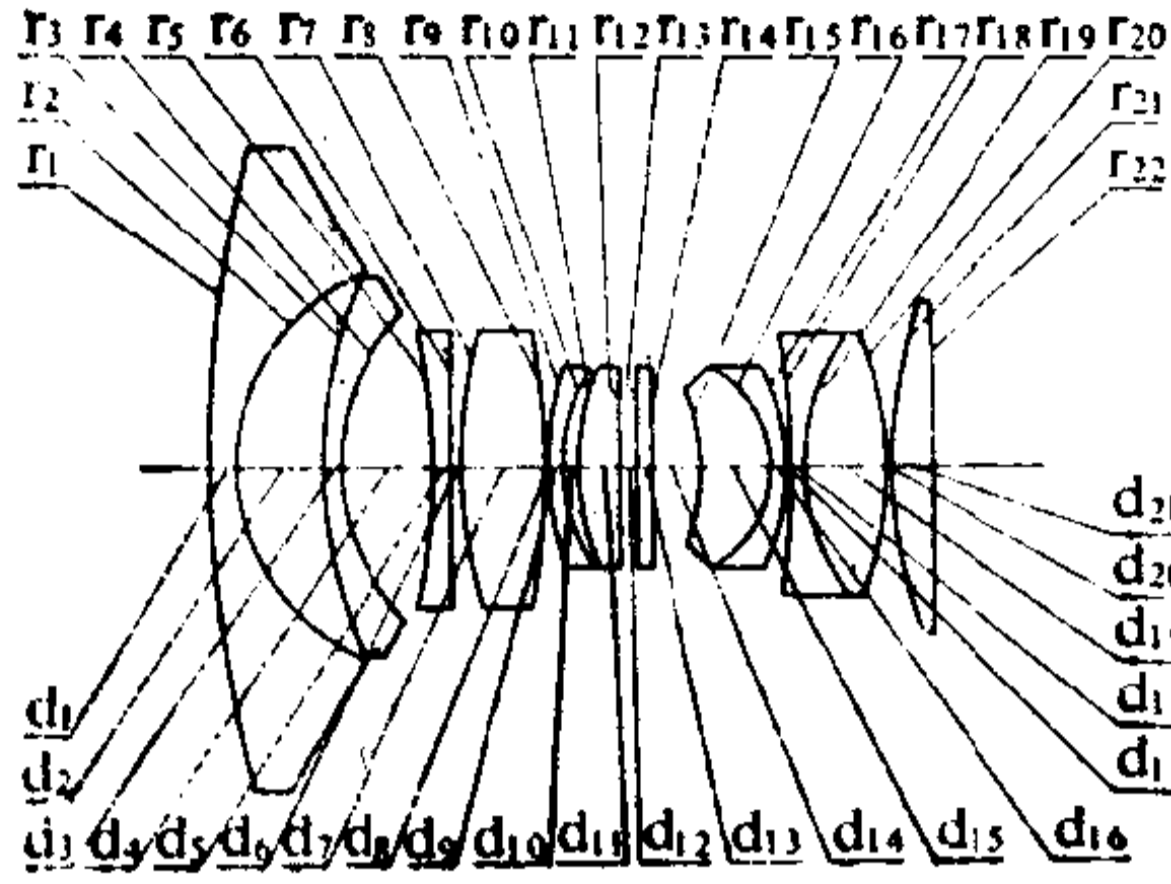
### 超 广 角 镜 头

E.F.L=1

B.F.L=2.26

FNo.=2.8

F.A.=±90°



序号	r	d	n	v	序号	r	d	n	v
1	9.8493	0.1300	1.6010	64.1	12	28.8850	0.1000		
2	1.3060	0.5307			13	∞	0.0915	1.5994	40.8
3	2.9757	0.1200	1.6790	57.1	14	∞	0.3058		
4	1.3140	0.5913			15	-1.4966	0.4331	1.6388	60.1
5	-3.1775	0.1000	1.6204	60.3	16	-0.6905	0.1000	1.7618	26.5
6	32.0620	0.0750			17	-1.2414	0.0090		
7	3.1718	0.5131	1.6676	41.9	18	-7.5358	0.0850	1.7400	37.5
8	-5.3920	0.0090			19	1.4093	0.5100	1.6230	58.1
9	2.3056	0.1000	1.6214	61.2	20	-2.0771	0.0090		
10	1.1154	0.0750			21	3.0419	0.2650	1.5168	64.2
11	1.5001	0.2739	1.7545	32.8	22	-16.3930			

编号: 03-02-097

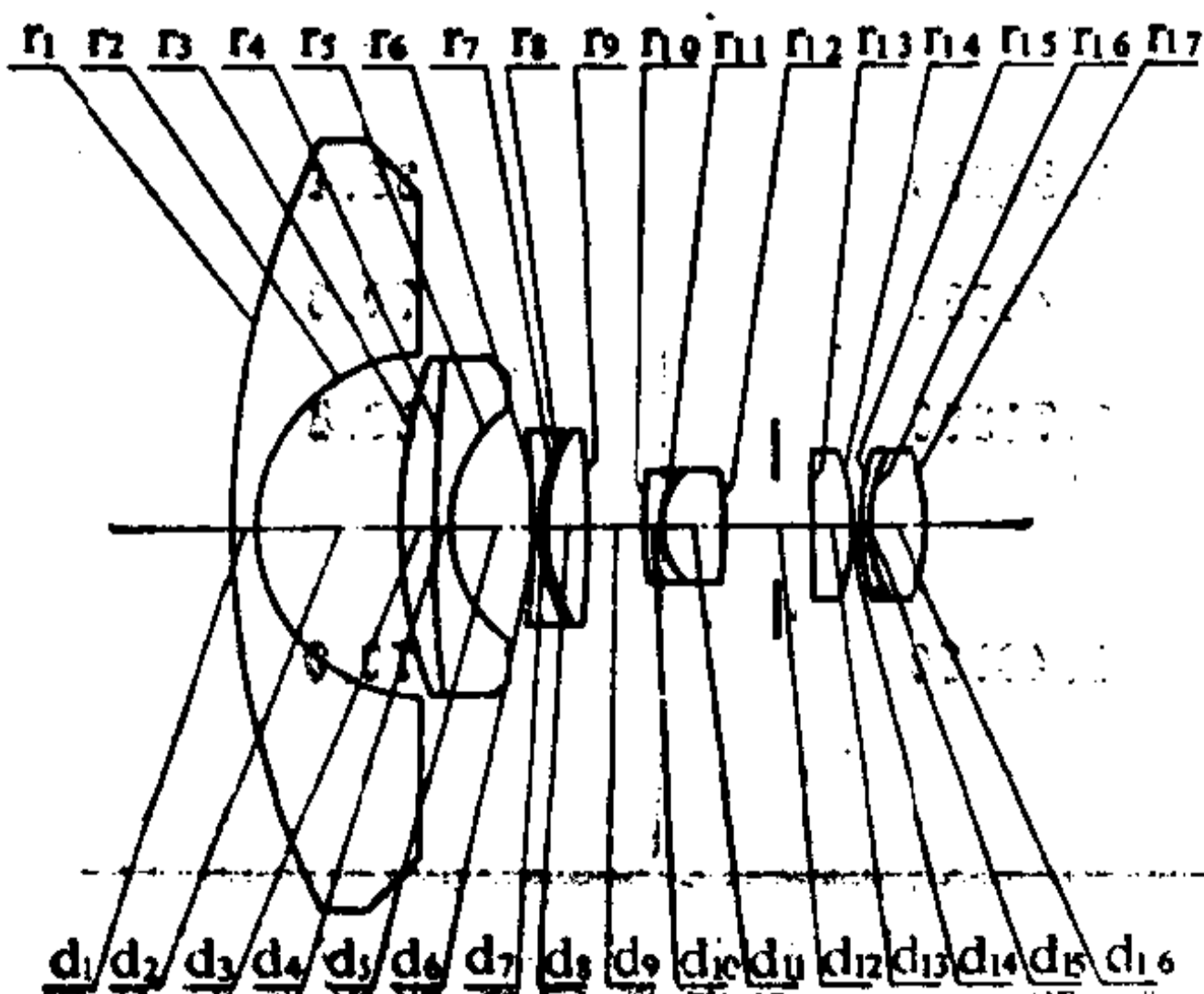
### 超 广 角 摄 影 镜 头

E.F.L=1

B.F.L=4.5616

FNo.=2.8

F.A.=±90°



序号	r	d	n	v	序号	r	d	n	v
1	12.5508	0.3406	1.5891	61.0	10	10.6177	0.2433	1.7865	50.1
2	2.3973	2.0581			11	-1.0641	0.8722	1.6034	38.0
3	6.7504	0.4841	1.7847	25.6	12	-8.5301	1.2638		
4	23.0172	0.2433	1.5891	61.0	13	-82.8154	0.5340	1.5184	60.1
5	2.0662	1.0668			14	-3.1680	0.0243		
6	-30.4548	0.1910	1.6700	57.3	15	-3.2395	0.1825	1.9225	20.9
7	2.7598	0.0255			16	1.8270	0.7992	1.5184	60.1
8	3.0080	0.5681	1.6668	33.0	17	-2.8557			
9	-40.5882	0.8687							



编号: 03-02-098

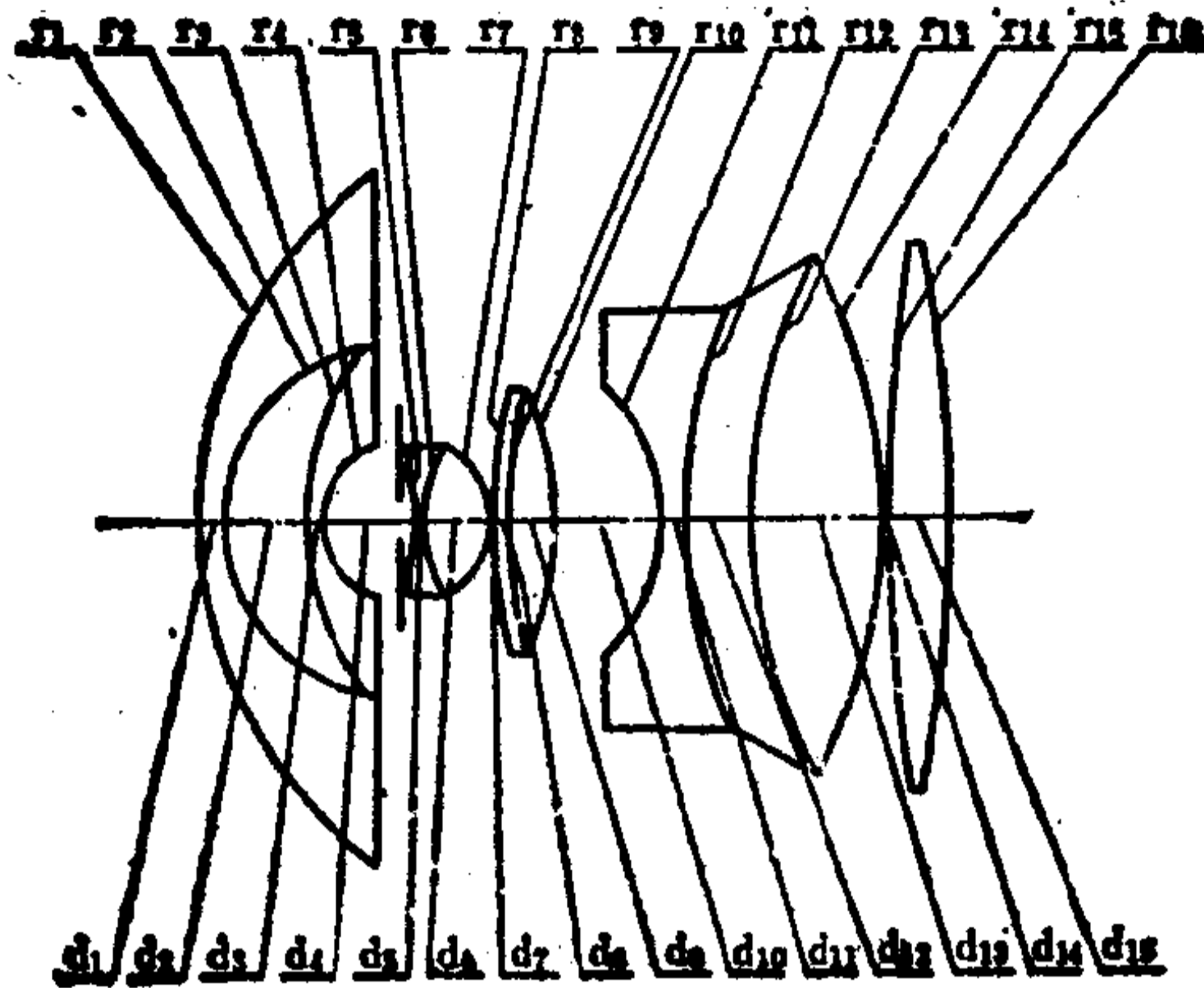
# 超 广 角 镜 头

E.F.L=12

B.F.L=

FNo.=10

F.A.=±135°



序 号	r	d	n <sub>D</sub>	v
1	28.81	1.50	1.53996	59.6
2	11.67	5.50		
3	18.54	0.95	1.53996	59.6
4	5.15	6.22*		
5	- 10.00	0.60	1.56732	42.8
6	10.00	4.40	1.56873	63.1
7	- 5.85	0.25		
8	43.53	1.00	1.56873	63.1
9	43.53	3.00	1.58313	59.3
10	- 22.94	7.00		
11	- 12.70	1.80	1.59270	35.4
12	37.04	4.20	1.48750	70.0
13	37.04	9.00	1.71300	53.8
14	- 37.04	0.20		
15	147.90	4.00	1.48750	70.0
16	- 120.00			

6.22\* = 5.22 + 1.00



编号: 03-02-099

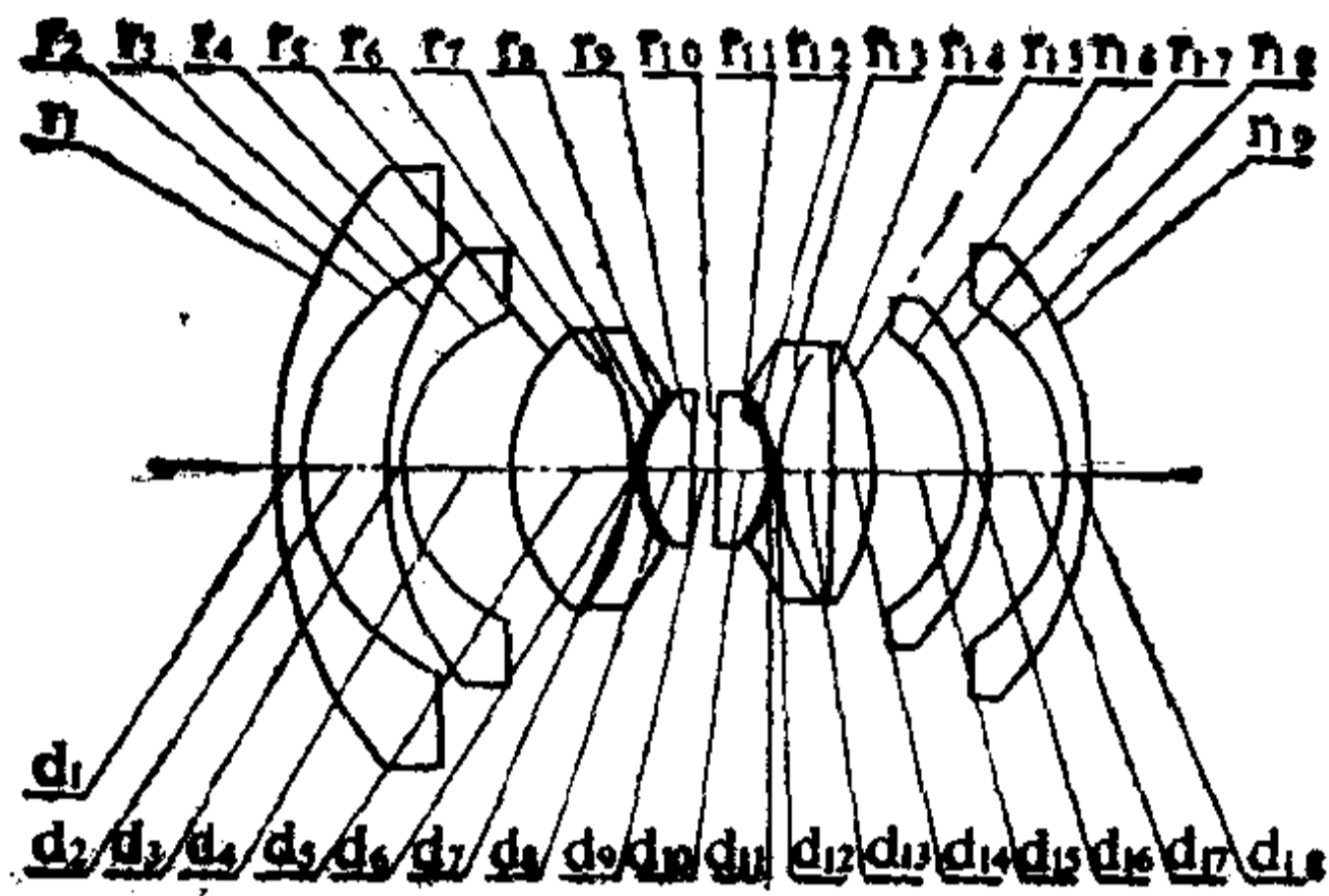
# 八片式超广角镜头

E.F.L = 1

B.F.L =

FNo. = 5.6

F.A. = ±60.5°



序号	r	d	rd	v	序号	r	d	rd	v
1	1.29775	0.06838	1.51633	64.0	11	-0.29168	0.00331		
2	0.61125	0.21736			12	-0.28280	0.01869	1.61293	37.0
3	-0.89057	-0.05678	1.51633	64.0	13	0.58805	0.15238	1.66446	35.9
4	0.43467	0.23924			14	-5.11339	0.11798	1.67786	55.5
5	0.52622	0.31583	1.67786	55.5	15	-0.62426	0.27429		
6	-0.63863	-0.01869	1.60562	43.9	16	-0.44284	0.05247	1.72825	28.3
7	0.27184	-0.00489			17	-0.70771	0.20744		
8	0.28280	0.12722	1.55115	49.6	18	-0.53779	0.06397	1.58913	61.2
9	28.73676	0.06181			19	-0.90778			
10	4.87763	0.12794	1.55361	51.4					

编号: 03-02-100

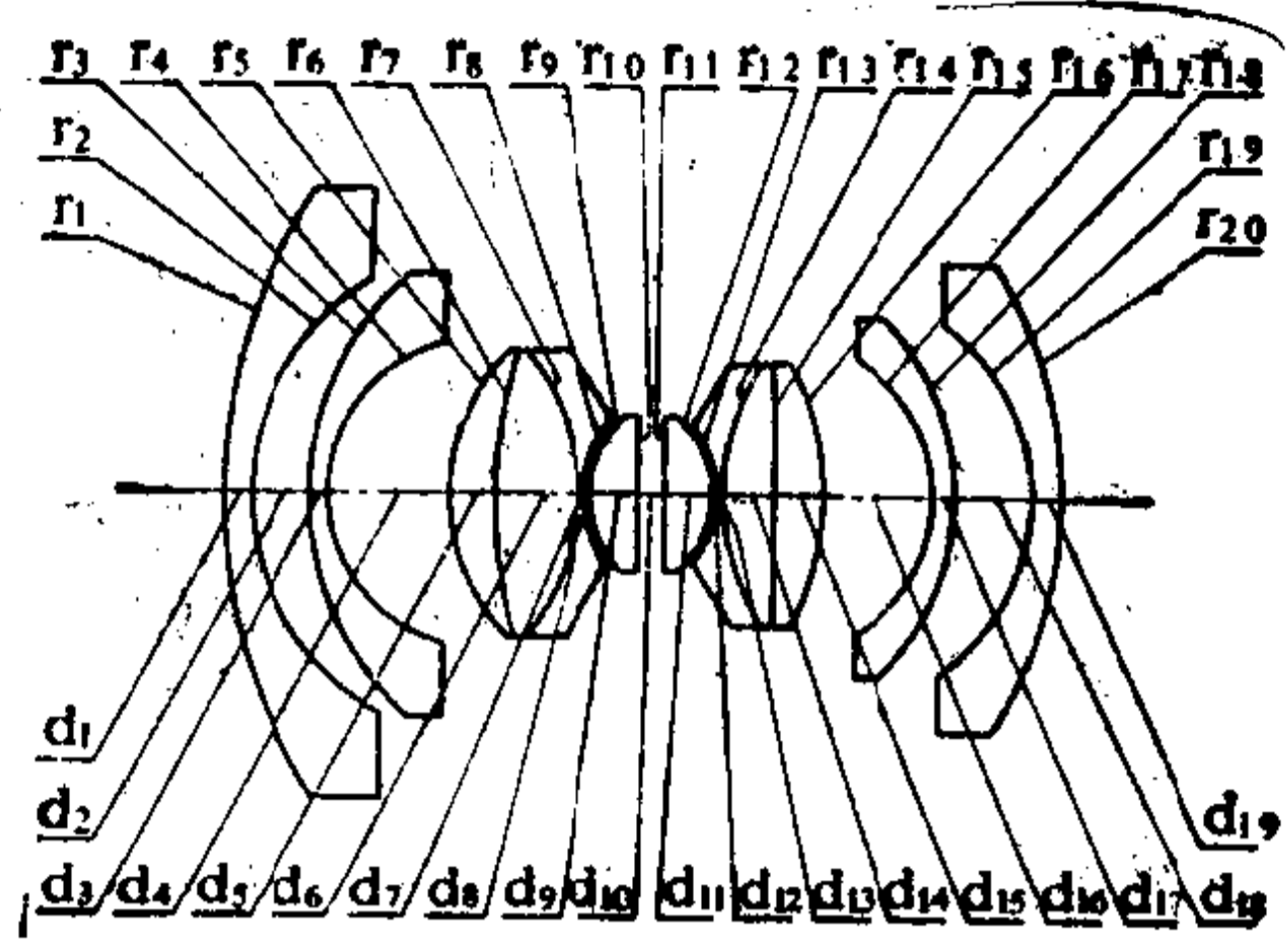
# 八片式超广角镜头

E.F.L. = 1

B.F.L. =

FNo. = 5.6

F.A. = ±90.5°



序号	r	d	n <sub>d</sub>	v	序号	r	d	n <sub>d</sub>	v
1	1.40773	0.06773	1.52088	60.2	11	9.08195	0.13175	1.56384	60.7
2	0.64601	0.15506			12	- 0.29219	0.00264		
3	0.80930	0.05644	1.61272	58.6	13	- 0.28565	0.01693	1.58215	42.0
4	0.44316	0.30661			14	0.57550	0.13957	1.65128	38.3
5	0.53348	0.11958	1.66680	33.1	15	25.53558	0.12504	1.64328	47.8
6	1.16220	0.22175	1.66755	41.9	16	- 0.66308	0.28465		
7	- 0.58504	0.01693	1.61659	36.6	17	- 0.43336	0.05193	1.72342	38.0
8	0.26232	0.00815			18	- 0.65051	0.19993		
9	0.27680	0.12996	1.55232	63.5	19	- 0.52868	0.06435	1.52944	51.8
10	- 7.50150	0.06209			20	- 1.08893			