

*This is most reliable data per H. Petrie. 8-29-08
-verify to Zmax model.*

MEMORANDUM

TO: R. J. Brucato

10/29/84

FROM: A. H. Vaughan *AHV*

SUBJECT: P60 Optical Specifications

I have some notes from I. S. Bowen giving the optical specifications of the P60 as follows:

PRIMARY $z = -6.5617e-5*(y^2) + 1.835e-14*(y^4)$

-2827.9 (air)

-1.81818e-4 SHOULD BE

SECONDARY $z = -1.181818e-4*(y^2) + 1.743e-11*(y^4)$

3127.9 [3117.9] (air)

CORRECTOR (upper surface) $z = 0$ (plane)

10.0 (fused silica)

CORRECTOR (lower surface) $z = -6.11e-5*(y^2) + 9.52e-10*(y^4)$

$+ 2.45e-15*(y^6)$

267.0 [277.0] (air)

FIELD FLATTENER (upper surface) Concave Radius -7000

10.0 (fused silica)

FIELD FLATTENER (lower surface) Concave Radius +700

23.0 (air)

FOCUS (plane)

All dimensions are MM. According to Bowen's notes the definition out to about 30' from the axis can be improved at the expense of the edge definition by moving the corrector plate 10MM farther from the focus, i.e. by using the axial separations given in brackets.

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P50 OPTICAL SYSTEM

SURF	RAD.	THICK	N1	N2	N3	GLASS
0	*****	1E+23	1.00000	1.00000	1.00000	AIR
1	-7619.977	-2827.9	-1.00000	-1.00000	-1.00000	S* REF
2	-2730.003	3127.9	1.00000	1.00000	1.00000	* REF
3	*****	10	1.45637	1.45846	1.46313	SiO2
4	-8183.306	267	1.00000	1.00000	1.00000	* AIR
5	-7000	10	1.45637	1.45846	1.46313	SiO2
6	700	23.73528	1.00000	1.00000	1.00000	AIR
7	*****	0	1.00000	1.00000	1.00000	AIR

ASPHERIC COEFFICIENTS

SURF= 1	C = -1.31234E-04	K = -1	A4 = 1.835E-14
	A6 = 0	AB = 0	A10 = 0
SURF= 2	C = -3.63636E-04	K = -1	A4 = 1.743E-11
	A6 = 0	AB = 0	A10 = 0
SURF= 4	C = -.0001222	K = ⁻¹ / ₁	A4 = 9.52E-10
	A6 = 2.45E-15	AB = 0	A10 = 0

P60 OPTICAL SYSTEM
SPECIFICATION DATA

F-NUMBER	F/N=	8.753388		
STOP RAD.	STO=	762	REL OBSCURATION	DBS= 0
ENT. PUPIL RAD.	EPR=	762		
FIELD ANG.	F1,F2,F3=	0.00000	0.44200	0.62500
LAMBDA (NM)	WL,WM,WS=	656.27	587.67	486.13
DESIGN UNITS	UN=	MM		

EFL	=	13340.16	BFL=	-.1289222
IMAGE DIS.	=	-.1288955	MAG=	-1.334016E-19
ENT. PUPIL DIS.	=	0		
EXIT PUPIL DIS.	=	-1133.481		

PARAMETER ?

P60 OPTICAL SYSTEM
THIRD ORDER

SURF	SPH	COMA	ASTI	DIST	PETZ	LONC	LATC
1	-21.05	-141.45	7.72	0.00	-7.72	0.00	0.00
2	20.08	142.51	0.01	-3.51	21.38	0.00	0.00
3	-0.37	0.87	-0.25	0.30	0.00	-3.98	4.64
4	0.35	-2.32	-8.09	-127.59	1.13	4.10	-1.26
5	-0.04	0.01	-0.00	0.25	-1.32	-0.40	0.07
6	0.03	-0.63	1.89	136.08	-13.20	0.29	-3.53
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SUMS	-1.01	-1.01	1.27	5.53	0.27	0.01	-0.07