

承 認 書

APPROVAL SHEET

FNBIZ.COM (復古科技有限公司)
FUGU ANTENNA & BUSINESS

中華民國

DATE

93 年

11 月

23 日

機種名稱

MODEL

品 名

DESCRIPTION 5 DBI DIPOLE ANTENNA

廠商料號

SUPPLIER P/N

FB-DP05-SMARP-EXX

客戶料號

CUSTOMER P/N

FNBIZ.COM (復古科技有限公司)

FUGU ANTENNA & BUSINESS

承認檔號

FILE P/N

TECHNICAL DATA

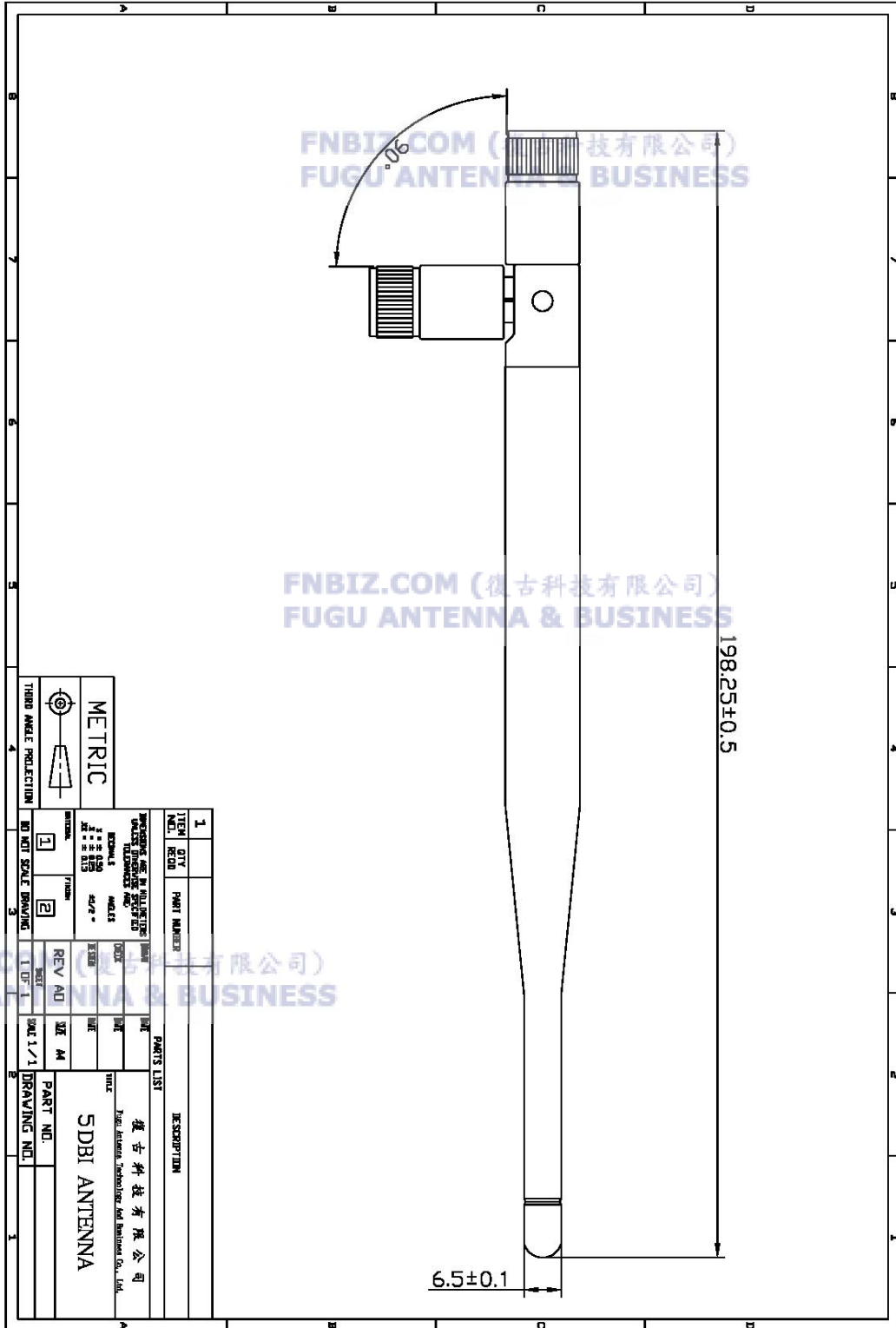
ELECTRICAL PROPERTIES

FREQUENCY RANGE	2.4 ~ 2.5 GHZ
IMPEDENCE	50Ω
VSWR	≤2
GAIN	802.11B,G 5DBI
RADIATION	OMNI
POLARIZATION	VERTICAL
ELECTRICAL WAVE	λ/4 DIOPLE
CONNECTOR	SMA PLUG REVERSE (12.5mm)
wire	RG316

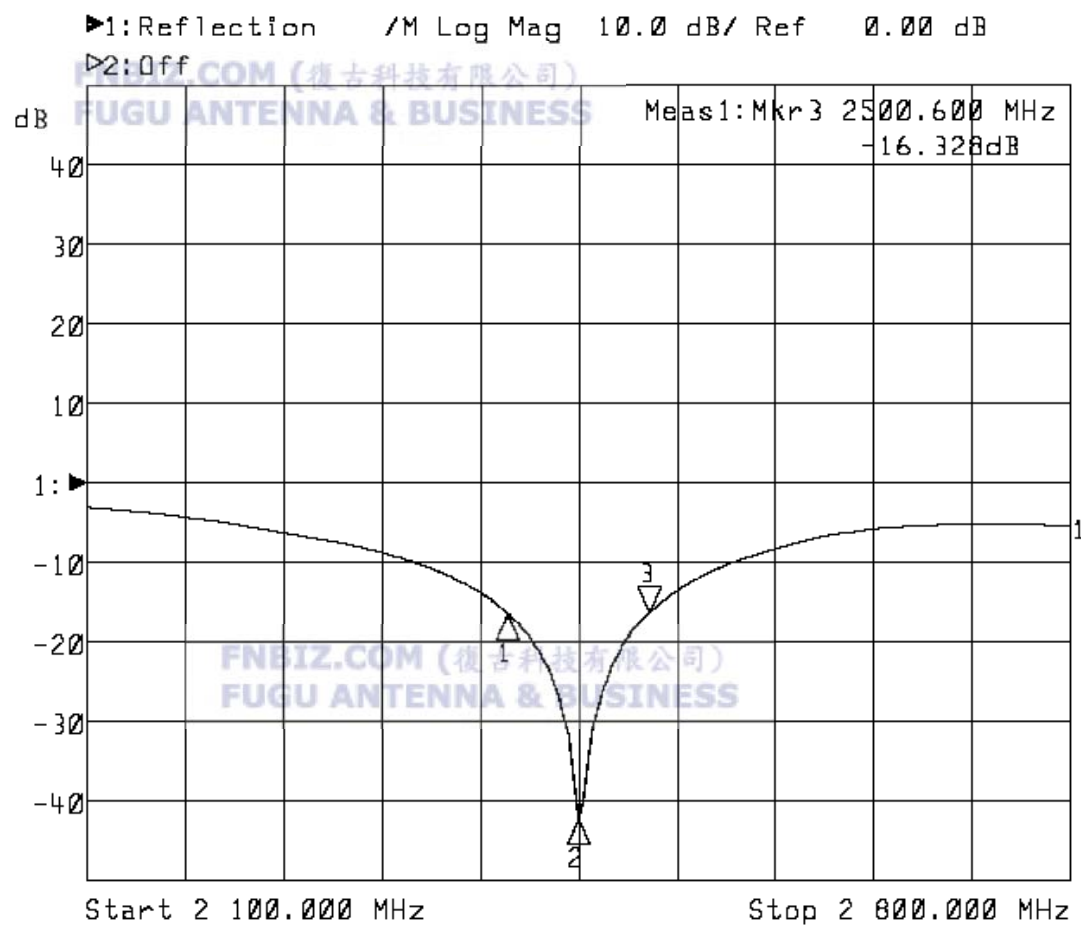
MECHANICAL PROPERTIES

ANTENNA COVER	TPU
color	BLACK
OPERATION TEMPERATURE	-20 ~ +60 °C
STORAGE TEMPERATURE	-30 ~ +75 °C

成品圖

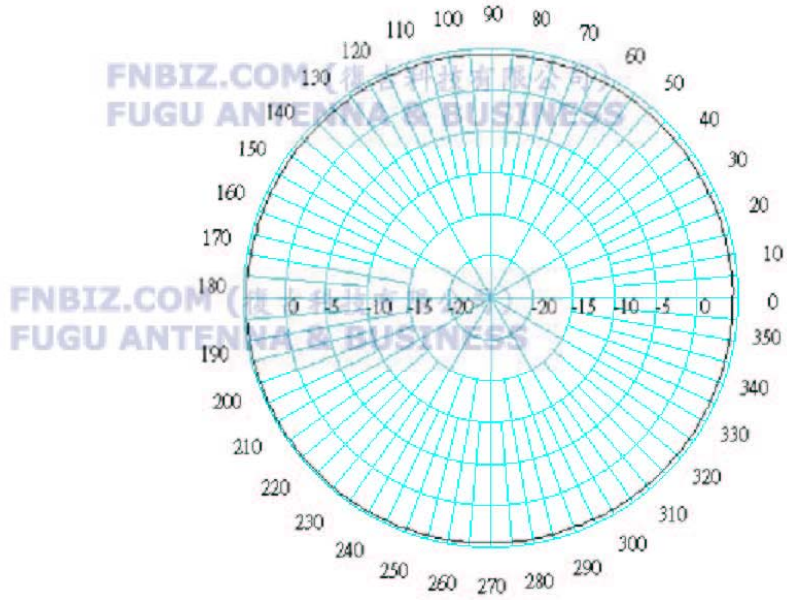


RETURN LOSS

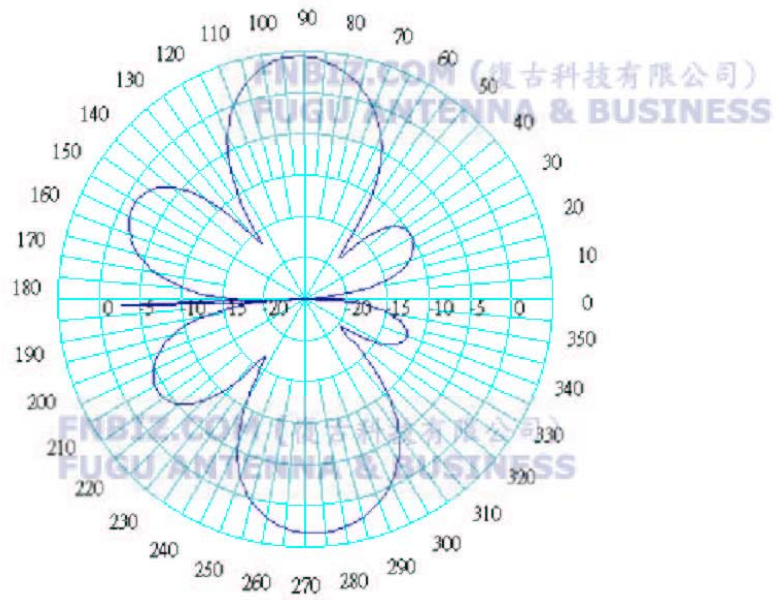


1: Mkr (MHz)	dB	2: Mkr (MHz)	dB
1: 2400.0000	-16.447		
2: 2450.0000	-42.301		
3: 2500.6000	-16.328		

H-PLANE 2.45GHZ=4.876dbi



E-PLANE 2.45GHZ=4.397dbi



塑件

FNBIZ.COM (復古科技有限公司)
FUGU ANTENNA & BUSINESS
Antenna Cover Polyurethane

Elastogran GmbH
Geschäftsbereich TPU-Elastomere



Elastogran GmbH · Postfach 1140 · 49440 Lemförde · Germany
WGJ COMPANY LTD.

P.O. BOX 36 - 431
RC TAOYUAN HSIEN

BASF Gruppe

Date 18.07.2001
No. 62046

Inspection Certificate
EN 10 204-3.1 B (DIN 50046)

Product : ES 95 A 50 000 S No.: 15002939
Batch : 207672
Basic-Batch 207673

Property	Test method	Unit	Value
Dichte	DIN 53479	g/cm ³	1,24
Shore-Haerte D	DIN 53505	-	50
Zugfestigkeit	DIN 53504	MPa	53
Reissdehnung	DIN 53504	%	550
Abrieb	DIN 53516	mm ³	22

Dichte = Density/Densité, Shore Härte = Shore hardness/Shore Duresé, Zugfestigkeit = Tensile strength/Resistance traction,
Reißdehnung = Elongation at break/Allongement rupture, Weitearbeitswiderstand = Tear strength, Abrieb = Abrasion loss/Abrasion

The stated values are measured from a representative batch (basic-batch) of every product campaign.

Test platens are injection moulded from dry granulate with less than 0,05% water content. Test platens tempered 20 hrs. at 100 °C,
then cooled to 23 °C / 50 % RH before testing. Test specimen cut from test platens.

We hereby certify, that the material described above complies with the terms of the order contract

Hübner Schoots

Works inspector

The above information is derived from our quality checks. It does not relieve the purchaser from examining the product upon delivery
and gives no assurance of suitability of the product for any particular purpose.

Antenna Cover Polyurethane

Elastollan S規格系列 (復古科技有限公司)

聚酯類Polyester，有良好機械特性，優異的耐腐性，高彈性，抗拉及撕裂強度用於運動鞋底、溜冰鞋及機械零件等，射出及押出成形

物 性	單位	DIN	S80A	S85A	S88A	S90A	S95A	S98A	S60D	S64D	S74D
用於射出 ▲ 押出 ■ 吹出 ●			▲■	▲■	▲	▲■	▲	▲	▲	▲	▲
硬度 蕭氏A Hardness	Shore A	53505	81	85	88	93	96				
硬度 蕭氏D Hardness	Shore D	53505			36	41	48	55	60	64	75
密度Density	g/cm ³	53479	1.22	1.23	1.23	1.24	1.24	1.25	1.25	1.26	1.26
抗拉強度Tensile strength *	N/mm ²	53504-S2	50	55	55	55	50	45	45	45	40
斷裂延伸率Elongation at break *	%	53504-S2	750	650	650	600	550	500	500	450	300
20% 抗拉模數 Tensile modulus *	N/mm ²	53504-S2	2	2	3	6	8	13	15	22	25
100% 抗拉模數Tensile modulus *	N/mm ²	53504-S2	4	5	6	9	11	16	18	23	30
300% 抗拉模數 Tensile modulus *	N/mm ²	53504-S2	8	8	9	13	20	23	34	38	40
彈性模數-張力測試 (測試樣品3mm) Modulus of elasticity	N/mm ²	53457-1						200	250	410	800
撕裂強度 Tear strength	N/mm	53515	60	70	75	95	120	150	170	200	240
摩擦損耗 Abrasion loss	mm ³	53516	40	35	30	30	30	25	25	25	25
室溫壓縮變形率 Compression set	%	53517	25	25	25	25	25	30	40	45	55
70°C壓縮變形率 Compression set	%	53517	35	35	35	45	45	45	50	55	60
凹口衝擊強度 +23°C	kJ/m ²	53453	不破裂	不破裂	不破裂	不破裂	不破裂	不破裂	不破裂	不破裂	不破裂
Notched impact strength (Charpy) -30°C			不破裂	不破裂	不破裂	不破裂	5	6	6	4	3

*S2試片在100mm/min的應變速度下測量

●厚度2或6mm射出試片，在100°C回火20小時後測驗

●上列測驗值僅供參考，常因客戶製品設計而變

●換算單位：1MPa=10.2kg/cm²=145PSI=1N/mm²

1kJ/m²=1.02kg.cm/cm²

加工條件

-射出成形溫度175~240°C

-模溫20~70°C

-押出成形溫度175~230°C

Antenna Base Polycarbonate
FUGU ANTENNA & BUSINESS

TEIJIN CHEMICALS LTD.

TEIJIN CHEMICALS LTD.
 2-2, UCHISAIWAICHO 1-CHOME, 株式会社)
 CHIYODA-KU, TOKYO, JAPAN. FUGU ANTENNA & BUSINESS

TELEPHONE: TOKYO (3506) 4780
 FACSIMILE: TOKYO (3506) 4780

TO WHOM IT MAY CONCERN

CERTIFICATE OF QUALITY

ITEM	UNIT	TEST METHOD	TEIJIN CHEMICALS QUALITY STANDARD	TEST RESULT
IMPACT STRENGTH (IZOD NOTCHED 3.2mm thick)	kgfcm/cm	ASTM D256	≥ 80	PASS
FLEXURAL MODULUS	kgf/cm ²	ASTM D790	28,600 ± 1,600	PASS
TENSILE STRENGTH (AT BREAK)	kgf/cm ²	ASTM D638	820 ± 140	PASS

NOTE : ALL FIGURES ENTERED IN THIS TABLE ARE FOR THIS SPECIFIC LOT AND, THEREFORE,
 NO GUARANTEE.

TEIJIN CHEMICALS LTD.

M. Kikuchi
 for Y. KIKUCHI
 MANAGER
 SALES ADMINISTRATION DEPT.

Antenna Base Polycarbonate

QMFZ2

Component - Plastics

TEIJIN CHEMICALS LTD

								E50075 (M)	
								(C - cont. from E010 card)	
L-1225UM(d),	All	0.40	94V-2	80	80	80	4	3	2
L-1225ZL(d)		0.75	94V-2	80	80	80	3	1	2
		1.5	94V-2	125	115	125	3	1	3
		2.1	94HB	125	115	125	3	1	3
		3.0	94HB	125	115	125	2	1	3
		6.0	94HB	125	115	125	1	1	4
L-1225LL(d)	All	0.4	94V-2	80	80	80	4	3	2
		0.75	94V-2	80	80	80	3	1	2
		1.5	94V-2	125	115	125	3	1	3
		3.0	94V-2	125	115	125	3	1	3
		3.3	94HB	125	115	125	2	1	3
		6.0	94HB	125	115	125	1	1	4
L-1250W(fz)(d),	All	0.40	94V-2	80	80	80	4	3	2
L-1250UW(d),		0.84	94V-2	80	80	80	4	3	2
L-1250VW(d),		1.5	94HB	125	115	125	4	0	3
L-1250ZW(d)		3.0	94HB	125	115	125	2	0	3
		6.0	94HB	125	115	125	1	0	4

Reports: February 10, 1989; February 10, 1989; September 24, 1990.

Replaces E50075C dated November 1, 1994.

699748006

N7047

Underwriters Laboratories Inc.®

(Cont. on C005 card)

011/0032918

QMFZ8

July 28, 1997

Component - Plastics Certified For Canada

TEIJIN CHEMICALS LTD

E50075 (M)
(C - cont. from B card)

(cc) 10 thru 30 incl.

(i) A two digit number (10-15) denoting carbon filler content.

(j) A two digit number (10-40) denoting the total content of carbon fiber and glass fiber.

ww = A two digit number 10 thru 20 denoting content of carbon filler.

Any one or two letters may be suffixed to the grade.

Marking: Company name and material designation, generic polymer identification, color number where appropriate, and batch or lot number or date of manufacture on container, wrapper or molded on finished part.

See General Information Preceding These Recognitions.

Small-scale test data does not pertain to building materials, furnishings and related contents. Small-scale test data is intended solely for determining the flammability of plastic materials used in the components and parts of end-product devices and appliances, where the acceptability of the combination is determined by UL.

699748006

Underwriters Laboratories Inc.®

011/0251459

Properties of Panlite®

Items	Unit	Test Method	Condition	Weather Resistant Grade (SAE approved)		
				L-1225ZL	L-1225Z	L-1250Z
Specific gravity	—	ASTM D792	—	1.20	1.20	~ 1.20
Water absorption	%	ASTM D570	24hr in 23°C water	0.20	0.20	0.20
Light transmission	%	ASTM D1003	3mm thick	88	88	88
Refractive Index	—	ASTM D542	—	1.585	1.585	1.585
Tensile strength	Yield	MPa (kgf/cm ²)	ASTM D638	65 (660)	63 (640)	62 (630)
	Break	MPa (kgf/cm ²)	ASTM D638	64 (655)	77 (790)	80 (820)
Tensile modulus	MPa (kgf/cm ²)	ASTM D638	—	2,190 (22,300)	2,130 (21,700)	2,120 (21,600)
Tensile elongation	Yield	%	ASTM D638	6	6	6
	Break	%	ASTM D638	130	140	140
Flexural strength	MPa (kgf/cm ²)	ASTM D790	—	96 (980)	93 (950)	92 (940)
Flexural modulus	MPa (kgf/cm ²)	ASTM D790	—	2,330 (23,800)	2,260 (23,000)	2,230 (22,700)
Compressive strength	MPa (kgf/cm ²)	ASTM D695	—	77 (790)	76 (780)	76 (770)
Impact strength	J/m (kgf-cm/cm)	ASTM D256	Izod notched 3.2mm thick	100 (10)	830 (85)	880 (90)
	J/m (kgf-cm/cm)	ASTM D256	Izod notched 6.4mm thick	50 (5)	130 (13)	140 (14)
Rockwell hardness	—	ASTM D785	M scale	77	77	77
Mold shrinkage	%	ASTM D955	Flow direction	0.5-0.7	0.5-0.7	0.5-0.7
			Transverse direction	0.5-0.7	0.5-0.7	0.5-0.7
Heat distortion temperature	°C	ASTM D648	Load 0.451 MPa (4.6 kgf/cm ²)	138	141	142
			Load 1.813 MPa (18.6 kgf/cm ²)	128	131	132
Coefficient of linear expansion	× 10 ⁻³ cm/cm/°C	ASTM D696	Flow direction	7	7	7
			Transverse direction	7	7	7
Dielectric breakdown strength	kV/mm	ASTM D149	Quick voltage rise method 1.6mm thick	30	30	30
Volume resistivity	× 10 ¹² Ω-cm	ASTM D257	—	3	3	3
Dielectric constant	—	ASTM D150	60 Hz	2.95	2.95	2.95
			10 ⁶ Hz	2.9	2.9	2.9
Dielectric loss tangent	—	ASTM D150	60 Hz	0.0004	0.0004	0.0004
			10 ⁶ Hz	0.009	0.009	0.009
Arc resistance	sec	ASTM D495	—	100	100	100
Anti-tracking (CTI)	V	IEG 112	—	300	300	300
Flame resistance	—	UL 94	1.47 mm thick	B4V-2	94V-2	94V-2
			3.05 mm thick	94V-2	94V-2	94V-2
Temperature index	°C	UL 746B	Electric 1.47 mm thick	125	125	125
			Impact 1.47 mm thick	115	115	115
			Non-Impact 1.47 mm thick	125	125	125

All figures entered in this table are the typical figures and, therefore, no guarantee is made that the actual figures will be the same.

Grades of **Panlite**

Grades	Viscosity	Characteristics	Main molding methods	Principal applications
K-1300	High	Standard	Extruding/blow molding/ injection molding	<ul style="list-style-type: none"> • Sheet, film, pipe and other extruded products. • Bottles and other direct blow molded products.
K-1300Y	•	Mold release/ice color	Extruding/blow molding/ injection molding	
K-1300Z	•	Weather resistance/ ice color	Extruding/blow molding/ injection molding	
K-1300W	•	Powder	Extruding/rotational molding	
K-1285	•	Standard	Extruding/blow molding/ injection molding	<ul style="list-style-type: none"> • Large tanks and other rotational molded products.
L-1250	Medium	Standard	Injection molding	<ul style="list-style-type: none"> • Machine parts, electric and electronics appliance parts, medical apparatuses, protective equipment parts, industrial parts in general. • Lighting fixture parts requiring transparency and heat resistance. • Table wares and mechanical parts requiring cold and heat resistance.
L-1250R	•	Mold release	Injection molding	
L-1250Y	•	Mold release/ice color	Injection molding	
L-1250Z	•	Weather resistance/ ice color	Injection molding	
L-1250J	•	Boiling water resistance	Injection molding	
L-1250T	•	Boiling water resistance/mold release/ice color	Injection molding	
L-1250W	•	Powder	Injection molding/ rotational molding	
L-1225	Low	Standard	Injection molding	
L-1225R	•	Mold release	Injection molding/ injection blow molding	
L-1225Y	•	Mold release/ice color	Injection molding/ injection blow molding	
L-1225Z	•	Weather resistance/ ice color	Injection molding	
L-1225J	•	Boiling water resistance	Injection molding	
L-1225T	•	Boiling water resistance/mold release/ice color	Injection molding/injection blow molding	
L-1225W	•	Powder	Injection molding/ rotational molding	
L-1225L	Ultra low	Mold release/ice color	Injection molding	<ul style="list-style-type: none"> • Ultra-thin wall parts of electric & electronics appliances.
L-1225ZL 100	•	Mold release/ weather resistance/ ice color	Injection molding	<ul style="list-style-type: none"> • Ultra-thin lamp lenses.
AD-5503	•	Optical properties/ low contamination	Injection molding	<ul style="list-style-type: none"> • Compact disks, CD-ROM, optical lenses.