



TECHNICAL BUYER'S GUIDE · PRATISHNA ENGINEERS

ELECTRICAL, ELECTRONICS & LIGHTING COMPONENTS

INJECTION MOULDING MACHINE GUIDE

A practical guide for LED lamp, luminaire and wiring-accessory manufacturers: components, materials, mould requirements, production planning, automation, quality, worked examples and what to send for a machine recommendation.

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WHO THIS GUIDE IS FOR

Owners, plant and production managers, process engineers and purchase teams making LED lamp bodies, driver housings, lenses, terminal blocks and lamp holders.

HOW TO USE IT

Sections 01 to 04 define the part, material and mould. Section 05 plans output. Sections 06 to 09 cover automation, quality, examples and your enquiry. Clamp force and shot sizing are covered in our Machine Selection Guide.

NEED A RECOMMENDATION?

Send your drawing, material, part weight, cavities and output target to sales@pratishnaengineers.com. The checklist in Section 09 lists what to include.

SECTION 01 · OVERVIEW

ELECTRICAL, ELECTRONICS & LIGHTING COMPONENTS & INJECTION MOULDING

LED lamps and luminaires are built around moulded plastic: the lamp body, the driver enclosure, the optics and the parts that carry the mains connection.

WHERE INJECTION MOULDING FITS IN LED LIGHTING

India moved to LED lighting at very large scale. Under the UJALA programme 36.87 crore LED bulbs had been distributed by January 2025, alongside the Street Lighting National Programme for LED street lights^[1].

Quality standards for LED products are set and enforced by BIS and MeitY^[2]. Self-ballasted LED lamps are covered by IS 16102, which was revised in 2026 with added requirements such as abnormal operation and ingress protection tests^[5].

Switches, sockets, breakers and electronics housings are covered in separate guides.

MAIN COMPONENT CATEGORIES

LAMP BODIES LED bulb housings and lamp bodies	HEAT-SINK HOUSINGS Plastic bodies that replace aluminium	DRIVER HOUSINGS LED driver boxes and enclosures	LENSES Primary and secondary LED optics
REFLECTORS Moulded, then painted or metallised	TERMINAL BLOCKS Connector strips for luminaires	JUNCTION BOXES Luminaire wiring boxes	HOLDERS B22 and E27 holders, ceiling roses, batten holders

WHY INJECTION MOULDING SUITS THESE PARTS

- Insulating housings with ribs, bosses and snap fits in one shot.
- Optical surfaces replicated from a polished cavity at volume.
- Flame-rated grades moulded to the wall thickness the certificate covers.

TYPICAL MANUFACTURING CHALLENGES

- Heat from the LED and driver ages the plastic for years.
- Lenses need optical-grade processing and clean handling^[7].
- Thermoset parts need a different machine setup^[10].
- Glass and conductive fillers wear screws and moulds.

WHERE MOULDING SITS IN THE PRODUCT CHAIN

RESIN FR, optical, thermoset	DRYING PC, PBT, PA	INJECTION MOULDING bodies, optics, holders	INSERTS brass contacts, screws	FINISHING metallising, potting	ASSEMBLY LED board, driver, cap	TESTING safety, photometry
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KEY REQUIREMENTS FOR LIGHTING COMPONENTS

HEAT AGEING Parts sit near the driver and LED board for the lamp's life, and lamp standards assume a luminaire ambient above room temperature ^[4] .	FIRE SAFETY Insulating parts near live contacts face glow-wire and flammability tests ^{[3][11]} .	TRACKING RESISTANCE Terminal parts need a CTI suited to the voltage and pollution ^[12] .
OPTICAL QUALITY Lenses and covers need controlled shrinkage and no flow lines ^[7] .	MECHANICAL FIT Caps, threads and holders must hold torque and mate with standard lamps ^{[3][6]} .	COST PER LAMP High-volume lamps are price-driven, so cycle and scrap matter.

SECTION 02 · COMPONENTS

MAJOR ELECTRICAL, ELECTRONICS & LIGHTING COMPONENTS

The lighting components covered by this guide, their materials and what each asks of the moulding process.

COMPONENT	APPLICATION	MATERIAL(S)	INJECTION MOULDING CONSIDERATIONS
LED bulb housing / lamp body (incl. heat-sink housing)	Body of retrofit LED lamps carrying the LED board, driver and cap	FR PC, PBT, thermally conductive PC/PA, PP	Thermally conductive compounds replace aluminium; they need higher melt and mould temperatures and are abrasive on screw and barrel. Judge the resin on heat-aged properties. Cap, diffuser and body are separate tools.
LED driver housing / enclosure	Encloses the driver electronics in lamps and luminaires	FR PC, PBT-GF, PA66-GF, PPO/PPE	UL94 V-0, glow wire, CTI and the customer spec land on one material. Creepage and clearance are moulded-in features. Compartments run at 80 to 120 °C in high-bay, outdoor and recessed fittings. If potted, confirm resin compatibility with the potting compound.
LED lens and reflector	Beam shaping, collimation and reflection	Optical PMMA, optical PC, COP/ COC	Mirror-finish cavity, slow injection with a long sustained pack. Shrinkage varies with wall thickness, so process stability sets the tolerance. Gate position and flow lines distort the beam. Metallised reflectors need painting or vacuum metallising after moulding.
Terminal block, connector strip and luminaire junction box	Mains connection inside luminaires and fittings	PA66-GF (V-0), PBT-GF, DMC/BMC polyester, melamine, PPO/PPE	V-0 PA66 is the default. Glow-wire certificates are thickness-specific. BMC where arc and heat exposure are higher. Clamp pockets must hold tolerance after nylon takes up moisture.
Lamp holder (B22 / E27), ceiling rose and batten holder	Holding the lamp and connecting it to the supply	FR PC (outer), PBT (inner), urea formaldehyde, melamine, DMC/ BMC polyester, FR PP	Common construction is a PC outer casing with a PBT inner carrying the contacts. UF is used on economy and tender ranges; thermoset needs mould brushing and flash handling in the cell. Brass contacts are inserted.

UF, melamine and DMC/BMC are thermosets and need a thermoset-equipped machine, not a standard thermoplastic setup. Ceramic and porcelain holders, LED chips, driver boards and metal caps are not moulded parts.

WHAT IS MOULDED AND WHAT IS BOUGHT IN

PRODUCT	MOULDED PARTS	OTHER PROCESSES OR BOUGHT-IN PARTS
LED bulb	Body or heat-sink housing, diffuser dome	LED board, driver, metal cap; aluminium body on some ranges
LED driver	Housing and cover	PCB assembly, potting compound
Luminaire optics	Lens, reflector carrier	Vacuum metallising or paint on reflectors
Terminal block	Insulating body, connector strip	Brass or steel clamps and screws
Lamp holder	Outer shell, contact carrier, ceiling rose base	Brass contacts, springs, screws

GROUPING BY MOULDING DEMAND

HEAT AND FIRE RATED Bulb bodies, driver housings, terminal blocks. Flame, glow-wire and heat-ageing grades.	OPTICAL Lenses and reflectors. Polished cavities, clean handling, stable process.	INSERT AND THERMOSET Holders and terminal blocks with brass inserts, often in UF, melamine or BMC.
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SECTION 03 • MATERIALS

MATERIALS USED FOR LIGHTING COMPONENTS

Lighting parts are chosen on heat ageing, fire behaviour, electrical tracking and, for optics, light transmission.

MATERIAL	TYPICAL COMPONENTS	RELEVANT PROPERTIES	PROCESSING CONSIDERATIONS	LIMITATIONS TO CHECK
FR PC	Bulb bodies, driver housings, holder outer shells	Tough, flame-rated grades available.	Dry thoroughly; high melt and mould temperature.	Stress cracking with some potting compounds.
Optical PC	Lenses, covers	Far tougher than PMMA.	Under-drying hides damage to impact and clarity ^[8] .	Gate stress and birefringence ^[8] .
Optical PMMA	Lenses, reflectors	About 92% light transmission.	Shrinkage 0.2 to 0.8% by wall and process ^[7] .	Brittle; standard grades distort above 85 to 100 °C ^[8] .
COP / COC	Precision lenses	Near-zero moisture uptake ^[8] .	Narrow window; yellows if overheated ^[8] .	Cost.
Thermally conductive PC / PA	Heat-sink lamp bodies	Replaces aluminium; V-0 grades exist ^[9] .	Higher melt and mould temperature; abrasive.	Judge on heat-aged properties.
PBT, PBT-GF	Holder inner, driver housings, terminal blocks, bodies	Dimensionally stable, good electrical properties.	Dry before moulding; GF wears the screw.	Glass orientation causes warp.
PA66-GF (V-0)	Terminal blocks, driver housings	Strength and flame rating at thin walls.	Must be dried; abrasive.	Takes up moisture and grows.
PPO / PPE	Driver housings, junction boxes	Heat and flame resistance, low moisture uptake.	Higher processing temperature.	Chemical resistance to check.
PP, FR PP	Bulb bodies (PP), batten holders (FR PP)	Low cost, easy to mould.	Shrinkage and warpage.	Lower heat resistance than PC or PBT.
DMC / BMC polyester	Terminal blocks, lamp holders	Dielectric strength and heat resistance ^[10] .	Stuffer or ram feed; heated mould ^[10] .	No regrind; flash control.
UF, melamine	Lamp holders, terminal parts	Thermoset, heat and arc resistant.	Thermoset setup; mould brushing.	Brittle; flash in the cell.

General material behaviour only. Confirm grade data, flame and glow-wire certificates at the actual wall thickness, and potting compatibility with the supplier.

WHAT THE STANDARDS ASK OF MATERIALS

IS 16102 Part 1 for LED lamps calls up the glow-wire test method of IS 11000^[3]. Glow-wire ratings (GWFI and GWIT) describe how a material behaves when touched by an overheated part^[11], and CTI describes resistance to surface tracking under contamination^[12]. Both are tied to specimen thickness, so the grade must be checked at the moulded wall.

MATERIAL SELECTION QUESTIONS

- ☐ What temperature does the part reach next to the driver or LED board?
- ☐ Does it retain or support live parts?
- ☐ Which flame, glow-wire and CTI values does the customer specify?
- ☐ Is it optical, and what transmission is needed?
- ☐ Will it be potted, metallised or ultrasonically welded?

SECTION 04 · DESIGN & MOULD

COMPONENT DESIGN & MOULD REQUIREMENTS

Lighting moulds split into three families: insulating housings, optical parts and insert or thermoset parts. Each asks different things of the mould.

DESIGN FEATURES THAT AFFECT MOULDING

FEATURE	WHY IT MATTERS IN LIGHTING PARTS	MOULDING IMPLICATION
Creepage ribs and barriers	Keep live parts apart on driver housings and terminal blocks.	Thin, deep ribs to fill completely; no short shots or flash.
Heat-sink fins	Carry heat out of plastic lamp bodies.	Deep fins need draft, venting and wear-resistant steel.
Optical surfaces	Set the beam of lenses and covers.	Polished inserts, gate away from the optical zone ^[8] .
Varying lens thickness	Aspheric and TIR lenses are thick in places.	Differential shrinkage; long hold and cooling ^{[7][14]} .
Insert seats	Brass contacts and clamps in holders and terminal blocks.	Accurate locating; loading each cycle or press-in later.
Threads and bayonets	E27 holders use Edison threads ^[6] ; B22 uses pins.	Unscrewing or collapsible cores; accurate thread start.
Weld joints and snap fits	Driver housings closed by ultrasonic welding or clips.	Stable shrinkage; clean energy directors.
Potting cavities	Drivers filled with compound for sealing.	Fill and vent paths for the potting stage.

MOULD CONSIDERATIONS

ITEM	LIGHTING POINTS	ITEM	LIGHTING POINTS
Cavity layout	Holder inners and small lenses: 4 to 16. Bodies and driver housings: 1 to 4.	Steel	Wear-resistant steel for glass, mineral and conductive fillers.
Runner	Hot runners for cosmetic bodies; cold runners common on optics.	Polish	Mirror-finish inserts for lenses; protect them in storage.
Venting	Deep fins and thermosets need generous venting.	Thermoset moulds	Heated moulds; flash removal between shots ^[10] .
Temperature	Optics need stable mould temperature over the run ^[7] .	Side actions	Thread cores for E27 shells; side cores for driver cable entries.

SECONDARY OPERATIONS THAT SHAPE THE MOULD

OPERATION	TYPICAL PARTS	WHAT IT ASKS OF THE MOULDED PART
Vacuum metallising or painting	Reflectors	Surface finish good enough to coat; no release agent residue.
Potting	Driver housings	Compatible resin, vent paths, no stress-cracking sites.
Ultrasonic welding	Driver housings, bulb assemblies	Consistent shrinkage and joint geometry.
Contact assembly	Lamp holders, terminal blocks	Pockets and seats held to size.

SECTION 05 · PRODUCTION PLANNING

PRODUCTION CAPACITY & CYCLE-TIME PLANNING

Lighting plants mix fast small parts with slow optical parts. Plan each part on its own cycle and cavity count, then add up the machine hours.

OUTPUT

Parts/hour = Cavities × 3600 ÷ Cycle time (s)

Effective/hour = Parts/hour × Utilisation

Day = Effective/hour × Hours run

Utilisation covers mould and colour changes, start-up, drying, maintenance and rejects.

EXAMPLE 1 · 8-CAVITY PBT HOLDER INNER

8 × 3600 ÷ 18 s = 1,600 /h

× 0.85 utilisation = 1,360 /h

× 22 h = 29,920 /day

× 26 days = 777,920 /month

EXAMPLE 2 · 2-CAVITY PMMA LED LENS

2 × 3600 ÷ 90 s = 80 /h

× 0.85 = 68 /h · × 22 h = 1,496 /day

× 26 days = 38,896 /month

Working backwards: for 60,000 lenses a month in 572 running hours you need 105 per hour. Cavities = 105 × 90 ÷ (3600 × 0.85) ≈ 3.1, so a balanced 4-cavity mould or a second machine.

Illustrative example. Cycle times of 18 s and 90 s, 85% utilisation, 22 h per day and 26 days per month are assumptions. Actual requirements depend on the component, material, mould and production conditions.

WHAT SETS THE CYCLE TIME

PHASE	LIGHTING INFLUENCE
Injection & hold	Lenses need slow fill and a long sustained pack.
Cooling	Rises roughly with wall thickness squared ^[14] ; thick lenses are slowest.
Cure	Thermoset parts cure in a heated mould ^[10] .
Handling	Insert loading and clean lens removal.

BALANCING CAVITIES, CLAMP FORCE AND OUTPUT

FR PP BATTEN HOLDER BASE	PROJECTED AREA	CALCULATED FORCE	RATED AT 85%	SHOT	EFFECTIVE OUTPUT
2 cavities	64 cm ²	26 t	30 t	32 g	245 /h
4 cavities	126 cm ²	51 t	60 t	63 g	490 /h
8 cavities	248 cm ²	100 t	117 t	124 g	979 /h

Illustrative example. Force = projected area × clamp factor K × safety factor S. PP is commonly given 2 to 3 US tons per square inch^[13], about 0.28 to 0.42 t/cm²; K = 0.35 t/cm² and S = 1.15 assumed. Also assumed: 28 cm² and 14 g per part, runner area 8 / 14 / 24 cm² and weight 4 / 7 / 12 g, 25 s cycle, 85% utilisation.

PLANNING TOTAL MACHINE HOURS

Machine hours = Σ (monthly volume per part ÷ effective output per part)

Add the hours for every body, lens, holder and terminal part, then divide by the running hours per machine (572 here). Optical parts often need dedicated machines kept clean for clear resin.

MACHINE UTILISATION AND PLANNED DOWNTIME

DRYING TIME

PC, PBT and PA need dry resin before start-up.

COLOUR AND CLEAR

Move from coloured to clear resin with thorough purging.

THERMOSET CHANGEOVER

Barrel and mould setup differ from thermoplastics.

FESTIVE PEAKS

Build lamp and holder stock ahead of seasonal demand.

SECTION 06 · AUTOMATION

AUTOMATION & PRODUCTION EFFICIENCY

In lighting plants, automation protects optical surfaces, places brass contacts and removes thermoset flash, as much as it saves labour.

AUTOMATION	WHERE IT ADDS VALUE IN LIGHTING	WHEN IT USUALLY MAKES SENSE
Robot take-out	Removes lenses without touching optical faces.	Every optical part; large bodies and housings.
Sprue picker	Removes cold runners from holder and terminal moulds.	Multi-cavity cold-runner moulds.
Insert loading	Places brass contacts and terminal clamps.	Insert-moulded holders and terminals at volume.
Deflashing	Removes thermoset flash from parts and mould.	UF, melamine and BMC parts.
Vision inspection	Checks lenses for flow lines, specks and shorts.	High-volume optics and certified parts.
Ultrasonic welding	Closes driver housings and bulb assemblies.	Welded housings at volume.
Resin drying and conveying	Keeps PC, PBT and PA dry and clean.	Every engineering and optical resin.

Lighting plants often run many small moulds for holders and terminals next to a few slow optical moulds. Shared drying, conveying and inspection usually pay back first.

AUTOMATION BY PRODUCT GROUP

PRODUCT GROUP	MAIN AUTOMATION	WHY
Lenses and reflectors	Robot, vision, clean conveyor	Surfaces must stay untouched and clean
Bulb bodies, driver housings	Robot, welding, drying	Cosmetic parts and joined assemblies
Holders and terminal blocks	Insert loading, sprue picker	Brass parts placed every cycle
Thermoset parts	Deflashing, mould cleaning	Flash on parts and parting line

DECIDING ON AUTOMATION

SURFACE QUALITY Hand removal marks optical and cosmetic faces.	INSERTS Automated loading keeps the cycle steady and hands out of the mould.	VOLUME AND REPEATABILITY High lamp volumes make shared auxiliaries worth planning.
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INTERFACES TO SPECIFY ON THE MACHINE

ROBOT Signal interface and safety interlocks.	CORE PULLS Circuits for thread cores and side cores.	TEMPERATURE Stable barrel and mould control for optics.	AUXILIARIES Dryer, loader, conveyor connections.
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WHERE THE COST OF A MOULDED PART COMES FROM

MATERIAL FR, optical grades	MACHINE per machine hour	LABOUR inserts, packing	POWER heating, drying	MOULD polish, wear	REJECTION optics, flash	PACKING scratch-free
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On lenses, cycle time and rejection dominate. On holders and terminal blocks, material and insert handling dominate. Use your own rates to compare options.

SECTION 07 · QUALITY

QUALITY, TESTING & COMMON DEFECTS

A lighting part is judged on safety first: it must not ignite, track or loosen, and then it must light the space as designed.

TESTS AND CHECKS

CHECK	WHAT IT INVOLVES	LINK TO MOULDING
Glow wire	Heated wire applied to the part or specimen; ignition and flaming judged by method ^[1] . IS 16102 Part 1 refers to this test method ^[3] .	Grade, wall thickness, voids
Tracking (CTI)	Voltage the surface withstands under drops of contaminating solution ^[12] .	Grade, surface condition near terminals
Flammability	UL94-type rating of the grade at a stated thickness ^[11] .	Wall thickness, regrind, colour
Cap torsion	The cap must stay attached to the lamp under specified torque ^[3] .	Cap seat geometry, shrinkage
Thermal conditions	Lamp performance is set at room ambient; inside a luminaire it runs hotter ^[4] .	Heat-aged properties of body and housing
Holder fit	Edison thread holders to IEC 60238 ^[6] ; bayonet holders to their own standard.	Thread and pin geometry, inserts
Optical checks	Transmission, form and cosmetic inspection of lenses.	Shrinkage, flow lines, stress ^[7]

Test methods and limits come from the applicable standard. IS 16102 Part 1 was revised in 2026^[5]; confirm the current edition and certification requirements for each product.

IN-PROCESS CONTROLS

MOISTURE Check dryer dew point and resin moisture for PC, PBT and PA.	WEIGHT BY CAVITY Flags short shots in ribs and fins.	LENS INSPECTION Light-box or vision check for lines and specks.	INSERT CHECK Presence and position of brass contacts.
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TROUBLESHOOTING COMMON DEFECTS

DEFECT	POSSIBLE CAUSES	EFFECT ON THE PART	AREAS TO INVESTIGATE
Flow lines on lens	Fast or uneven fill, cold mould	Visible hot spots, beam distortion	Injection speed, mould temperature, gate
Birefringence, stress	Gate stress, short pack, fast cooling ^[8]	Cracking, optical distortion	Gate design, pack profile, cooling
Splay, silver streaks	Moist PC, PBT or PA	Weak, rejected parts	Drying time, temperature, dew point
Warp	Glass orientation, uneven cooling	Housings that will not seal or weld	Gating, cooling layout, rib design
Short shots in ribs or fins	Long thin flow, poor venting	Reduced creepage, weak fins	Venting, melt temperature, gate
Thermoset flash	Worn shut-offs, low clamp, overfill	Flash in contact pockets	Parting line, clamp, shot size
Sink on bosses	Solid bosses under cosmetic faces	Rejects on show faces	Boss coring, hold pressure
Fibres on surface	Glass or conductive filler	Rough cosmetic surface	Mould temperature, fill speed

SECTION 08 · WORKED EXAMPLES

PRACTICAL MACHINE-SELECTION EXAMPLES

Three typical lighting parts show how the selection logic changes with the component. These are engineering illustrations with assumed inputs, not customer case studies.

A · HEAT-SINK LED BULB BODY		HEAT + FILLER
APPLICATION · MATERIAL	Retrofit LED lamp body · thermally conductive PC (to be confirmed)	
CHARACTERISTICS	Thin fins, cap seat, driver cavity; heat-aged performance required	
CAVITIES · OUTPUT	2 to 4 · set by monthly lamp volume	
MOULD CONSIDERATIONS	Wear-resistant steel, deep-fin venting, hot runner for a cosmetic face	
SECONDARY	Driver insertion, cap fixing, dome assembly	
EVALUATE Abrasive filler and higher melt temperature drive the screw, barrel and temperature control. Tonnage follows from projected area. STILL NEEDED CAD projected area, grade data sheet, volume per wattage.		

B · PMMA SECONDARY LENS		OPTICAL
APPLICATION · MATERIAL	LED secondary lens · optical PMMA	
CHARACTERISTICS	Thick centre, polished faces, tight form	
CAVITIES · OUTPUT	2 to 4 · about 68 per hour on 2 cavities at 90 s (Section 05)	
MOULD CONSIDERATIONS	Mirror polish, gate away from the optic, stable mould temperature	
SECONDARY	Vision inspection, clean packing	
EVALUATE Shot repeatability, slow controlled injection and long hold matter more than clamp force. Clear-resin purging and clean handling decide the cell. STILL NEEDED optical specification, lens drawing, volume.		

C · TERMINAL BLOCK		THERMOPLASTIC OR THERMOSET
APPLICATION · MATERIAL	Luminaire terminal block · PA66-GF V-0 or BMC	
CHARACTERISTICS	Small body, clamp pockets, creepage barriers	
CAVITIES · OUTPUT	8 to 16 · set by fitting volume	
MOULD CONSIDERATIONS	Flash-free pockets, wear-resistant steel; heated mould for BMC	
SECONDARY	Clamp and screw assembly	
EVALUATE The material choice decides the machine: PA66-GF runs on a thermoplastic setup, BMC needs a stuffer-fed thermoset setup ^[10] . Shot size is small. STILL NEEDED voltage and glow-wire rating, grade, drawing, volume.		

WHAT DECIDED THE MACHINE IN EACH EXAMPLE

SELECTION FACTOR	A · BULB BODY	B · LENS	C · TERMINAL BLOCK
Main limit	Abrasive filler, heat	Optical repeatability	Thermoplastic or thermoset
Clamp force	Needs projected area	Modest; control matters more	Small part, many cavities
Auxiliaries	Dryer, robot	Robot, vision, clean conveyor	Insert or deflash equipment

Illustrative example. Actual requirements depend on the component, material, mould and production conditions.

SECTION 09 • BUYER CHECKLIST

MACHINE BUYER'S CHECKLIST

What to prepare before asking an injection moulding machine manufacturer for a recommendation on a lighting component.

COMPONENT

- ☐ 2D drawing and 3D CAD model
- ☐ Part weight, runner weight, wall thickness
- ☐ Grade data sheet and certificates
- ☐ Insert, thread and cap details
- ☐ Optical or cosmetic surfaces marked

PRODUCTION

- ☐ Monthly volume per part
- ☐ Wattage and colour range
- ☐ Cavity count and target cycle time
- ☐ Operating hours and shifts
- ☐ Clear and coloured resin split

MOULD

- ☐ New or existing mould; size and weight
- ☐ Hot or cold runner
- ☐ Steel for filled or thermoset material
- ☐ Thread and side cores
- ☐ Previous machine specification, if any

LIGHTING APPLICATION

- ☐ Flame, glow-wire and CTI requirement
- ☐ Operating temperature near driver or LED
- ☐ Indoor or outdoor, IP rating
- ☐ Potting, welding or metallising after moulding
- ☐ BIS or customer certification needed

DOCUMENTS TO REQUEST FROM THE MACHINE SUPPLIER

PLATEN DRAWING

Tie-bar spacing, mounting holes, ejector pattern, nozzle details.

LAYOUT

Footprint, robot and conveyor space, access.

UTILITIES

Connected load, cooling water, air and oil needs.

TRIAL REPORT

Trial or acceptance data at your settings.

QUESTIONS TO ASK BEFORE YOU BUY A MACHINE

#	QUESTION	WHY IT MATTERS FOR LIGHTING PARTS
1	What shot repeatability does the machine hold at my shot size?	Lens form and cavity balance.
2	Can injection speed and hold pressure be profiled in several stages?	Slow optical fill and long pack.
3	Is a wear-resistant screw and barrel available?	Glass, mineral and conductive fillers.
4	Can the machine be set up for thermoset (BMC, UF, melamine)?	Holders and terminal blocks.
5	How stable is barrel and mould temperature control over a shift?	Optics and heat-sensitive grades.
6	What robot and insert-loading interfaces are supported?	Clean lens removal and brass contacts.
7	How many core-pull circuits are available?	E27 thread cores and side cores.
8	Can the control store settings for each part and colour?	Many parts across a lamp range.
9	Can shot data be logged for traceability?	Certified lamps and fittings.
10	What installation, training and spare-parts support is included?	Uptime through seasonal peaks.

SECTION 10 • TECHNICAL CONSULTATION

PRATISHNA ENGINEERS & TECHNICAL CONSULTATION

Pratishna Engineers Ltd. is a Mumbai-based injection moulding machine manufacturer with in-house design, manufacturing, assembly, testing and service, supplying plastic component manufacturers in India and international markets.

35+

YEARS OF EXPERIENCE

9,000+

MACHINES SUPPLIED

1,000+

CUSTOMERS

In-house

DESIGN TO SERVICE

Machines are used for automotive, packaging, electrical and electronics, medical, consumer, agriculture and industrial applications.

OUR TECHNICAL APPROACH

COMPONENT	MATERIAL	MOULD	PRODUCTION REQUIREMENT	MACHINE CONFIGURATION
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SEND YOUR COMPONENT & PRODUCTION REQUIREMENTS

Component drawing · material · part weight · mould details · cavity count · production requirement · other requirements such as flame and glow-wire rating, optical specification or inserts.

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