

SPIE. FIELD
GUIDE

Field Guide to
Molded Optics

*Alan Symmons
Michael Schaub*

Field Guide to
Molded Optics

Alan Symmons
Michael Schaub

SPIE Field Guides
Volume FG37

John E. Greivenkamp, Series Editor

SPIE PRESS
Bellingham, Washington USA

APPL-1018 / Page 2 of 4

Library of Congress Cataloging-in-Publication Data

Names: Symmons, Alan, author. | Schaub, Michael P., author.
Title: Field guide to molded optics / Alan Symmons and Michael Schaub.
Other titles: Molded optics
Description: Bellingham, Washington USA : SPIE Press, [2016] | © 2016 |
Series: SPIE field guides | Includes bibliographical references and index.
Identifiers: LCCN 2015047156 | ISBN 9781510601246 (spiral ; alk. paper) |
ISBN 1510601244 (spiral ; alk. paper) | ISBN 9781510601253 (PDF) |
ISBN 1510601252 (PDF) | ISBN 9781510601260 (epub) | ISBN
1510601260 (epub) | ISBN 9781510601277 (Kindle) | ISBN 1510601279
(Kindle)
Subjects: LCSH: Optical instruments--Design and construction--
Handbooks, manuals, etc. | Optical materials--Handbooks, manuals, etc. |
Plastics--Optical properties--Handbooks, manuals, etc.
Classification: LCC TS513 .S96 2016 | DDC 620.1/1295--dc23
LC record available at <http://lcn.loc.gov/2015047156>

Published by

SPIE
P.O. Box 10
Bellingham, Washington 98227-0010 USA
Phone: 360.676.3290
Fax: 360.647.1445
Email: Books@spie.org
Web: www.spie.org

Copyright © 2016 Society of Photo-Optical Instrumentation Engineers
(SPIE)

All rights reserved. No part of this publication may be reproduced or
distributed in any form or by any means without written permission of the
publisher.

The content of this book reflects the thought of the authors. Every effort has
been made to publish reliable and accurate information herein, but the
publisher is not responsible for the validity of the information or for any
outcomes resulting from reliance thereon.

Printed in the United States of America.

First printing.

For updates to this book, visit <http://spie.org> and type "FG37" in the search
field.

SPIE.

Glass versus Plastic

When comparing glass to plastic for **molded optics**, **moldable glass** provides an expansive range of options with superior performance in all material properties with the exception of specific gravity and impact strength.

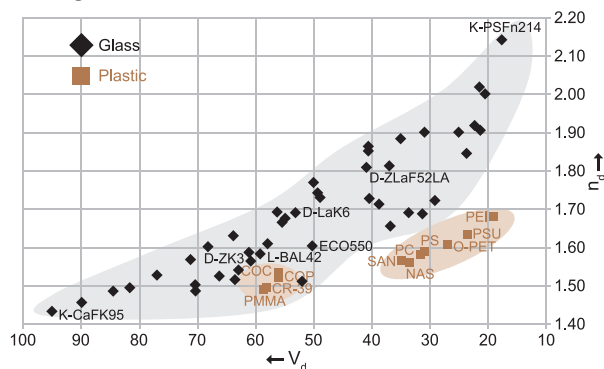
Advantages of Glass

- Selection
- Range of optical properties
- Thermal properties
- Transmission
- Durability
- Environmental considerations

Advantages of Plastic

- Cost
- Weight
- Impact strength
- Integrated features
- More than two optical surfaces

Glass also provides a better selection of optical properties for designers to choose from.



Plastic provides a distinct cost and weight advantage and an excellent ability for forming complicated surfaces and integrated features. Disadvantages of plastics include: high static buildup that attracts foreign particles and can lower cosmetic surface qualities, high thermal expansion, and high temperature coefficient of refractive index. Plastics cannot be cemented or coated as easily as glass.

Field Guide to Molded Optics