PYRROMETHENE 556

Chemical Name: Disodium-1,3,5,7,8-pentamethylpyrromethene-2,6-disulfonate-difluoroborate complex
MW: 466.19
CAS Registry Number: 121461-69-6
Exciton Catalog No.: 05560
Synonyms: PMPDS-BF₂, PM-556

Spectral Information:

\[ \lambda_{\text{max,abs}} = 492\text{nm} \quad \text{(Methanol)} \]
\[ \varepsilon_{492} = 7.2 \times 10^4 \text{ liter mol}^{-1} \text{ cm}^{-1} \]
\[ \lambda_{\text{max,fl}} = 533\text{nm} \quad \text{(Methanol)} \]
\[ \Phi_f = 0.73 \quad \text{(Water)} \]

Selected Solubility Limits (25°C):
- Methanol: 0.74 g/liter
- EG: 8.1 g/liter
- H₂O: 6.4 g/liter
- DMF: 2.3 g/liter

REPORTED LASER PERFORMANCE DATA

<table>
<thead>
<tr>
<th>Lasing Wavelength</th>
<th>Max. Range (nm)</th>
<th>Pump Source</th>
<th>Concentration (molar)</th>
<th>Conversion Efficiency (slope)</th>
<th>Stability (1/2-life)</th>
</tr>
</thead>
<tbody>
<tr>
<td>548</td>
<td>537-605</td>
<td>FL(Triaxial)</td>
<td>2.5 \times 10^{-4}</td>
<td>28.9%</td>
<td>s (-)</td>
</tr>
<tr>
<td>555</td>
<td>(545-585)</td>
<td>FL(Coaxial)</td>
<td>2 \times 10^{-4}</td>
<td>31%</td>
<td>“very long”</td>
</tr>
<tr>
<td>561</td>
<td>540-580</td>
<td>FL</td>
<td>7 \times 10^{-5}</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>553</td>
<td>530-624</td>
<td>Ar(458-514)</td>
<td>2 \times 10^{-3}</td>
<td>45%</td>
<td>300Wh</td>
</tr>
<tr>
<td>546</td>
<td>527-583</td>
<td>Ar(488)</td>
<td>4.3 \times 10^{-3}</td>
<td>37%</td>
<td>-</td>
</tr>
<tr>
<td>550</td>
<td>527-584</td>
<td>Ar(514.5)</td>
<td>7.5 \times 10^{-3}</td>
<td>35%</td>
<td>-</td>
</tr>
<tr>
<td>547</td>
<td>523-582</td>
<td>Ar(699-1,488)</td>
<td>4.3 \times 10^{-3}</td>
<td>12.2%</td>
<td>-</td>
</tr>
</tbody>
</table>

*(FWHM); s (slope efficiency) DMA (N,N-Dimethylacetamide); DMF (N,N-Dimethylformamide); EG (Ethylene Glycol); MeOH (Methanol)

REFERENCES:
194. S.E. Neister, private communication. [Phase-R Laser System]
197. J. Hsia, Candela Laser Corporation, private commun., 1989. [Candela Model LFDL-8 and High Power LFDL]
222. M. Benson, Coherent Laser Group, private commun., 1994. Results were obtained using R560 optics. [Coherent Model 899-29]
224. M.M. Mickelson, private commun., 1993. Pumping with 6 watts (488nm) produced 0.72 watts output centered at 547nm.

For a current list of biology, biological stain, or biochemistry references for Pyrromethene 556 from PubMed, click on the following link: Pyrromethene 556

NOTES:
Pyrromethene 556 is offered by Exciton under U.S. Patent Nos. 4,916,711 and 5,189,029 and other worldwide patents.